IMPLEMENTATION OF ENTERPRISE RESOURCE PLANNING SYSTEMS IN SACCOS IN NAIROBI

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DECLARATION

STUDENT'S DECLARATION

I solely declare that this is my original research project and has not been presented in any university for an award of a degree.
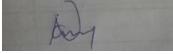
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D61/10663/2018

SUPERVISOR'S DECLARATION

This project has been submitted with my approval as the university supervisor.

Signature ……………………………………… Date ……23/11/2021…………

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DEDICATION

My academic project is humbly dedicated to my loving and caring wife and my Mum for their great support both emotionally and resourcefully towards the success of this project. To my brothers: Peter Omollo Miduri and Ambrose Miduri and my sisters: Benter, Tabitha, Carolyne, Pauline and Phylister may this work inspire you academically so that you may endeavour to achieve all your dreams and to always remember that you are unstoppable like a whirl wind whenever you are set to achieve your goals.

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Much appreciation is to the Almighty Father for his everlasting grace, wisdom and pleasant health into my life and making sure my education is a success. Dear God, thank you for gift of life and all my treasures.

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May God bless you all.

ABSTRACT

ERP system is a key facilitator for Savings and Credit Cooperatives (SACCOs) to provide products and services to members as well as provide the information required to ensure that they are operated in safe and secure manner. The study concentrated on the SACCOs in Nairobi county with the following objectives: to establish the practices of ERP Implementation in SACCOs in Nairobi County; to determine the extent to which the installation methods of ERP systems applied in SACCOs in Nairobi county; to determine the factors influencing the choice of ERP installation methods in SACCOs. The research was on population of 36 registered SACCOs by SASRA in Nairobi county from where the data was collected using questionnaires and google forms and analyzed through standard deviation, mean scores, percentages and factor analysis. The results of the findings were tabulated on tables and figures. The study realized that most ERP implementation practices are viable to every organization as recoded a mean value greater than 3. The most common installation method in SACCOs in Nairobi county is the big-bang/direct cut-over strategy. This is largely due to the fact that this is the least expensive mode of implementation and is also used by companies that have sizeable growth. According to the findings, most SACCOs researched about confirmed that the ERP installation factors are essential before choice of an installation method with the factors categorized into three clusters summarized as Organization Controls, Customization level of the ERP system and vendors' reputation in handling specific Installation method. In order for an organization to realize a success from the implementation of ERP system, the study recommended that they should employ all the implementation practices highlighted in the study as the finding revealed that the practices are all viable with a mean value above 3.

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CHAPTER ONE: INTRODUCTION

1.1 Background

ERP system is a key facilitator for Savings and Credit Cooperatives (SACCOs) to provide products and services to members as well as provide the information required to ensure that they are operated in safe and secure manner. As SACCOs continue their expansion by recruiting more members and introducing new products and services, their technological requirements will become more sophisticated and likely to increase governance challenges and regulatory oversight (Mainhart, 1999). However, through the effective and efficient use of ERP system, SACCOs will be able to address all their future business needs. ERP system is a key drive to SACCO operation as it is useful resource in financial services industry. The main purpose of ERP system in the operation of financial institutions is to foster the increasing dominance of larger financial institutions with the capability to maintain the increasing returns to scale inherent in the technology. The given ERP system used in consolidation may also foster presence of small financial firms.

ERP Systems in SACCOs provide computerized data processing for management decision making, Loan Portfolio Management, Accounting and Financial Performance Management. A Savings and Credit Cooperatives (SACCO) is a financial institution owned by its own members formed to pool financial resources together with the objectives of promoting their savings, offering credit at affordable rate and providing other useful services to its members. The difference between other financial institutions and SACCOs is that members who own account in the SACCOs are the owners with the capability or mandate to elect board of directors who oversee the daily operation of the SACCO on behalf of its members (Gamba & Komo, 2012).

1.1.1 ERP Systems Practices, Installation methods and Drivers of Installation Method Choice.

ERP system is defined as a multi-functional platform driven by software modules merged together to support the internal processes of a business entity. It gives business a straightaway view of an amalgamated core processes of the business such as manufacturing, processing of orders and management of inventory, sandwiched by ERP

applications and a database managed by a DBMS system (Marcus et al, 2000). Before ERP emergence, employees had challenging work of retrieving data from different separate computing systems them merging together for analysis and before presentation which proved to be time consuming and hectic. The data that is stored under one arena and made accessible by all the employees within the organization. This data is meant to empower employees in the organization by being informed all the times about organizational matters and also enable them perform their duties much better (Valacich & Schneider, 2012).

An ERP system is still a relatively new concept in software development industry though its concepts diffuse swiftly to the market as its Implementation approaches being developed every day. By following an ERP practices, the organization increases the chances of successful installation (Cornelius, 2007). ERP system Implementation practices entails a combination of changes in operation of business and configuration of software systems just to ensure it is customized to the outfit of the business operations (Gibson, et al., 1999; Davenport, 2000; Holland and Light, 1999). In addition to this, the Implementation of the ERP system has a consideration that it is not as technically complex as organizational revolution.

Apparently, many authors and practitioners have come up with more approaches and methodologies concerning ERP system Implementation. Harwood (2003) presents a methodology where the cycle of Implementation begins when there is a recognition of a need for a present-day ERP system and documented followed by the following: market awareness of what is available, vendor selection, Implementation, go-live and review. Anderson (2008) in a study of how to secure an ERP Implementation for Ericson Mobile platforms noted that the process should flow as follows; Need defined, Pre-study, Vendor selection, Implementation process, Training and Education of end-users, Go-live of the system and review of the process and improvement on areas with challenges.

The success of Implementation can be affected by availability of top management support, user involvement, set-clear goals and objectives, ERP Installation method, good

ERP Implementation approach, plan of the project, communication, training, proper analysis of data and clean migration data, a well-established ICT infrastructure and a risk management plan (Hasibuan and Dantes, 2012). The importance of Installation method is because it determines the overall cost of the project (different methods will have different costs), the timing required for the project is different for different methods and the resources required may vary. The most important reason for Installation method is cost (Khanna and Arneja, 2012; Neal, 2010).

It is at the mandate of every organization to decide on the Installation method that suits their project (Welti, 1999). Therefore, an organization must have a clear Installation method in order to increase their success chances and cost minimization (Khanna and Arneja, 2012; Neal, 2010). Five Installation methods that can be employed are the phased strategy; the direct strategy; parallel strategy, pilot strategy and hybrid strategy (Laudon and Laudon, 2006; Neal, 2010; Wallace, et al 2001). An organization will choose its Installation method after considering the following factors such as Organization Size, structure, complexity and controls. As stated by Welti (1999), the choice factors should be based on available People, expertise, financing and time.

1.1.2 Savings Credit Co-operative Society (SACCOs) in Nairobi.

European settlers were the first people to form a co-operative society in Kenya in the Rift Valley in 1908. In 1931, the cooperatives society's ordinance was then officially registered into law as cooperatives. Therefore, Kenya Farmers Association (KFA) originally formed as a company in 1923 became the first registered society under the new Act. Commissioning of a new ordinance became into being in 1945 and subsequently the following year, a commissioner of cooperatives was appointed. At the time Kenya was celebrating its independence, many primary societies/cooperatives of over 600 were already formed in Kenya. Kenya National Federation of Cooperatives (KNFC) was formed in 1964 as the new Act governing it became into law under cap 490 in 1966 (Maina and Kibanga, 2004).

According to The SACCO Supervision Annual Report (2019), there were only 172 SACCO Societies with valid operational deposit taking licenses as at December 2019,

and in respect of which this Report relates. In addition, the Authority licensed one more SACCO Society in December 2019 with the authority to commence deposit-taking business in January 2020, bringing the number of DT-SACCOs with valid licenses to operate with effect from January 2020 to 173 DT-SACCOs. SASRA Sacco supervision Report 2017 states that SACCOs have a total membership of 3,599,200 members. Hence SACCOs provide services to about four million Kenyans and frequently offer prime and unique services which cannot be offered in Banks. For instance, in rural areas many farmers depend on their SACCOs for credit and saving services together with the salary processing. SACCOs encourage members to save in order to create a big capital base which contribute positively to economic development of the county. Kenyan SACCOs face stiff competition initiated by commercial banks of Kenya which affects their performance as banks are considered to be fully transformed in their operations. Banks employs great ERP system with Installation method that favor themselves and this calls for SACCOs too to embrace a good ERP Installation method for their success in order to beat the banks in the market.

1.2 Statement of the Problem

ERP system is considered to have great value addition promises and its increase popularity in the business industry but still it is evident that gaining its benefits is not as obvious as vendors who sell and market their ERP systems would convince us (Boersma & Kingman, 2005). Most businesses especially SACCOs experience more challenges during Implementation process leading to time wasted and more cost incurred. Businesses are highly advised to understand the concept on factors affecting Implementation process of the ERP before Implementation process commence in order to reduce the failing chances and optimize the Installation method.

Research relating to the ERP has been done internationally by Anderson (2008); Hoon, et al (2006); Abdelghaffar et al (2010); Hawking (2007); Neal (2010), Hustad and Bechina (2011) and Hasibuan and Dantes (2012). These investigations look at Benefits and main factors that contributed heavily to the Implementation success of the ERP system; draw-backs to the Implementation of ERP system as well as factors that influence Implementation of ERP system. In Kenya, Nyandiere (2002) investigated challenges

facing ERP systems Implementation in Kenya. Nyaga (2006) investigated the major influences of victorious Implementation of ERP systems in Kenya while Kangethe (2007) concentrated on the evaluation criteria to the successful ERP system Implementation at HACO firms.

Thathi (2008) looked at Human resource management challenges in Implementation of ERP system. Gatimu (2009) focused on best ways of ERP system Implementation in the education system in KCA university and Rono (2012) looked at core banking systems replacement and performance. These studies have largely focused on success factors of Implementation. Anderson (2008) studies how to secure an ERP Implementation in Ericson Mobile Platform and covers some Installation methodsas well as the process of implementing ERP system. Harwood (2003) contends that there is still no common comprehensive approach to ERP Implementation. Zafeiropoulos, et al (2009) researched on the use of a goal directed project methodology and concluded that following a definite process was very important as far as control of cost, resources and time is concerned. Organizations are encouraged to use existing approaches to aid them during their specific model workout (Welti, 1999). The researches mentioned point to the fact that the process is not fixed and there is room for further research.

Welti, (1999) advises that every organization should choose the best strategy which suits them best during Implementation of their project. Installation method is very important because it determines what the cost of the project shall be (Khanna and Arneja, 2012). A study conducted by according to the study carried out by Palanisamy (2007) on the culture of an organization and management of knowledge during Implementation of the ERP system shows that 61.5% of organizations used phased approach, 28.6% used big-bang approach, 5.5% used pilot and 1.7% used parallel. In Kenya, investigation by Nyaga (2006) into critical factors influencing ERP Implementation success, revealed that the strategy most used was Parallel big bang strategy at 56 % of the sample and the least used was the Direct approach (Big Bang). Other investigations by Gatimu (2009) and Nyandieri (2002) indicated that firms investigated used the Parallel approach.

The research done both internationally and in Kenya show that the Installation methods are more or less standard. The perspective used in these studies was from a manufacturing, small and medium enterprises and education angle. Johansson and Sudzina (2008) in his study of factors influencing selection of specific ERP Implementation approaches concludes that no significant association between the suggested factors namely geographic location, Chief information officer influence, Organization size, IS/IT strategy and growth and the selection of Implementation approach but there is some indication that the factors influence selection. This point to the fact that some factors can be considered in the choice of Installation methods. No work has been done on the influencing factors to the choice of an ERP Installation methods in Kenya.

Regarding the researcher's knowledge done internationally and in Kenya, no substantive research has been geared towards the ERP Implementation process; Installation methods as well as factors for choosing an ERP installation method in SACCOs and more so, in Kenya. So, this research addresses the following questions: What implementation practices do SACCOs go through to execute the chosen Installation methods of the ERP system? At what extent are the Installation method of ERP systems applied in SACCOs in Nairobi county? What factors influences the choice of ERP Installation methods in SACCOS in Nairobi County?

1.3 Objectives of the Study

(a) To establish the practices of ERP Implementation in SACCOs in Nairobi County.

(b) To determine the extent to which the installation methods of ERP systems applied in SACCOs in Nairobi county.

(c) To determine the factors influencing the choice of ERP installation methods in SACCOS in Nairobi County.

1.4 value of the Study

Successful ERP system Implementation yields more importance as it ensures that the resources are well invested through lean system. ERP system Implementation is

considered to be costly and time consuming thus Implementation process should be properly executed.

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 essential success influences 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 of Kenya, Kenya Computer Society and other bodies involved in ensuring successful information systems Implementation may utilize the findings of this study as a reference point. They will be able to draw upon the findings of the study to come up with guidelines of enhancing usage of ERP systems.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

Chapter two narrates on the former studies and theories explaining the ERP concept. The structure of the literature review shall be a brief review on ERP history; the practices relating to ERP Implementation, the various Installation methods used for ERP Implementation as well as the influential factors to the choice of ERP Installation method. The literature review is purposed to establish an outline with which to build the research structure.

2.2 Evolution of Enterprise Resource Planning system

Most businesses began ERP systems implementation as a vital conceptual foundation for reengineering business processes, becoming a vital engine to accomplish cross-functional processes. ERP grew up as a way of offering companies an integrated suite of software to tie all BOSA functions and data sources together into one neat system (Earls, 2000). ERPs evolved out of the organizational planning systems. First came Materials Requirement planning (MRP) systems, developed by Baan co. Ltd in 1982. MRPs were mainly used in materials control in industry, raw material focus, work in progress (WIP) and inventory of finished goods. In 1985, MRP systems were further improved into Manufacturing Resource Planning (MRP II) systems, which brought together the production functions with the sales and marketing functions. The systems were first introduced in the Dutch market and launched into the international market in 1989. With MRP II, it was now possible to monitor the inbound as well as outbound logistics. ERP system was developed in the late l980s when MRPII failed to bring together the cross-functional areas of an organization. The first-generation ERP packages came into the market in 1990 with all the functions of the organization integrated together.

Currently, ERP has extended to encompass the functions of a front office like marketing, sales, ecommerce as well as Business intelligence (BI). Within the past two decades, Implementation of ERP system around the world has been on the rise. Companies using ERP systems has benefitted from the integrated business processes and having easy access to all the information relevant to their organization (Hoon Nah, et al, 2006). The

implementation process for an ERP is difficult and time sensitive due to the dynamics of every organization as well as the form of the ERP and the coding required. It makes it more challenging due to the fact that there may be modeling and adjustment of existing systems and structures (Markus et al., 2000). Therefore, it is essential to focus on the practices of Implementation, the strategies of Implementation and the factors to choosing those strategies.

2.3 Enterprise Resource Planning

Deshmukh, (2014) views ERP systems as ICT solutions that integrates and automates the functionalities of the administrative and customer in an organization. ERP originating from manufacturing and production sectors where it performed different duties like products manufacturing, produce marketing through the automation of the marketing system which brought in today's e-business platform, internet banking and online supply chain management (Swartz & Orgill, 2001). ERPs have broad functionalities through their modules like; administration modules: human resource modules, finance module, payroll module, and payment and customer service relation module.

The customer relation module includes opening of account to customers, checking of account balances, money deposit via internet and withdrawals of cash, retrieval of account statements, transfer of money from one account to another (Deshmukh, 2014). ERP system has distinct features to earlier approaches in developing or purchasing software used in business; First, ERP systems are composed of modules integrated together under one system with a common set of definitions and one database (any transaction done is immediately reflected on the related modules) and second, they are customized to reflect a given way of business operation (Wainright, et al, 2009). The procedures used in ERP Implementation affect project success explicitly and implicitly of it.

2.4 Enterprise Resource Planning Implementation Practices

Many researches regarding the techniques used in Implementation of ERP has been done severally to determine the most efficient and effective model with minimal risks. For instance, a model presented by O'Leary (2005), includes different practices like: a choice to have an ERP, the type of ERP system to procure, designing, implementing, Post go

live and training of users. Ross, Vitale, Willcocks and Shanks et al., (2003) present additional approach for ERP Implementation which includes design process, installation method, stability, continuous customization and transformation (Ross, Vitale, Willcocks & Shanks et al. 2003).

Wallace and Kremzer (2001) recommend the process flow as follows Audit/Assessment 1, First-cut education, cost-benefit analysis, decision to go live or not, Vision statement, performance objectives, project arrangement, Initial education and training, planning, software selection and implementation, Data integrity, Audit/Assessment II and Ongoing education. Harwood (2003) presents a model which includes the stages of creating awareness to the market, requirements definition, selecting vendor, project Implementation and the improvement to post-Go Live process. The common themes in the models provided are Need and Requirements definitions, software/vendor selection, training, Data set-up and integrity, Implementation, post Implementation review and improvements.

Figure 1 *ERP Execution Life Cycle*
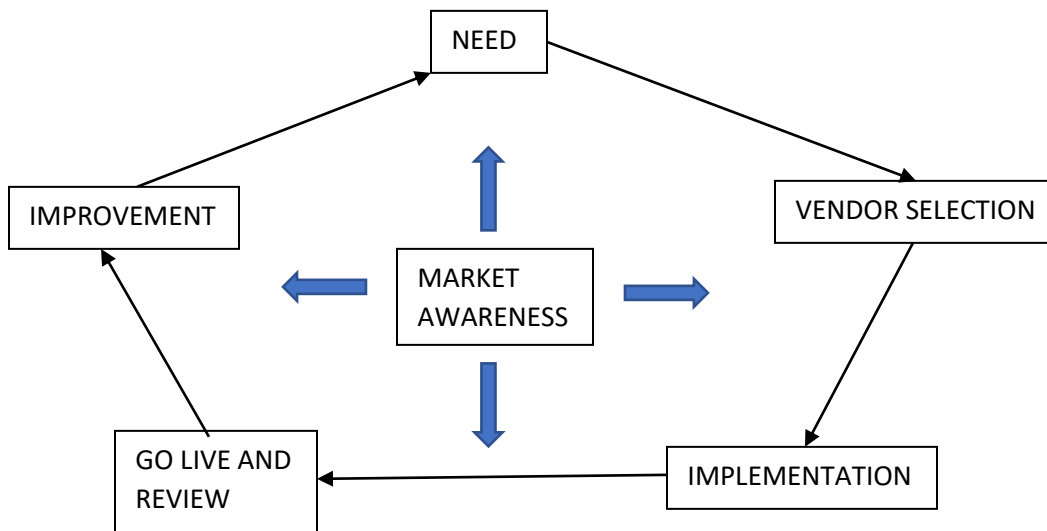
Harwood (2003).

The ERP system Implementation life cycle begin with an availability of a need. The need has two categories: identification an initial need and definition of user requirements

(Harwood, 2003). The initial need analysis the current situation of the company, the available opportunities, emerging threats, strategies involved and to ascertain the possibility of the potential change giving a competitive advantage to the firm (Wallace and Kremzer, 2001). The cost involved includes one-off costs and operating costs. Direct costs are types of one-off costs which includes hardware used for ERP infrastructure, consultancy from the given vendor and training of users. On-going costs and Indirect costs are costs considered to be internal and are employees' costs incurred during the project session that are associated to off-site travel (Harwood, 2003). The importance of Indirect and direct costs analysis can only be realized through total cost ownership methodology. The methodology is purposely done in order to systematically analyze all the costs and the issues of performance (Heilala, et al, 2007).

Company executives and managers should have knowledge on how an ERP system works, its content, its operations and its Implementation requirements and its proper use (first cut education). Afterwards, the organization should form an executive steering committee; project team at operational level, composed of managers at operational level throughout the company; and to select a project leader who would oversee or supervise the whole project and the project workers fully dedicated to the Implementation of the project till its closure. An education of ideally 100% of all staff needs to be done to sensitize them on the changes and how these will affect them (Wallace and Kremzer, 2001). Harwood (2003) argues that defining user requirement is takes a lot of time since all details must be collected from reliable sources, prepared and well presented in a document. User requirement is establishment is usually done in different ways; business process identification and key issues definition address correctly in order to come up with a list of full details of the need.

The requirement definition should answer the question of what the company should look like and how it should operate after the Implementation (Wallace T. et al, 2001). After requirements definition, an identification on how the requirement will be met must be established and the following statements should be considered: a choice of a well-established software developers (vendors) with more experience, a choice of modules to

apply and a choice of the high quality (choosing the best sections from various software developers in the market). The ultimate decision is the direction to be taken (Harwood, 2003). According to the study carried out by Zafeiropoulos, et al (2009) on 2 firms involved in the implementation of an ERP system with a Goal directed towards project management principles highlights that definition of user requirement provides the necessary requirements for a reliable, safe and stable transition of an organization to the new organizational and managerial system.

The preferred vendor of choice to avail the application software they offer and the operational skills required. The vendor to also provide the necessary expertise to be involved in ERP system Implementation (Harwood, 2003). Choosing a vendor involves the following four stages: Find out the available vendors in the market offering the given ERP system required and generate vendor list, filter the list to remain with a small list of suppliers who would meet the requirements, filter the list further through evaluation in order to have only the most suitable size then do a final selection. Hustad and Bechina (2011) in his research on life cycle of a project in four small and medium businesses referred to this as part of the pre-Implementation phase. All four companies wanted vendors who were accepted in the market, would solve critical business case scenarios, and with good reputation. Contract negotiation process kicks-off immediately a vendor is selected. Harwood (2003) highlights that various contracts vary from vendor to another. Some of the issues that need to be discussed include; definitions, software license, warranty, price and payment, third party software, software errors, delivery, operating system, hardware requirements, software support, training, new releases, copyright/ownership, liability and cancellation of licenses.

William and Kremzer (2001) advices that for the ERP system's Implementation success to be realized, all the ERP system users in the organization to be subjected to a serious training to ensure everyone is well versed to his/her respective areas of work. Harwood (2003) highlights that the first step of Implementation process is project team training to impart skills and knowledge of ERP operation, then definition of new processes, testing the operation of the system and documentation of the process, setting up data and lastly, imparting usability knowledge of the ERP system to the end user should follow

afterwards. Phase one of training strategy entails the activity related to project team training together with the system administrators. The end results should provide enough technical know-how for the operation of ERP system, Implementation, practices involved and the functionality of the software. Navigating through the ERP system to be made easy and all the functionality details to be understood by all users (Harwood, 2003).

According to Hustad and Bechina (2011) in his project life cycle study in four small and medium businesses observed an emphasis on user training which made a great improvement in project Implementation success. The training done in phase two is majorly for the end users and their managers purposely to understand the system operation. Harwood (2003) and William and Kremzer, (2001) in his study advices that the training to be conducted in the workshops where knowledge is enforced from where would be able to know how to navigate through the system. Harwood (2003) in his study advices for a process mapping that would result to a method that is faster and easy in capturing the process complexity allowing the view of the whole picture. A reference point is drawn from there for issues associated to the process to lay down foundation for process documentation and training materials provision. Pilot phase is mainly for test environment provision for the final version before the system go live since it's a simulation of a real-world event. Pilot phase is sub divided into three phases; preparation stage, simulation stage and lastly, follow-up stage.

The preparation stage has all scripts, data and programs required for the event. Simulation of pilot follows and involves the last review and software test before commissioned. The follow-up stage finally launched to follow up on pending issues and adjustment fixed appropriately. According to Harwood, (2003), the project will only be commissioned once everyone from project team give a project acceptance hand. Documentation is the last phase of Implementation process is documentation which involves the defined procedures applied, the structures and the guides. The documentation process is only done by project participants involved in process definition and therefore, incorporation of the process name, process aim and process description, individual responsibilities, the flow of the process, set instructions and details of the

related documentation is mandatory (Harwood, 2003). The data to be used in the system should be accurate, complete and structured properly to ensure the system output or end results of the system are as per the requirement and free from errors in order to aid in good decision making. Data migration is done in two ways; the manually and electronically.

Manual data migration into the system is considered to be more expensive and time consuming as compared to electronic data migration means especially when large amount of data transfer is involved (Harwood, 2003). A study carried out by Hustad, and Bechina (2011) on project life cycles in four small and medium businesses emphasis that before migrating your data into the new system, the data should be clean to avoid errors and also emphasized on the discipline in the database and its related structures. After new system Implementation and subjected to live, a training of the system users must follow immediately and done properly well to ensure employees accepts the system technically. The success determinant of go live day is usually determined by users' ability to navigate through the system in a challenge free manner and if a challenged is witnessed, a better mechanism should be established (Harwood, 2003). A user support function (help desk) should be established to promptly take necessary action anytime a need arises and provide a platform for logging in issues that need a later solution. When the software has been set up and running after a given period of time, a review of project Implementation should be carried out reflecting on Implementation and process.

Harwood, (2003); William and Kremzer, (2001) states that the Implementation review does not symbolize the conclusion of the project life cycles but drives the team to the succeeding major phase. According to (Harwood, 2003), Implementation should never after going live because there is high possibility of technical issues arising which needs attention of the software vendors for improvement. Since ERP system is considered as an instrument for facilitation of the organizational activities, an improvement of newly developed ERP system should be done. An evaluation focusing on the situations, problems, opportunities and strategies following the Implementation together with a continued user training of new employees should be continuously done (William and

Kremzer, 2001). The study done by Hasibuan and Dantes (2012) confirms that key determinants of ERP system Implementation methodology has 52% influence towards achieving the ERP Implementation success.

2.5 Enterprise Resource Planning installation methods

Every company has its own way of installing their ERP software depending on the factor they consider when choosing a given installation method. The popular installation methods include: phased Strategy, direct Strategy, parallel Strategy, pilot Strategy and hybrid transition strategy (Laudon and Laudon, 2006). Phased/ Step-by-Step Transition Strategy involves the Implementation of one practical element at a time, chronologically. The implementation of the autonomous ERP modules is done in each given unit then the modules integrated while approaching the end of the project. This is the most common method used for ERP Implementation since it reduces the implementation risks, customization level and system operation by reducing the Implementation scope.

Whenever one module has an unbeaten Implementation, an improvement in the overall success of an ERP project is realized. Phased strategy has various interface programs which aids in bridging the gaps between the newly acquired software and the inherent system up until the present-day ERP system is fully fledged. The strategy is mainly applicable where the ERP project is not highly centralized. The strategy has a low failure risk and only limited to the Implementation of the modules only. Studies done by Nyandiere (2002), Gatimu (2009) and Kangethe (2007) indicated that all the firms used the phased Implementation methodology.

Big Bang/ Direct cutover Strategy entails the implementation of the entire modules across the organization at once. The integration cost is reduced in the long run a thorough and careful execution is carried out with less wastage thus proving to be less expensive. The strategy is applicable in an environment which does not support legacy systems or has compatibility issues (Shelly et al, 2010). Neal (2010) did a survey on Installation methodology and from this survey he noted that the number of big bang users also had significant users in comparison with the phased rollout users. Johanson and Sudzina (2008) in an investigation into factors influencing specific approaches of ERP system Implementation in three countries with over 200 companies participating, noted that big

bang Implementation was preferred by firms with high levels of growth of up to 10%. Nyagah (2006) noted that the least used approach during ERP Implementation is the big bang approach.

Parallel Transition Strategy employs the operation of both new system and the legacy system working concurrently for a longer given period of time. Homogenous modules including the applications for marketing, HR, finance and accounting function normally and concurrently for both the new system and the legacy systems. This strategy is advantageous as it has a better improvement options in case a failure is sensed or witnessed. This gives the involved company an assurance of their business continuity in case a breakdown is experienced. The strategy additionally offers a more sensible comparisons platform which assures that the newly employed ERP system performs the intended flow of business process. It is majorly applicable to critical missions that can hardly accommodate an ERP system breakdown. It is also considered to be expensive as more resource are required during Implementation (laudon and laudon, 2006). Nyagah (2006) investigated on the essential factors of success that contributes to the Implementation of ERP system and identified that the most popular strategy used approach is parallel big-bang approach with 56%.

The pilot study approach is carried out in one isolated part of the organization, e.g. a branch. If it works, it may be implemented in the rest of the organization simultaneously or in stages (laudon and laudon, 2006). As per Johanson and Sudzina (2008) research statistics on factors influencing specific approaches of ERP system Implementation in three countries with over 200 companies, the least used approach used is the Pilot Installation method.

Hybrid Transition Strategy involves the combination of more than one strategy mentioned above. the strategy evolves into the required agreement as the teams involve in ERP Implementation study and consider information involved. Some hybrid strategies complexity varies depending on the state for instance, the small single-sites ERP Implementation have simpler hybrid approach as compared to those of large

conglomerate corporations that possess dissimilar environmental sites. Most Implementations prefer hybrid strategy because of its flexibility in terms of adaptation to the specific situational needs. Therefore, through hybrid strategy, companies are able to exclusively customized their Implementation to their needs (Neal, 2010).

2.6 Factors for Choosing an installation method

In order for any organization to select their appropriate ERP installation methods, they should carry out a proper planning and execution. The choice of a new ERP system requires a good installation method just like looking for the best ERP system since the two are dependable. Every project managers and project teams should have the above thought proactively during system evaluation process and should pose the disclaimer with the prospective vendors by enquiring on the strategies used by their customers and how they appreciated them. The most used strategies are big bang and phased strategies. This is affirmed by the study done by Panorama Consulting which confirmed that 53% of companies used a phased strategy, 35% preferred big bang while 11%) preferred hybrid approach. During strategy decision making process, one should not focus much on this statistic but instead focus on what fits them best. This should be done through the following variables:

The organizational size and its complexity: - more complex organizations or large multinational organization would find a big bang riskier to employ and yet if the different modules or sites are highly interdependent, it may be the only solution.

The risk level of the business: - ERP system Implementation always pose a given level of uncertainty. Some risks can never be avoided since they pose a big risk that if not dealt with may bring a big harm thus managed. The capability to tolerate some risks depends on many factors including the business nature. An airport or hospital is likely to have a different thought to a clothing manufacturing company and engage in different risk. Since big bang is associated with more risks than any other approach in Implementation process, they may be risk to apply.

The ERP system compatibility with the legacy systems: - modular and scalable ERP systems are said to be easier in phase Implementation than rigid business application. For instance, a three tier ERP architecture gives an upgrade room or replacement of any

three-tier architecture independently. Similarly, cloud-based ERP system would choose the function of your choice and add them progressively as the company grows.

Customization level of ERP system: - an ERP system which requires low customization level to the company's outfit is always best handled efficiently and effectively by a big bang/ direct Installation method as the software is fully developed as per requirement of the organization. Consequently, an ERP system which requires high customization is best handled through phased/parallel Installation method since it gives more room for improvement or further customization.

The anticipated benefits: - phased strategy is associated with a quick realization of the benefits of the ERP system in every stage. Therefore, one is able to realize the value of its ERP system at any expected stage. This type of deployment is also less discouraging for users since it boasts morale of users. System users are likely to be motivated and appreciate the change of the system as it has a greater positive impact.

Availability of resources: parallel Installation method always requires a lot of cost in terms of IT infrastructure requirement and maintenance. Therefore, any company that is not in proper financial position to maintaining the operation of two ERP system at the same time cannot implement parallel strategy. Direct Installation method is less costly as it does not involve an additional ICT infrastructure and maintenance of two software for running the newly procured software but will run on the compatible legacy systems.

2.7 Theoretical Foundations of ERP Implementation

The concept of technology adoption and Implementation such as ERP system has been explained in so many ways by many theories and models. The focused theories in this concept includes Technology acceptance theory (TAM), Technology Organization environment (TOE) and Diffusion of innovation (DOI) Theory. Davis (1985) recommended TAM theory in his doctoral thesis and highlighted that the system use is a response determined by motivation of a user. This is further affected directly by an outward stimulus which is composed of attributes and potentialities of the system. He further analyzed his conceptual model and advised that motivation of a user is by two influence by; perceived usefulness and perceived ease of use. The perceived ease of use is believed to be influential to the perceived usefulness of a technology.

Tornatzky & Fleischer (1990) developed TOE theory composed of three major factors influencing adoption to the organization which includes technology, organization and environment. He highlighted that the technological context is associated with the technological availability in an organization. Organization describes the features of an organization; size, the level of centralization, formalization, structure complexity of management, human resource quality and the size of flexible resources internally present in the organization. The external environment is the platform where the organization operates which includes the business itself, potential competitors, laws and government. These are external factors which affects the operation of the organization. They avail challenges and opportunities related to innovation of technology (DePietro et al., 1990). TOE theory is a framework where diffusion of technology takes place therefore provides a theoretical platform used in carrying out studies on how information system innovation are adopted (Zhu, Kraemer, & Xu, 2003).

Diffusion of Innovation Theory (DOI) is majorly used to predict the behavior inhabited during innovation process in the organization and among individuals (Masrom & Hussein, 2008). Rogers (1995) states that innovation has five features influencing the adoption rate of innovation: relative advantage of the innovation, compatibility of the technology, how complex technology is, how trailable innovation is and lastly how observable an innovation is. Measured benefits grades the extent to which an improved innovation is over a competing option or the original generation of a product. The potential customers should understand how the chosen innovation would upgrade their apparent situation by offering an economic advantage, improving their social class, convenient work or life satisfaction. An innovation with a greater perceived relative advantage is the mostly adopted innovation.

Compatibility shows the level at which an individual is compatible with the given innovation as their life simulation. Potential adopters should understand whether the innovation will suit their life and lifestyle. An innovation which requires a huge lifestyle or additional product for it to function properly has a higher chance of failure. Complexity means the ease with which an individual is able to understand the innovation

concept without struggle. A more complex innovation brings more difficulty in adoption process to the lives of the potential adopters. Potential adopted usually have no budget for innovation learning therefore, a less complex innovation is highly adopted. Trialability refers to how potential adopters are easily able to explore the given innovation. A trialable innovation represents an innovation with less uncertainty to individual trying to embrace the given innovation. Observability describes the ways in which the benefits of embracing innovation are visibly seen by the potential adopters. An innovation with a clear benefit is likely to be embraced by potentials adopters

Rogers (1995) states that the technological adoption decision is usually made through a process which decision maker involves from their prior technological knowledge with an aim to establish how users' behavior change with the new technology. The decision maker then finds it easy on the decision-making process by deciding to either embrace, install or abandon the concept, and lastly decide to accept it.

2.8 Conceptual Framework

Figure 2.8.1 Conceptual Framework

Independent Variable   Dependable Variables

Factors influencing the choice of installation methods

- ➢ The organizational size and its complexity
- ➢ Customization level of the ERP system
- ➢ The ERP system compatibility with the legacy systems
- ➢ The risk level of the business
- ➢ Availability of resources
- ➢ Vendors reputation in handling specific Implementation strategy
- ➢ User/SME Participation and Engagement
- ➢ Targeted Data Migration Strategy
- ➢ Focused Project and Scope Management
- ➢ Approved Solution Design
- ➢ Knowledge Transfer
- ➢ Documented User Procedures

ERP installation methods

- ➢ Phased methods
- ➢ Direct methods
- ➢ Parallel methods
- ➢ Pilot methods
- ➢ Hybrid methods

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

Chapter three offered deliberation on the research methodology that was used in this study. It deliberated more on the research design peculiarly regarding the design choice. It also conferred more about chosen population of the study, methods used for collecting data along with the way data was analyzed.

3.2 Research Design

The study employed a descriptive research design approach as it was considered appropriate to determine perception of the target group. It evaluates the characteristics of a population at a given time and are designed to measure what occurred rather than why (Gray, 2004). The descriptive survey research approach is preferably thought since it employs specific questions for provides stable answers.

3.3 Population

The target population will comprise 36 licensed SACCOs by SASRA body and offers FOSA services to members in Nairobi county. The targeted population is considered to be small in size, thus census will be applicable since the collection of data will be done in all the licensed banks in the same timely manner.

3.4 Data Collection

The study considered quantitative data collection technique as the most preferred technique. The study will use primary data technique to get the required information and employ development of the questionnaire as a data collection tool in order to achieve the specific objective of the study. The respondents will be the heads of information technology, Information technology staff, Project managers and Information system auditors within the SACCOs. The respondents to be selected will be those who have intimate knowledge and skill on system Implementations within those SACCOs. The questionnaire will be divided into the following sections: Section A, covering the demographics of the SACCO and the respondent; Section B, to cover the practices for Implementation of ERP system; Section C to cover Installation methods of ERP systems while section D to cover the choice of ERP Installation

methods factors.

3.5 Data Analysis

Collection of raw data by the researcher was done and the completeness check carried out then later subjected to coding through SPSS using descriptive statistics. The results of the findings were then displayed in tables, figures and frequencies. Demographic information: list of SACCOs, SACCO's years of operation, length of service of respondents, population of the SACCO and number of employees employed by the SACCO were analyzed using mean scores and percentages. The data from section B of questionnaires were analyzed using mean scores and standard deviation; section C on the other hand were analyzed using percentages and descriptive statistics. Section D lastly was analyzed using mean, standard deviation a factor analysis

CHAPTER FOUR: DATA ANALYSIS AND INTERPRETATION

4.1 Introduction

Chapter four highlights the findings of how data was analyzed by showing how processed data is summarized and presented in tables and figures in form of mean score, percentage and frequencies.

4.2 Response rate

72 questionnaires were distributed to the heads of ICT, ICT staffs, project managers and Information system auditors of the SACCOs that were registered and licensed to offer FOSA services and only 59 questionnaires received back resulting to a response rate of 82% making it a good for analyzing and reporting the findings.

4.2 SACCO demographic information

In research to determine implementation of ERP system in SACCOs, study on the background of SACCOs was considered to be appropriate in order to form basis under which the interpretations were made.

4.2.1 List of SACCOs involved in the study

Table 4.2 attached at appendix II shows the list of SACCOs that formed our target population of study from Nairobi county. Total population researched on was 36 total SACCOs with at least two members as the respondent.

4.2.2 Years of operation for SACCOs

The research requested for information from respondents regarding years of operation for the SACCOs and the results were analyzed and revealed that most SACCOs have operated for a period longer than 40 years. This is illustrated more in the figure 4.2.1 below.

Figure 4.2.1 Years of operation for SACCOs
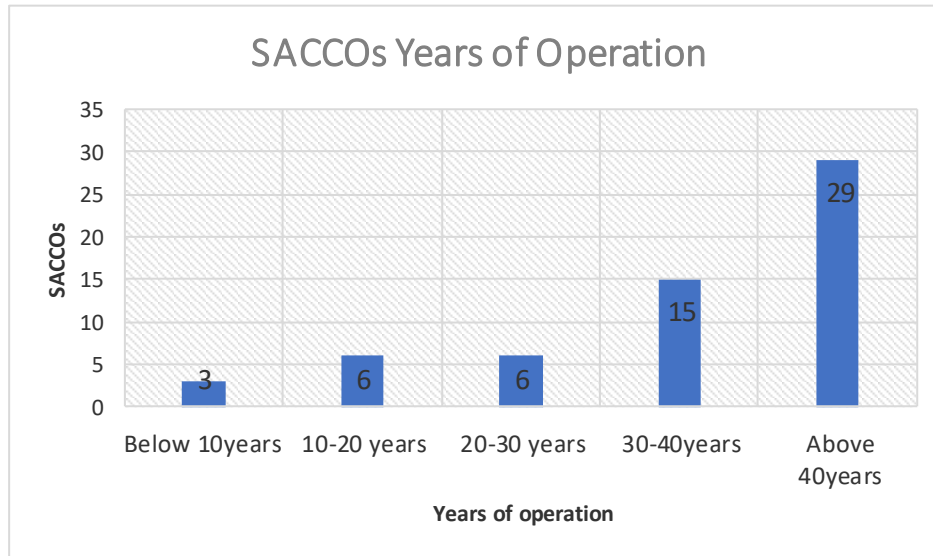
Source: (Author, 2020)

4.2.3 Number of Years respondents have worked for their SACCO

The respondents were either the heads of IT, IT staffs, Project managers or Information system auditors from the SACCOs in Nairobi region. The result highlighted that majority who had served in the SACCO for a period of 5-10 years were 41 %, 10-15 years were 19%, below 5 years were 17%, 15-20 years were 15% while the least were above 20 years with 5% 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. The study had above 50% of the respondents who had served in the SACCO for a period of longer than ten years and therefore were able to give information regarding the ERP implementation.

Figure 4.2.2 Respondents' length of service in SACCO
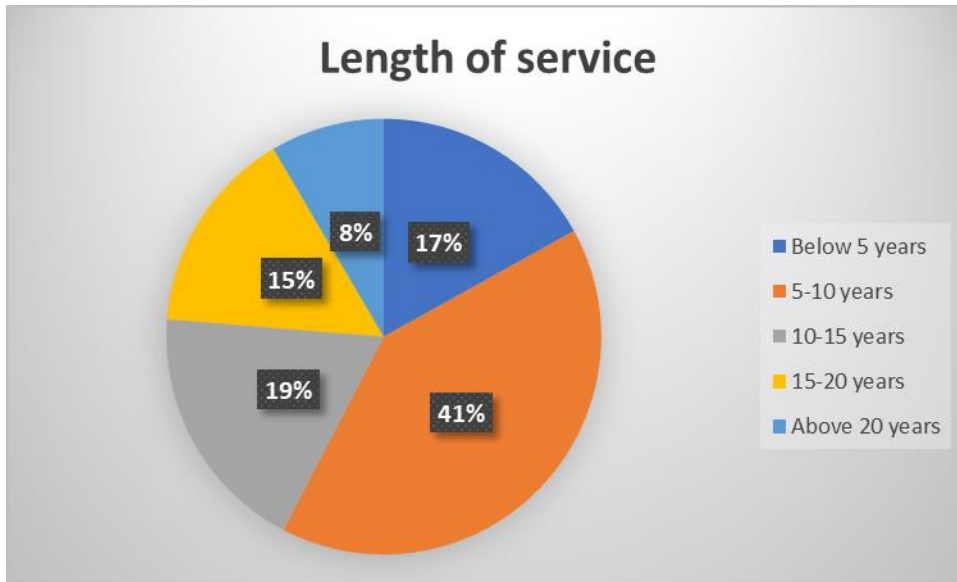
Source: (Author, 2020)

4.2.4 Population of the SACCO

The study researched on the total population of the members of the SACCO and the result revealed that most SACCOs has a total population between 15,000 -20,000 members as tabulate below in fig 4.2.2.

Figure 4.2.3 Population of SACCOs members
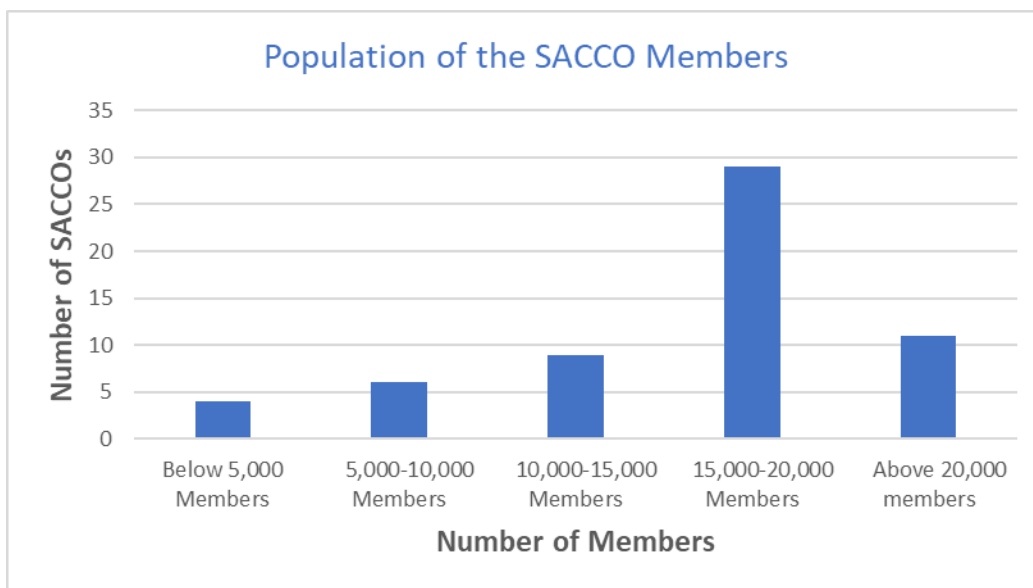
4.2.5 SACCOs Employees' population

The population of the employees employed by the SACCOs were sought out and the results revealed that most SACCOs had a population of 15-20 employees with a rate of 54%, followed by SACCOs with employees more 20 (22%) and SACCOs with 10-15 employees had 17% while the SACCOs with least number of employees of 5-10 had only 7%. This shows that most SACCOs invest in their Human resource well for efficiency and effectiveness in daily operation of the SACCOs.

Figure 4.2.4 population of employees in SACCO
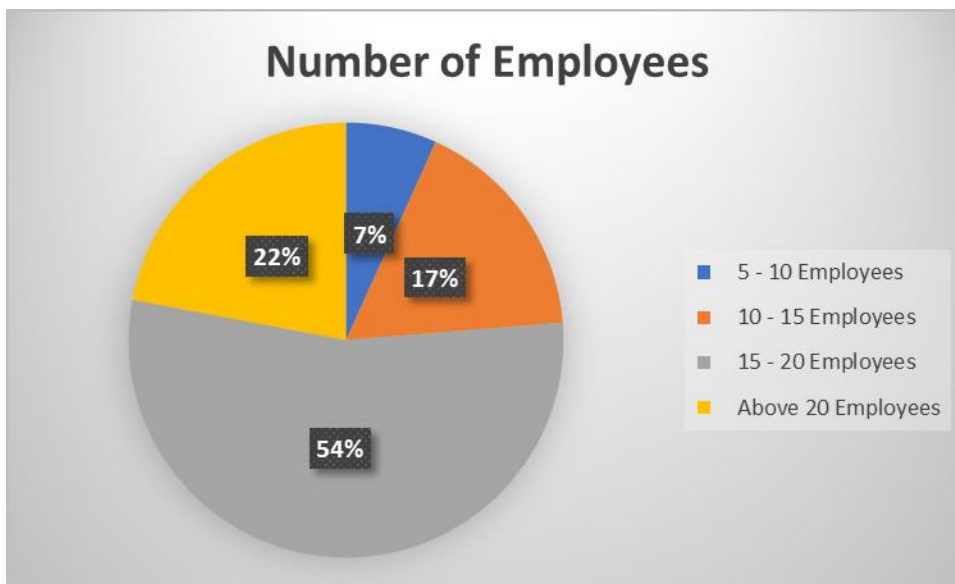
4.2.6 SACCOs with ERP

The study surveyed on whether SACCOs use ERP system for their operation as shown in fig 4.2.5 below and it was unanimously agreed by all the respondents that they use an ERP system though of different types.

Figure 4.2.5 SACCOs with ERP system
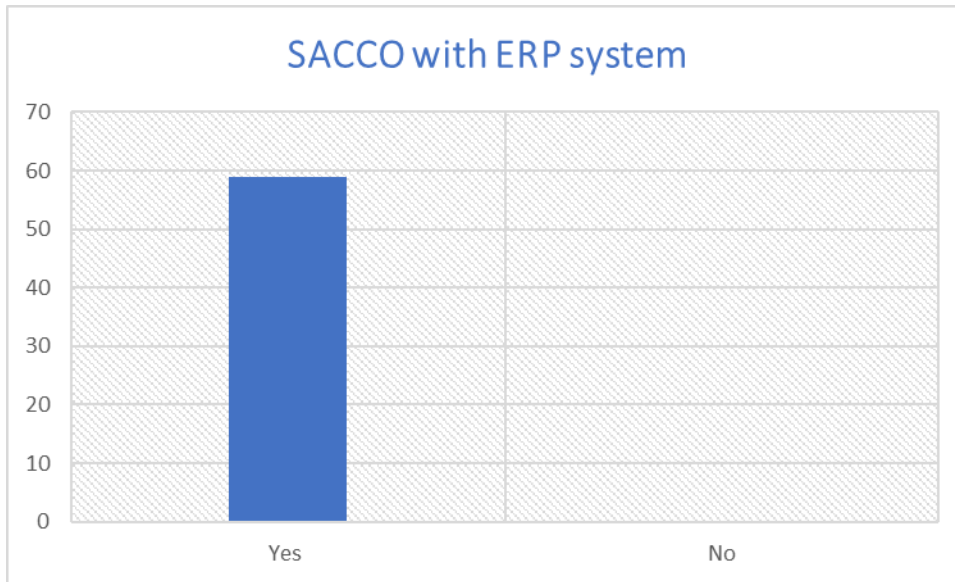
Source: (Author, 2020)

4.3 Practices of ERP system Implementation

The study questioned the respondents on the extent to which the following practices were undertaken in the implementation session of ERP. The results from the questionnaires then underwent through analysis using means and standard deviations to determine whether the practices are viable during implementation session.

Table 4.3.1 Practices of ERP system Implementation

Descriptive Statistics			
Practices	N	Mean	Std. Deviation
User acceptance tests	59	4.9661	5.09552
End users and managers training	59	4.3729	0.76335
Determination of hardware requirements.	59	4.3559	0.73725
SWOT analysis	59	4.322	0.70566
Data Migration	59	4.322	0.75294
Cost analysis of different ERP systems	59	4.2881	0.72041

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Project team and system administrator training	59	4.2373	0.98854
Identification of dedicated Project Leader	59	4.2203	0.64508
Selection of Project Leader	59	4.2034	0.66384
Issuance of a request for proposal	59	4.1864	0.77625
Benchmarking with other SACCOs	59	4.1695	0.69858
Cost and benefits analysis	59	4.1525	0.90618
Staff training	59	4.1356	0.68122
Formation of Operational level project team- consisting of operating department managers.	59	4.0508	0.59953
Data clean up	59	3.8136	1.19589
Analysis functionalities of different systems	59	3.6949	1.20708
Process documentation-Procedures to be used with the new system	59	3.6949	1.14853
System documentation-Templates	59	3.678	1.18089
Initial need and staff awareness training	59	3.5763	1.20635
Technical skills and experience analysis of potential vendors staff	59	3.5593	1.30346
Interface tests	59	3.5593	1.24943
Post go-live improvements and upgrades	59	3.5593	1.23555
Determination of training requirements	59	3.5424	1.07193
Software support framework analysis of different vendors to determine who provides best support.	59	3.5254	1.11967
Post Implementation review	59	3.5254	1.2506
Analysis of business key issues forming list of requirements.	59	3.4915	1.44285
Stress tests	59	3.322	1.12097
Business process analysis	59	3.3051	1.22128
Formation of Executive steering committee	59	3.1186	1.28767
Executive training	59	3.0847	1.31684
Valid N (listwise)	59		

Source: (Author, 2020)

From Table 4.3.1 and based on the mean scores there are 15 practices that fall within the large extent to the very large extent range and these, from the highest ranking are: User acceptance tests (4.9661), End users and managers training (4.3729), Determination of hardware requirements (4.3559), SWOT analysis (4.322), Data Migration (4.322), Cost analysis of different ERP systems (4.2881), Project team and system administrator training (4.2373), Identification of dedicated Project Leader (4.2203). Selection of Project Leader (4.2034), Issuance of a request for proposal (4.1864), Benchmarking with other SACCOs (4.1695), Cost and benefits analysis (4.1525), Staff training (4.1356), and Formation of Operational level project team- consisting of operating department managers (4.0508).

According to the study results, generally all the practices seem to be carried out by all respondents. This is confirmed by the mean scores which range between 3.8136 Data clean up to 3.0847 on the Executive training indicating that all practices are carried out to a moderate extent.

4.4 ERP Installation method employed.

Study sought to identify the most preferred installation method of an ERP system employed by SACCOs and the results were tabulated in the figure 4.4.1 below

Figure 4.4.1 ERP system installation methods by SACCOs
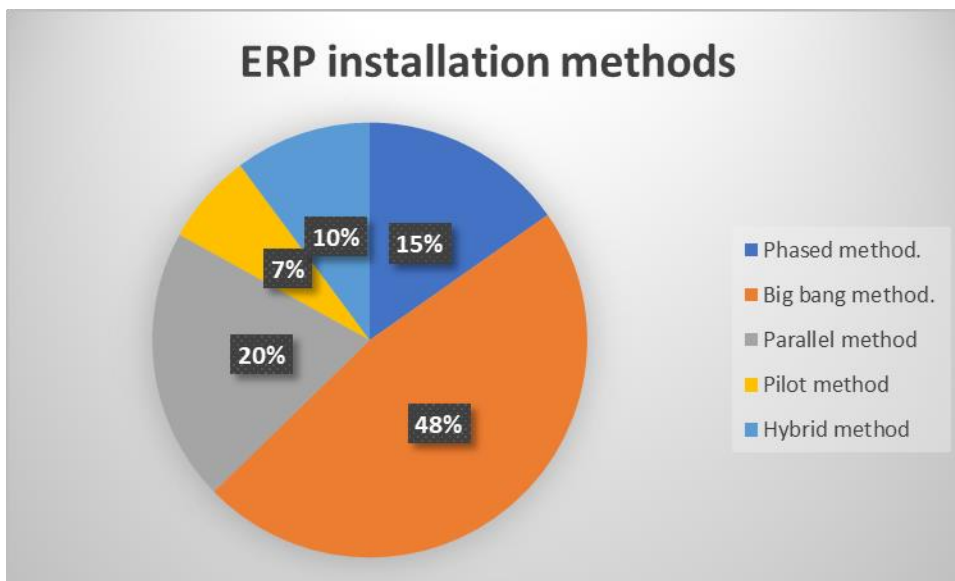
The big bang installation method emerged to be the most used among the respondents at 48%, followed by the parallel installation method at 20%; then the phased approach at 15% then the hybrid which is a new method at 10% and lastly the pilot method at 7%. From literature review, this study confirms that pilot installation method is the least used installation method to SACCOs since it is considered to be expensive.

4.5 Factors for Choice of an ERP Installation method.

Table 4.5.1 Factors for Choice of an ERP Installation method.

Factors considered	Mean value	Standard Dev.	Analysis N
Availability of resources	4.6271	.48772	59
Organization Controls	4.4746	.50364	59
Organization size	4.4576	.62483	59
Competency level of Organizations staff	4.2881	.72041	59
Information System Strategy of the organization.	4.2373	.98854	59
Complexity of the organization's operations	4.2034	.66384	59
Targeted Data Migration Strategy	4.2034	.82587	59
Customization level of the ERP system	4.1864	.77625	59
Focused Project and Scope	3.7288	.97963	59
Cost-benefit analysis	3.6780	1.18089	59
User/SME Participation and Engagement	3.4237	1.16269	59
Documented User Procedures	3.4068	1.39109	59
SACCO's growth rate	3.3220	1.20974	59
Strong Executive Sponsorship Management	3.3051	1.22128	59
Process Owner Led User Training and Sign-off	3.3051	.62296	59
Approved Solution Design	3.2881	1.30054	59
Vendors reputation in handling specific Installation method	3.2542	.95761	59
Organization structure	3.1864	1.37056	59
Competency level of vendor staff	3.0847	.85678	59

Thorough System Testing	2.4407	.77172	59
Geographic location	2.4237	1.32877	59
Feedback from other organizations experiences	2.1864	.77625	59
Number of vendor staff available for support.	2.1525	.78375	59
Level of Steering committee training	2.0339	.80870	59

Source: (Author, 2020)

The research determined the factors influencing choice of installation method and the results of the research were tabulated showing mean score and standard deviations on the table 4.5.1 as shown above. The study considered 24 practices from where 8 practices were rated with a highest on a mean score of 4 and above, 11 practices were rated with a mean score between 3-4 values while the practices with least extent were only 5 in number recording a mean score of below 3. The factors with a mean score of above 3 were 19 practices in number (79%) while below mean score of 3 were 21% showing that the choice of ERP installation method is highly influenced by the above mentioned factors.

4.5.2. Factor Analysis

Factor analysis is defined as a procedural statistic for identification of few factor numbers used in representation of the association exhibited by sets of interrelated variables. The concept of this analysis is that deeper factors influencing the concept in the data that is uncovered and used with variable of lower-level cascaded from them

4.5.2.1. Communalities

Table 4.5.2.1 shows the communalities extracted using principal component analysis extraction. Communality is termed as the variance fraction accounted for by the common factors of a variable.

Table 4.5.2.1 Communalities

Communalities		
	Initial	**Extraction**
Approved Solution Design	1.000	.952
User/SME Participation and Engagement	1.000	.949
Targeted Data Migration Strategy	1.000	.938
Complexity of the organization's operations	1.000	.932
Number of vendor staff available for support.	1.000	.927
Information System Strategy of the organization.	1.000	.905
Competency level of Organizations staff	1.000	.905
Organization Controls	1.000	.896
Thorough System Testing	1.000	.891
Feedback from other organizations experiences	1.000	.887
Vendors reputation in handling specific Installation method	1.000	.877
Documented User Procedures	1.000	.871
Cost-benefit analysis	1.000	.867
Geographic location	1.000	.841
Focused Project and Scope	1.000	.819
Strong Executive Sponsorship Management	1.000	.807
Availability of resources	1.000	.804
SACCO's growth rate	1.000	.781
Process Owner Led User Training and Sign-off	1.000	.778
Level of Steering committee training	1.000	.761
Competency level of vendor staff	1.000	.754
Organization structure	1.000	.729
Customization level of the ERP system	1.000	.627
Organization size	1.000	.619

Source: (Author, 2020)

From finding in the Table 4.5.2.1 above, it is evident that there is high communality with the highest being Approved Solution Design at 0.952 and the Organization size at .619. This indicates that a large portion of the common factors explain the variance.

4.5.2.2. Total Variance Explained

Table 4.5.2.2: Total variance explained

Total Variance Explained									
	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	13.406	55.860	55.860	13.406	55.860	55.860	12.759	53.163	53.163
2	5.291	22.048	77.908	5.291	22.048	77.908	3.755	15.647	68.810
3	1.421	5.920	83.828	1.421	5.920	83.828	3.604	15.018	83.828
4	.919	3.830	87.658						
5	.797	3.320	90.977						
6	.556	2.316	93.293						
7	.358	1.492	94.786						
8	.255	1.063	95.849						
9	.211	.877	96.726						
10	.165	.687	97.412						
11	.111	.461	97.873						
12	.105	.437	98.310						
13	.088	.367	98.678						
14	.072	.302	98.979						
15	.052	.215	99.195						
16	.040	.165	99.360						
17	.035	.144	99.504						
18	.032	.133	99.637						

19	.027	.112	99.748						
20	.023	.096	99.845						
21	.016	.067	99.912						
22	.012	.050	99.962						
23	.007	.028	99.991						
24	.002	.009	100.000						

Source: (Author, 2020)

From table 4.5.2.2 above, eight components have a value of more than one and therefore have enough total variance to represent a unique factor. Therefore, 8 factors were deemed significant for analysis and the rest disregarded. The 8 factors account for 83.828% of the variance explained.

4.5.2.3. Scree Plot

The study employed scree plot for analysis to help in identification of the components' numbers required for selection. The scree plot is composed of eigenvalues located on the vertical axis against component numbers located on the horizontal axis.

Figure 4.5.2.3: Scree Plot
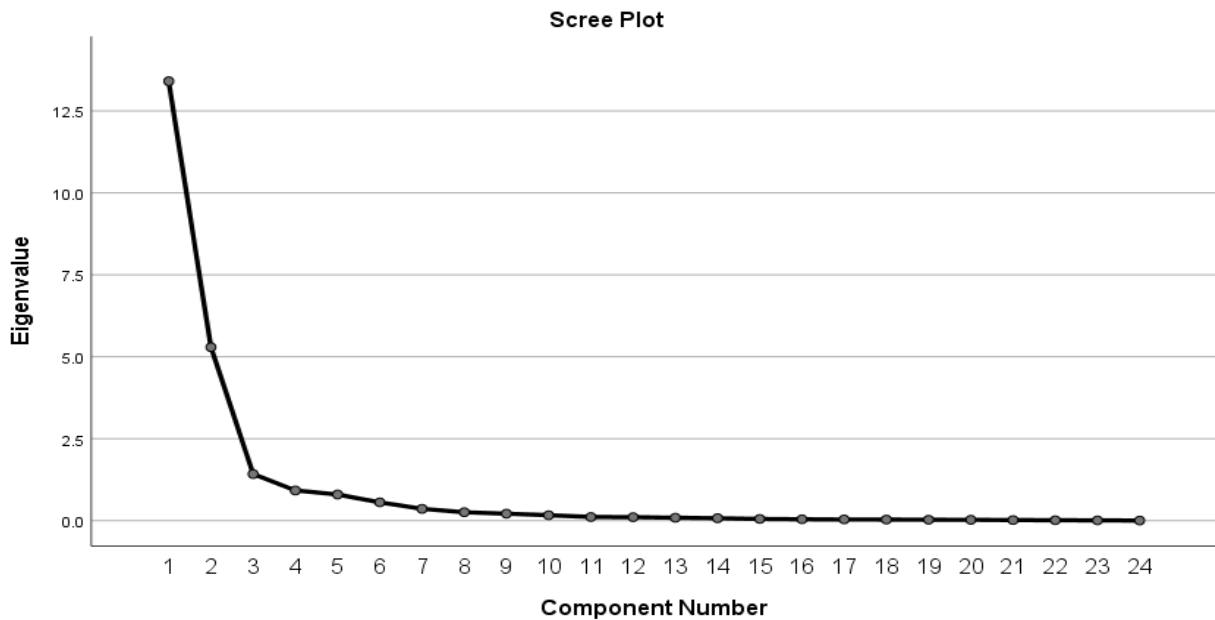
Source: (Author, 2020)

A bend is witnessed between the second and third component on the graph while flattening begins greatly after the third component confirming that it is a three-factor solution. this is evident that the graph gradually flattens after factor 3.

4.5.2.4. Component Matrix

The component matrix demonstrated below shows the correlation between each item and each of the three retained components. The Table 4.5.2.4 component matrix extracted using the principal component analysis gives an idea how the items correlate with the factors, but the interpretation shall be done on the rotated component matrix in Table 4.5.2.5

Table 4.5.2.5 Component Matrix

Component Matrix[a]			
	Components		
	1	2	3
Approved Solution Design	.965		
Number of vendor staff available for support.	.961		
Targeted Data Migration Strategy	.945		
Competency level of Organizations staff	.939		
User/SME Participation and Engagement	.938		
Feedback from other organizations experiences	.935		
Complexity of the organization's operations	.929		
Documented User Procedures	.909		
Focused Project and Scope	.894		
Vendors reputation in handling specific Installation method	.886		
Geographic location	.886		
Cost-benefit analysis	.882		
Information System Strategy of the organization.	.876	-.371	
Thorough System Testing	.859	-.388	
Customization level of the ERP system	.603	.505	
Organization Controls		.898	

SACCO's growth rate		.796	
Process Owner Led User Training and Sign-off		.792	-.383
Organization size		.787	
Competency level of vendor staff	.460	-.713	
Strong Executive Sponsorship Management	.559	-.700	
Organization structure	.321	.667	.426
Availability of resources	.518	.413	-.604
Level of Steering committee training	.495	.474	.539

Source: (Author, 2020)

4.5.2.5. Rotated Component Matrix.

The rotated component matrix clearly indicates the correlation of every item with each component after rotation using the Varimax with Kaiser Normalization. The rotations meet at 16 iterations.

Table 4.5.2.6 Rotated Component Matrix

Rotated Component Matrix[a]			
	Component		
	1	2	3
Targeted Data Migration Strategy	.967		
Approved Solution Design	.963		
Number of vendor staff available for support.	.937		
Competency level of Organizations staff	.934		
Information System Strategy of the organization.	.922		
User/SME Participation and Engagement	.920		
Thorough System Testing	.916		
Feedback from other organizations experiences	.904		
Cost-benefit analysis	.903		
Documented User Procedures	.882		
Focused Project and Scope	.873		
Complexity of the organization's operations	.847	.453	

Geographic location	.843		
Vendors reputation in handling specific Installation method	.789	.498	
Strong Executive Sponsorship Management	.668		-.547
Level of Steering committee training		.821	
Organization structure		.816	
SACCO's growth rate		.761	.441
Customization level of the ERP system	.467	.542	.341
Process Owner Led User Training and Sign-off			.848
Availability of resources	.518		.731
Organization Controls		.618	.708
Competency level of vendor staff	.556		-.636
Organization size		.495	.591

Source: (Author, 2020)

From Table 4.5.2.6, the researcher has grouped items with their appropriate factors showing the extent they may influence the choice of installation methods. The minimum correlation selected is 0.5. Factor solutions that have less than three important variables will not be chosen because they will not be able to explain much of the overall variability.

Table 4.5.2.6: Isolation of components

components	Variables
1	❖ Targeted Data Migration Strategy ❖ Approved Solution Design ❖ Number of vendor staff available for support. ❖ Competency level of Organizations staff ❖ Information System Strategy of the organization. ❖ User/SME Participation and Engagement ❖ Thorough System Testing ❖ Feedback from other organizations experiences ❖ Cost-benefit analysis

	❖ Documented User Procedures ❖ Focused Project and Scope ❖ Complexity of the organization's operations ❖ Geographic location ❖ Vendors reputation in handling specific Installation method ❖ Strong Executive Sponsorship Management ❖ Competency level of vendor staff
2	❖ Level of Steering committee training ❖ Organization structure ❖ SACCO's growth rate ❖ Customization level of the ERP system
3	❖ Process Owner Led User Training and Sign-off ❖ Availability of resources ❖ Organization Controls ❖ Organization size

Source: (Author, 2020)

Components in column 1 above shows the variables from Targeted Data Migration Strategy to Competency level of vendor staff grouped together and arranged based on the level of loading in descending order. Components from column 1 are composed of variable with greatest loading on component 1. They are therefore in association with the component from first principle. Factor 1 represents the vendor's reputation in handling specific Installation method as it loads more on component 2

Similarly, Components in column 2 above shows the variables from level of Steering committee training to customization level of the ERP system. Factor 2 represents customization level of the ERP system as it loads more on component 1.

Components in column 3 above shows the variables from level of process Owner Led User Training and Sign-off to organization size. Factor 3 represents Organization Controls as it loads more on component 2.

4.6. Discussion of Findings

ERP systems are considered to be key resources of SACCOs since is aid in value realization it depending on the implementation level. The result show that almost all SACCOs had implemented the ERP systems and all practices undertaken during ERP system implementation session are important. According to the study results, generally all the practices seem to be carried out by all respondents from moderate extent to greater extent with a mean score of above 3. Most of SACCOs in Nairobi to a great extent seem to be in concurrence with Wallace and Kremzer (2001) as far as forming an operational level project team, identification of a fully dedicated project manager, training of staff is essential part of the practices of implementation of an ERP (Harwood, 2003; William and Kremzer, 2001; Hustad and Bechina, 2011). The respondents also concur that it is carried out to a great extent thus supporting the training aspect during ERP project implementation. It is also essential to analyze costs related to the ERP implementation (Harwood, 2003; William and Kremzer, 2001; Heilala, et al, 2007). The respondents also concur to a great extent that Cost analysis of ERP systems is essential as well as a cost-benefit analysis. As per Harwood (2003) and Hustad and Bechina (2011), the respondents also concur to a great extent that Data migration is an essential part of the practices.

The big bang installation method emerged to be the most used among the respondents at 48%, followed by the parallel installation method at 20%; then the phased approach at 15% then the hybrid which is a new method at 10% and lastly the pilot method at 7%. Based on the mean scores of the choice factors of installation method in SACCOs in Nairobi county, all apart from five had an influence on the choice of installation method. The factors with a mean score of above 3 were 19 factors in number (79%) while below mean score of 3 were 21% showing that the choice of ERP installation method is highly influenced by the above factors researched on. The factor analysis carried out indicated that three factor solutions can be used to summarize the choice factors considered before settling on an installation method. These includes; Organization Controls, Customization level of the ERP system and vendor's reputation in handling specific Installation method.

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1. Introduction

Chapter five literally expound on the conclusions of study from the data analyzed, what the researcher recommends on future research, what limits the easy operation of the study and areas requiring further research. The study's objectives were; to establish the practices of ERP Implementation, to determine the extent to which the installation methods of ERP systems applied in SACCOs and to determine the factors influencing the choice of ERP installation methods in SACCOS in Nairobi County.

5.2 Summary of the Findings

Demographic information of the findings pointed out 82% response rate. Highest population of the respondents had a work experience of 5-10 years (41%) and majority of the SACCOs were above 40 years. Most SACCOs had between 15,000-20,000 members and 15-20 population of their employees. Most respondents agreed that their SACCOs use an ERP system for their operations

The first objective dictated an establishment of the practices of ERP implementation in SACCOs in Nairobi county. The findings indicated that all practices undertaken during the process of ERP system implementation are important. According to the study results, generally all the practices seem to be carried out by all respondents from moderate extent to greater extent with a mean score of above 3. The second objective was focused on level of application of the installation methods of ERP systems applied in SACCOs in Nairobi county. According to the findings, the big bang installation method emerged to be the most used among the respondents at 48%, followed by the parallel installation method at 20%; then the phased approach at 15% then the hybrid which is a new method at 10% and lastly the pilot method at 7%.

The third objective was to determine the choice factors considered when choosing an ERP installation method in SACCOS in Nairobi County. Based on the mean scores of the choice factors of installation methods in SACCOs in Nairobi county, all apart from five had an influence on the choice of installation method. The factors with a mean score of

above 3 were 19 factors in number (79%) while below means score of 3 were 21% showing that the choice of ERP installation method is highly influenced by the above factors researched on. A factor analysis carried out indicated that three factor solutions can be used to summarize the choice factors of installation methods. These included the Organization Controls, Customization level of the ERP system and vendor's reputation in handling specific Installation method.

5.3. Conclusion

SACCOs have invested heavily in technology to improve their competitive advantage as efficiency. They view all practices mentioned as essential with selection of a project team and a project leader essential to keep a focus on the project objectives. An operational level project team is also essential to ensure that departmental experts keep submitting valuable input to add value to the project. A cost and benefit analysis is also essential to ensure that the organization gets the best return on investment. A request for proposal is also an essential tool in gauging the capabilities of the vendors from a standard template to avoid bias. SACCOs also view data migration as essential in keeping the integrity and availability of the data.

The most common installation method in SACCOs in Nairobi county is the big-bang/direct cut-over strategy. This is largely due to the fact that this is the least expensive mode of implementation and is also used by companies that have sizeable growth as noted in other studies; in the literature review and in the results on the drivers influencing the choice of installation method herein.

SACCOs in Nairobi county consider most of the choice factors of installation methods mentioned as essential in determining the choice of installation method with the factors categorized into three clusters summarized as Organization Controls, Customization level of the ERP system and vendor's reputation in handling specific Installation method. The Organization Controls determines whether the ERP fits into the organizations plans and how best to implement it, the Customization level of the ERP system determines the extent to which the ERP system should the customize to match the user requirement defined prior and thus the installation method, vendor's reputation in handling specific Installation method determines the quality of the ERP system for its success.

5.4. Recommendations

The researcher recommended that any organization planning to install an ERP system in the institution should consider embracing the practices mentioned in this study for the success of their implementation. The organizations should also consider the mentioned factor of ERP installation choice before settling for any installation method because every installation method fit organizations differently. Therefore, the factors must be considered with a lot of caution for the successful implementation process: structures are optimal to ERP installation methods and right training enhanced together with ensuring competent vendor an ICT staff identified.

5.5. Limitations of Study

The study was tackled with challenges through the collection and analyzing of data process. The study faced time constraints from the respondents who took so much time in answering questionnaires which resulted to delay in data analysis. The researcher circumvented this by regularly checking on the progress with the respondents. Secondly, some respondents denied to give out information about their SACCOs terming this process as risky with hidden agenda. The researcher reassured them that the information will be held with confidentiality it deserves and also explained clearly the objective of the study. Finally, the study circulated questionnaires to the banks in order to collect data and this was a challenge since some of the respondents could not have a touch on the questionnaires since covid-19 pandemic was considered a virus that could spread through the papers. The researcher counter attacked this by circulating google forms to respondents who could not accept printed questionnaires.

5.6. Suggestions for Further Study

The future research should be done and cover other industries so as to compare the results that can be helpful to future researchers. Future research should also adopt a different research design and other data collection methods such as interviews that can be able to give more information on the area of study at the right time.

There continues to be advancements in the field of Enterprise resource planning systems. Further research could be done to investigate how different installation methods influence success of the Enterprise resource planning system implemented. Research can also be

carried out in relation to the extent of the relationship between installation methods and the factors that are used to make the choices of what strategy to implement as well as the relationship between installation method and the practices of ERP implementation.

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APPENDICES

Appendix 1: List of SACCOs

S/NO	SACCOs
1	Afya Sacco Society Ltd
2	Airports Sacco Society Ltd
3	Asili Sacco Society Ltd
4	Azima Sacco Society Ltd
5	Biashara Sacco Society Ltd
6	Boresha Sacco Society Ltd
7	Capital Sacco Society Ltd
8	Cosmopolitan Sacco Society Ltd
9	Daima Sacco Society Ltd
10	Dhabiti Sacco Society Ltd
11	Enea Sacco Society Ltd
12	Faridi Sacco Society Ltd
13	Fariji Sacco Society Ltd
14	Harambee Sacco Society Ltd
15	Hazina Sacco Society Ltd
16	Imarika Sacco Society Ltd
17	Imarisha Sacco Society Ltd
18	Jamii Sacco Society Ltd
19	Kencream Sacco Society Ltd
20	Kenpipe Sacco Society Ltd
21	Kenversity Sacco Society Ltd
22	Kenya Highlands Sacco Society Ltd
23	Kenya Police Sacco Society Ltd
24	Kwetu Sacco Society Ltd
25	Magereza Sacco Society Ltd
26	Maisha Bora Sacco Society Ltd

27	Metropolitan National Sacco Society Ltd
28	Nation Sacco Society Ltd
29	Ng'arisha Sacco Society Ltd
30	Safaricom Sacco Society Ltd
31	Sheria Sacco Society Ltd
32	Shirika Sacco Society Ltd
33	Stima Sacco Society Ltd
34	Ukulima Saco Society Ltd
35	Unaitas Sacco Society Ltd
36	United Nations Sacco Society Ltd

Appendix II: Questionnaire

Section A: Demographic Information of the SACCO

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 many years have you worked for this SACCO?

Below 5 years ☐

5-10 years ☐

10-15 years ☐

15-20 years ☐

Above 20 years ☐

4) what population of members does your SACCO have?

Below 5,000 Members ☐

5,000-10,000 Members ☐

10,000-15,000 Members ☐

15,000-20,000 Members ☐

Above 20,000 members ☐

5) How many employees does your SACCO have?

Below 5 workers ☐

5 - 10 workers ☐

10 - 15 workers ☐

15 - 20 workers ☐

Above 20 workers ☐

6. Do you use any ERP System in your SACCO (tick as applicable)?

Yes ☐

No ☐

Section B: Practices of ERP system Implementation.

7. To what extent were the following practices performed while carrying out the Implementation of the ERP system in your SACCO?

Rate on the scale of 1-5 where: (1 = Strongly disagree; 2 = Disagree; 3 = Neutral; 4 = Agree; 5 = Strongly agree)

		1	2	3	4	5
7.1	Cost and benefits analysis					
7.2	SWOT analysis					
7.3	Executive training					
7.4	Staff training					
7.5	Formation of Executive steering committee					

7.6	Formation of Operational level project team- consisting of operating department managers.					
7.7	Selection of Project Leader					
7.8	Identification of a fully dedicated Project Leader					
7.9	Business process analysis					
7.10	Business issue Analysis in list of requirement.					
7.11	Issuance of a request for proposal					
7.12	Analysis functionalities of different systems					
7.13	Cost analysis of different ERP systems					
7.14	Benchmarking with other SACCOs					
7.15	Software support framework analysis of different vendors to determine who provides best support.					
7.16	Determination of hardware requirements.					
7.17	Determination of training requirements					
7.18	Technical skills and experience analysis of potential vendors staff					
7.19	Initial need and staff awareness training					
7.20	Project team and system administrator training					
7.21	End users and managers training (operating the system)					
7.22	Process documentation-Procedures to be used with the new system					
7.23	System documentation-Templates					
7.24	Data clean up					
7.25	User acceptance tests					
7.26	Stress tests					
7.27	Interface tests					
7.28	Data Migration					
7.29	Post Implementation review					
7.30	Post go-live improvements and upgrades					

Section C: Installation method employed for the ERP.

8. What Installation method did you apply for the ERP system in your SACCO?

❖ Phased/ Step by step method. ☐

❖ Big bang/ direct cutover method. ☐

❖ Parallel Installation method ☐

❖ Pilot study Installation method ☐

❖ Hybrid transition method ☐

Section D: Factors for Choice of an ERP Installation method.

9. To what extent was each of the following factors considered in determining the choice of an ERP Installation method for the organization?

(1 = Strongly disagree; 2 = Disagree; 3 = Neutral; 4 = Agree; 5 = Strongly agree)

		1	2	3	4	5
10.1	SACCO's growth rate					
10.2	Organization structure					
10.3	Organization Controls					
10.4	Complexity of the organization's operations					
10.5	Strong Executive Sponsorship Management					
10.6	Customization level of the ERP system					
10.7	Competency level of Organizations staff					
10.8	Competency level of vendor staff					
10.9	Availability of resources					
10.10	Focused Project and Scope					
10.11	Geographic location					
10.12	Information System Strategy of the organization.					
10.13	Organization size					
10.14	Cost-benefit analysis					
10.15	Level of Steering committee training					
10.16	Process Owner Led User Training and Sign-off					
10.17	User/SME Participation and Engagement					
10.18	Number of vendor staff available for support.					

10.19	Vendors reputation in handling specific Installation method					
10.20	Feedback from other organizations experiences					
10.21	Approved Solution Design					
10.22	Documented User Procedures					
10.23	Thorough System Testing					
10.24	Targeted Data Migration Strategy					