The Effects of Enterprise Resource Planning Software Adoption on Performance of Major Supermarket Stores in Nairobi County

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DECLARATION

I declare that this work has not been previously submitted and approved for the award of a degree by this or any other University. To the best of my knowledge and belief, the dissertation contains no material previously published or written by another person except where due reference is made in the dissertation itself.

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Approval

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ABSTRACT

Many organizations have adopted and implemented enterprise wide information systems that can be summarized in the term Enterprise Resource Planning (ERP) systems. Implementation of ERP systems within organizations plays critical a role in finance, human resource, supply chain and project management functions because it provides a platform for enhanced efficiency and effectiveness in organization's productivity. However, ERP implementation is complex, costly and dogged by challenges. The general objective of this study was to assess the enterprise resource planning software (ERPs) adoption and implementation by major supermarket stores in Nairobi County. The specific objectives of the study were to; determine the ERP modules adopted and establish the effects of adoption of ERPs on performance of major supermarket stores in Nairobi County. The anticipation was that findings of this study would contribute towards ERPs implementation decisions. This study employed a quantitative research design to obtain an understanding of the extent to which the ERP modules adopted by major supermarket stores in Nairobi County impact on performance of the firms under study. The target population of this study included managers from the Information communication and Technology department, supply chain department, finance department and Human resource department and other knowledgeable staff in major supermarket stores in Nairobi County. A sample size of 30 respondents was selected using purposive sampling technique. Questionnaires were used for data collection and analyzed using quantitative analysis approach that included regression and correlation statistics with the aid of the Statistical Package for Social Sciences (SPSS). Data was presented in the form of frequency distribution tables and charts that facilitated description and explanation of the study findings. The study found a positive correlation between ERP software adoption and firm financial performance, growth and learning, internal processes and customer satisfaction. The study recommended further study to be conducted on the impact of challenges of ERP software adoption on firm financial performance and risks associated with adoption of technology solutions especially in the era of cyber insecurity.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF ABBREVIATIONS AND ACRONYMS

BPC	Business Process Change
BPR	Business Process Re-engineering
ERP	Enterprise Resource Planning
HCM	Human Capital Management
ICT	Information Communication Technology
IS	Information System
NACOSTI	National Commission for Sciences, Technology and Innovation
PDM	Product Data Management
PLM	Product Lifecycle Management
ROA	Return on Assets
ROE	Return on Equity
SPSS	Statistical Package for Social Sciences
TAM	Technology Acceptance Model
TQM	Total Quality Management
WMS	Warehouse Management System

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CHAPTER ONE: INTRODUCTION

1.1 Background of Study

This research assessed the effects of enterprise resource planning software (ERPs) adoption on performance of major supermarket stores in Nairobi County. In carrying out the study, the researcher sought to understand the relationship between ERP adoption by major supermarkets and their performance. Performance here was measured using Kaplan and Norton's (2004) Balance Score Card (BSC) that has a matrix of four perspectives including the customer perspective; innovation/growth and learning perspective; internal business processes and financial perspective. The study also endeavored to determine the ERP modules adopted by major supermarket stores in Nairobi County. Three theories informed the study, namely technology acceptance model (TAM), change theory and diffusion of innovation theory.

In the retail industry, the distinction between retail supermarket stores continues to reduce as the desire for services of convenience with value addition rises and clients are more enlightened and demanding and less loyal unlike in the past (Daft, 2011). Similarly, the business world is moving closer to a completely collaborative model and competitors are upgrading their capabilities to remain competitive in the market (Porter, 2008). Organizations must therefore upgrade their capabilities to generate and communicate timely and accurate information. They must manage their costs, improve customer satisfaction, improve business processes and continuously grow and learn, increase sales and profitability among others. To realize these goals, organizations are in a high rate adopting enterprise resource planning (ERP) systems (Loizos, 2008).

Raymond (2010) observed that in today's fast paced business environment, world-class performance cannot be sustained through manual efforts alone. That the sector of information technology has demonstrated to be a critical facilitator of increased business performance outcomes. This is due to the fact that the ICT sector contributes to enhanced efficiency and effectiveness (Njau, 2010). Njau continued to opine that since 2000 when the ICT sector was initiated, it has performed far much better as opposed to other sectors of economy, registering an annual growth of 20%. The sector has always experienced an upward growth in performance (Njau, 2010).

Use of Enterprise Resource Planning (ERP) software in integrating business processes has enabled business transactions to be automated, decision-making processes to be efficient increased productivity and developed client services (Yungmok, 2009). Among other benefits, Information technology has improved business performance through the adoption of ERPs. This is demonstrated by the fact that companies are able to register increased savings through coordination and centralization of the procure to pay operations, a process that has been enabled by the Supplier Relationship Management ERP module (Ongwae, 2010).

Competition also compels businesses to invest in enablers like ERPs in order to streamline their business operations like purchasing, accounting operations, staff management, management of orders and storage (Tong, 2010). Numerous companies globally use ERP systems to realize consistency in information structures and re-engineer their business activities (Langenwalter, 2011).

ERP structures act as backbones of information processes and provide solutions to dispersed information by integrating every information passed through the organization across various business functions and units and links different units located in different geographical areas globally (Marketos, 2010). Otieno (2012) observed that adoption of ERP software has revolutionized information provision processes. They offer off-the-shelf answers to organizations' information requirements.

1.1.1 Adoption of Innovation

Innovation describes the process of developing and using new products, concepts and operations in an enterprise. It involves the acquisition and transmission of new knowledge (Calantone, 2013). Innovation implements ideas which are a product of creativity resulting in a clear tangible distinction in the business processes (Davila, 2010). Being able to develop and implement an innovative idea enables and supports a competitive advantage (Tidd, 2013).

Similarly, the speed of innovation take-up or adoption is influenced by a multitude of factors both inside and outside control of the innovator. The four key elements that brings about the process of diffusion include the innovation process, how messages regarding the innovation is

passed, time, and the kind of social structures into which the innovative product is introduced to." (Surry, 2013, p.1; Rogers, 2010).

Rogers (2010) indicated that the diffusion process goes through five stages namely knowledge creation, persuasion, decision making, adoption and confirmation. The likely users of an innovative product, in this case ERP must learn the innovative product, be convinced of the benefits of the product, make a decision to adopt the innovation, use the product and confirm by reaffirming or rejecting the idea of adopting the innovative product (Surry, 2013).

Identifying early adopters and individual innovativeness in the targeted community is crucial to achieving widespread adoption and underscores the importance of first having a solid understanding of how users and individuals view adoption as a basis for corporate or organizational adoption. Innovators are the takers of risks and people who pioneer the use of an innovative product during the initial stages of the process of diffusion. The other end has the Laggards, who are the people that offer resistance to the adoption of an innovative product till much later, if ever they end up adopting the innovation (Surry, 2013, p.3).

Individuals' decisions regarding the innovative product is a process that occurs over time and not an instantaneous one (Rogers, 2010). The decision process in regard to an innovation is an activity that involves seeking and processing information, where people are made to minimize uncertainties regarding the merits and the demerits of an innovative product. It is a social process that comprise dialoguing with stakeholders and the personal desire to understand the innovative product and give meaning to it (Rogers, 2010).

1.1.2 Overview of Enterprise Resource Planning

Enterprise Resource Planning is a collection of software that are deployed in integrating business enterprises (Chase, 2010). On his part, Shtubm (2009) noted that the ERP software enables business enterprises to enhance their working capital, practice a total quality management (TQM) philosophy, reduce levels of inventory held, enable optimal use of raw materials, sell and deliver goods to the clients. ERP software have helped in the elimination of rigid structures that largely contribute to increased costs, unusable data and wastages (O'Leary, 2010). Basically, enterprise

resource planning software constitute a computer system that informs management on the happenings in the organization and its global linkages (Jacobs, 2013). ERPs use heightens visibility of the entire process of procurement, the business spend and analyses of the procurement, supplier performance, supplier payables and staff expenses analysis.

Through the entire procurement process, a company can minimize costs, improve profit levels, enhance client satisfaction and achieve competitive edge (Jacob, Clegg, & Bennett, 2011). An ERP software enables an enterprise to have a holistic view of the entire process of procurement leading to identification of cost minimization opportunities (Thomas & Jajodia, 2012). Through the use of an ERP software, the user achieves a complete total control of all the organizational processes.

The ERP software can be categorized into various types that provide various functions which align to various processes that comprise a business enterprise. Various ERP software occur in various types or modules and this is dependent on the kind of business that an organization engages in (Beynon & Davies, 2013). ERP software have benefits in that the various modules can work together and offer greater flexibility. An ERP software can be applied to work as all these systems in one instead of having small independent systems used to control and support various segments of a business enterprise. An ERP system makes it possible for information stored in a single independent system to be directly accessed by another. This is possible due to the fact that an ERP system has a database that is centralized (Beynon & Davies, 2013).

According to Bradford (2009), business systems connect customers and suppliers in a computer supply chain, enable decision making processes, coordinate sales activities, execute marketing processes, carry out operations, logistics, purchasing, finance, product development, and human resource management. Davenport (2014) posits that ERP enables a holistic view of business activities through single information and IT infrastructure. It facilitates effective management of all the business operations in a coordinated manner, and affords decision making information in a timely and reliable manner (Mabert, Soni, & Venkataramanan, 2013). Bradford (2009) indicated that the merits of ERP use comprise minimal interfaces with single application infrastructure, reduced costs, enhanced access to information through various applications, single

system for business procedures and tasks, automated tasks with increased effect and facilitates real times access to information.

Moved by assurances of enhanced business productivity, streamlined business activities, and heightened cost reduction, business enterprises globally have initiated processes of adopting ERP systems in their businesses (Tilley, Bruce, & Hallam, 2012). There has been increased growth in Enterprise Resource Planning (ERP) systems deployment as enterprise information system platforms for retail businesses (Davenport, 2014).

Gargeya and Brady (2009) stated that research done in developed nations indicate that companies incur significant costs in implementing and maintaining ERP systems. For instance, Akkermans and van Helden (2010) and Monk and Wagner (2009) noted that the implementation period for a typical ERP system takes up to three years and it costs tens to hundreds of millions of dollars.

Historically, African companies have been slower in applying information technology to automate their business operations. However, they are catching up very fast and those companies lagging behind with manual systems are not common (Marketos, 2010).

Retail chain supermarkets in Kenya have adopted usage of ERP software in managing their costs, planning their products, procurement activities and in managing their inventory levels. Similarly, the ERP software have been used in integrating suppliers, serving customers, managing human resource and finance and in order tracking. In other words, organizations have applied the ERP software in improving their competitive edge and reducing costs leading to improved efficiency in processes including inventory and sales (Shah, Bokhari, Hassan, Shah, & Ali, 2011).

1.1.3 Factors Affecting ERP Adoption

Relative advantage: Refers to the extent to which an ERP is viewed as better than any that existed before or a previous one that was deemed to be the best, until the new one came along (Rogers, 2010). To adopt, the supermarket stores needed to have perceived ERP as more beneficial than the systems they used before.

Compatibility: This refers to the extent to which an ERP is seen as agreeing with organizational values, previous experiences and requirements of potential users (Rogers, 2010). To adopt, the supermarket stores needed to be sure that pursuing ERP adoption and implementation

opportunities would not derail them from stakeholder norms and principles, including national legal law requirements.

Complexity: Is the extent to which an ERP software is perceived as hard to understand and use (Rogers, 2010). ERP software as an idea needs to be made easy to understand as its use requires minimum basic digital skills threshold and access to digital hardware and infrastructure, such as computers, internet and digital skills. This would determine the rate at which the supermarket stores would adopt, or not, depending on their understanding of the innovation and its accessibility.

Trial-ability is the extent to which an innovative product may be experimented with. New ideas that can be accessible for testing and trying will be taken up more quickly as opposed to innovations that are less accessible. An innovative product that is implementable addresses any uncertainty to the individual or organizations which are considering it for adoption (Rogers, 2010). To adopt, the supermarket stores needed to see the ERP software as one that is easy to learn and implement. They also needed to understand that they could build their capacity where any was lacking, so as to able to effectively use the ERP.

Observability: This is the extent to which the results of an innovation (ERP) are visible to others. The easier it is for individuals or organizations to see the results of an innovation, the more likely they are to adopt (Rogers, 2010). This encourages peer discussion and greater awareness rising about the innovation. If some organizations adopt ERPs and demonstrate its performance gains, other organizations would then be easily influenced to adopt an ERP.

1.1.4 Balanced Score Card

The Balanced Score Card model was originated and popularized by Kaplan and Norton (2007). The two scholars attempt to offer solutions to four questions faced by the majority of the business enterprises. The questions include; what perceptions do customers hold about us? In what areas of our business must we excel in? How possible is it for us to consistently enhance and add value? And lastly what relationship do we have with our shareholders? From these questions, we have four perspectives from which company performance can be measured based on the balanced

Score Card approach. The four perspectives comprise satisfaction of customers, growth and learning, internal business processes and financial performance perspective.

Kariuki (2012) described the balanced scorecard as a strategic planning model or instrument and a management tool that is utilized by organizations world over. The model is applied to align business operations to the organization's vision and strategy, to enhance communications and to evaluate the performance of an organization against its strategic objectives. Kaplan and Norton (2007) indicated that the BSC can be used severally in organizations. The authors identified seven critical uses that cut across all kinds of organizations in advancing the business vision and strategy and in identifying the performance areas that optimally connect the organizational vision and strategy to its performance outcomes. These comprise financial outcomes, efficiency in operations, innovation, staff performance, developing objectives that are aligned to the vision and strategies of the business; establishing appropriate key performance measures and ensuring organization wide buy in to the measures; establishing effective budget tracking, establishing effective internal and external communication, and reward structures; consolidating and analysing performance information and comparing actual outcomes with the required performance and taking measures to eliminate performance gaps (Kaplan & Norton, 2004).

Kaplan and Norton (2007) stated that the balanced score card model is used in assessing organizational performance on all the four areas of financial objectives, customer needs, internal capacities and growth and learning goals. It therefore means that the BSC model is applied in selecting the realizable and realistic goals and doing away with the unrealizable and unrealistic goals of the company (Kaplan & Norton, 2004).

The diffusion of innovation theory serves to explain the spread of new innovations, describing how the spread occurs and what factors drive it. The outcome of this diffusion influences the speed at which individuals or organizations adopt the new concept in their operations. ERPs being a form of innovation implies that organizations/supermarket stores embrace them as a useful innovation that is then operated by its stakeholders, more so the staff who are to be entrusted to use the system. Consequently, adoption of ERP software is driven by factors that add value or create competitive advantage for the supermarket stores including enhanced

financial outcomes, improved client satisfaction, improved operational activities, enhanced knowledge and growth as postulated by Kaplan and Norton's balanced score card (BSC).

1.1.5 Supermarket stores in Nairobi County

According to Lockard (2010), the retail services provided by supermarkets comprise the sale of commodities and services from businesses enterprises through self-service mechanisms to the end-consumer. The supermarket operators are part of the supply chain system. Supermarket operations involve purchasing of inventory commodities in large amounts directly from producers or via a wholesale provider and selling via shelf self-service in smaller amounts to the user at a profit (Lockard, 2010). Retail supermarket trading is categorized based on the kind of goods inventory which comprise food, durable goods and consumables (Lee, 2012).

The costs incurred in management of the distribution chain from the manufacturer to the various regional branches, handling of the goods, their storage and maintaining stocks is a substantial expense. However, the true cost of stock usually lies within the goods that ensure inventory maintains its standards of quality prior to it being sold to the final user while still stored within the supermarket (Shah, Bokhari, Hassan, & Ali, 2011). Shah et al. continued to state that the retails supermarkets should develop trading relationships with suppliers of sale items as a key task and consumer satisfaction as a key performance measure. Retail supermarket stores need to adopt the usage of ERP modules to conduct their inventory planning, procurement, stock management, integration of their suppliers, customer service provision, financial operations, staff management and order tracking (Shah et al., 2011). In other words, the ERP modules should be applied to achieve competitive edge and minimize costs by enhancing general efficiency in managing stocks and sales (Shah et al., 2011).

1.3 Problem Statement

Organizations invest in ICT systems with the aim of improving organizational performance in terms of realizing their strategic goals and objectives. Hossein (2011) observed that ERP modules link management information through the whole organization, including financial, sales and

customer relationship management. The ERP modules are intended to achieve an organization's strategic objectives such as managing costs, financial growth, customer satisfaction, continuous learning, growth, and improvement in business processes etc. (Federici, 2009).

Studies conducted on ERPs have mainly focused on the challenges faced during ERPs implementation and success factors (Calatone, 2013; Mokaya, 2012; Martin, 2008; Austine, 2011; Venkatraman & Kiran, 2016). The studies concluded that the challenges faced become an obstacle by limiting the extent to which the strategic objectives are realized or they altogether hinder realization of any of the objectives of implementation resulting in a failure situation. Clearly, these studies focused on different concepts other than the performance effects of ERP adoption and hence creating a conceptual gap that needed to be filled.

Further, studies that have focused on the performance effects of ERP adoption did not consider the four performance perspectives advanced by Kaplan and Norton's (2004) balanced score card in a single study. They only focused on either financial performance, customer satisfaction, growth and learning or internal business processes. Such studies include Kennerley and Neely (2011); Wieder (2012); Velcu (2015); Motwani and Sharma (2016); Wanyoike (2017); Kariuki (2012). This creates a contextual gap that necessitated conduct of the current study.

Similarly, in spite of retail businesses in Kenya and elsewhere deploying ERP software, not much academic attention has been directed to assessing the effects of ERPs adoptioin on retail business performance. Also, Njihia and Mwirigi (2014) indicated that academic studies on ERP software use in Kenyan enterprises is limited and hence there is no clear understanding as to how ERP adoption influences the performance of retail enterprises. Additionally, given the immense costs required to implement and maintain ERPs, one wonders whether performance goals can ultimately be realized. This concern and the absence of academic research focusing on the impact of ERP software adoption on the performance created empirical gaps that required to be filled by this study. The desire to bridge the identified contextual, conceptual and empirical gaps therefore necessitated this study which sought to assess the effects of ERPs adoption on performance of major supermarket stores in Nairobi County, specifically focusing on Kaplan and Norton's (2004) balanced score card model of financial performance, customer satisfaction, internal processes, growth and learning.

1.4 Research Objective

The general objective of this study was to establish the effects of enterprise resource planning software (ERPs) adoption on performance of major supermarket stores in Nairobi County.

1.4.1 Specific Objectives

The specific objectives of this study were;

i. To establish the ERP modules used by major supermarket stores in Nairobi County.
ii. To determine the effects of ERP adoption on financial performance
iii. To determine the effects of ERP adoption on organizational learning and innovation.
iv. To determine the effects of ERP adoption on internal processes.
v. To determine the effects of ERP adoption on customers.

1.5 Research Questions

i. What ERP modules had been adopted by major supermarket stores in Nairobi County?
ii. What were the effects of ERP adoption on financial performance?
iii. What were the effects of ERP adoption on organizational growth and learning/ innovation?
iv. What were the effects of ERP adoption on internal processes?
v. What were the effects of ERP adoption on customers?

1.6 Scope of the Study

This study assessed the effects of enterprise resource planning software (ERPs) adoption on performance of major supermarket stores in Nairobi County. It focused on the ERP modules adopted and their effects on performance. The Balanced Score Card perspectives were used to measure performance. The study targeted major supermarket stores in Nairobi County and

specifically collected data from managers of the Information communication and Technology, supply chain, finance and Human resource departments and other staff knowledgeable of ERPs in the major supermarket stores.

1.6 Significance of the Study

The findings of the study may assist other firms in ERP implementation decision making processes based on its effects on the four BSC model perspectives that were employed by this study. The study is important for the employees in the retail industry, as it may appreciate how ERP software impact on their enterprises achievement of performance goals. Also, by conducting this research, the management and employees of the retail enterprises in Kenya may acknowledge how use of ERPs can enable and simplify their tasks while positively influencing business performance.

By highlighting the merits of adopting ERP systems, this research would be resourceful to management of organizations as a whole. Profitable enterprises as a result of adoption of innovations invariably means to a prosperous nation. Future scholars conducting related research would find this study quite resourceful for material reference.

Other organizations can therefore draw lessons from the experiences of the supermarket stores surveyed which can be used to inform decision making. Such organizations intending to implement ERPs can borrow from the successes of retails supermarkets covered by this study and consequently design and implement ERP systems successfully and reap the performance benefits thereof.

1.8 Definition of Terms

This section provides the operational definitions of main terms and ideas that have been used in the study.

1.8.1 Enterprise Resource Planning System (ERP)

ERP is a collection of software solutions applied to link business enterprises with each other (Chen & Lin, 2011). For the purpose of this study, ERP systems define the software solutions

comprising of a number of modules including the finance module, sales module, HR module and production module. All these modules enable organizations to integrate data cross their various functions and divisions.

1.8.2 Performance

Performance refers to how well a firm uses its resources to meet its strategic objectives (Wei, 2008). In this study, it means performance in regard to improved profitability, client satisfaction, improved internal enterprise operations and enhanced business growth and learning.

1.8.3 Balanced Score Card

Kariuki (2012) defines BSC as a strategic planning and management instrument that is applied by business enterprises to align business operations to their established vision and strategy, to enhance their communication activities and control their performance based on their strategic objectives (Kariuki, 2012). In this study, the BSC refers to Kaplan and Norton's (2004) perspectives of performance including in the areas of finance, level of customer satisfaction, internal business operations, growth and learning.

1.7.4 Major Supermarkets

According to Shah et al. (2011), major supermarkets are those whose annual turnover exceed Kenya Shillings 1billion and have branches in several locations. In this study, major supermarkets refer to those that have more than five branches in Nairobi County.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter evaluates the relevant literature on the topic relating to enterprise resource planning software (ERPs) adoption and implementation. The chapter begins with a theoretical model to justify conduct of this study. The chapter also presents a conceptual framework to guide discussion and the previous studies related to this study. The chapter also presents the identified research gaps to inform the current study.

2.2 Theoretical Framework

This sub-section explain the theory on which this study is based namely the technology acceptance theory which is an information systems theory that explains how technology adopters embrace and apply new technology.

2.2.1 Technology Acceptance Model (TAM)

Davis (1989) put forth the Technology Acceptance Model (TAM) so as to explain the acceptance of information technology. According to the theory, the major determinants of whether an organization adopts information technologies is based on how it is perceived useful and its ability to use easily (Davis, 1989). A number of studies such as of Adamson and shine (2008); Brown et al. (2007) have used TAM to assess the acceptance of ERP use by the end user. The key basis of using TAM is that it provides a premise for analysing the impact of external elements on organizational values, attitudes, and purpose.

According to Davis (1989), the key objective of TAM was initially to offer information about what determines acceptance of computer technology that is able to explain the behaviour of users through a wide range of computing technologies. Its key purpose therefore was to offer a premise for tracking the effect of external elements on organization's internal belief systems, its attitudes and purposes (Davis, 1989). In short, the technology acceptance model was originated to predict personal adoption and use of innovative technologies (Venkatesh & Davis, 2008).

According to the technology acceptance model, when users are provided with new innovative technology, their decision on when and how to make use of it is influenced by its perceived usefulness and the simplicity with which its users can operate it (Davis, 1989). Perceived usefulness is described as the belief by a prospective technology user that use of a particular technology will lead to improved job performance. On the other hand, perceived ease of use describes the extent to which the prospective technology user believes the target technology innovation can be effortlessly applied. The theory continues to further beliefs that the impact of external elements like design traits on the user behaviour will be characterized by an innovative technology's perceived usefulness and ease of application (Venkatesh & Davis, 2008). TAM theorises that application of new technology is a function of behavioural intention and its perceived usefulness.

Some of the external variables advanced by Venkatesh and Davis (2008) in the use of TAM, comprise elements like subjective tradition or culture, image, task relevance, quality of production, ability to show results, and perceived ease of application, experience and voluntariness. TAM, according to Venkatesh and Davis, presents two theoretical processes, social influence and cognitive instrumental processes, to explain the effects of the various determinants on perceived usefulness and behavioural intention.

Several studies (Adamson & shine, 2008; Brown et al., 2011) employed TAM to evaluate the acceptance of ERP by the user. The key objective for using TAM in these studies was to provide a blue print for understanding the social dynamics in understanding new technology. They also used it to explain the elements of social influence and cognitive activities in the adoption of an innovative technology.

This study applied TAM as a foundation for understanding the impact of external variable, in this case ERP on performance. It also provided a means of understanding the variables that operate in the relationship between the technology users and change.

2.2.2 Change Theory

Because implementation of ERP software comprises reengineering the business activities of organizations that apply such technology, change theory may be important in detailing the findings of the current study. Business process change refers to a company's effort to develop business processes to realize substantial performance improvement, for instance improvements in responsiveness, quality, cost reduction, flexibility, customer satisfaction, value addition via alterations in the association between management, IT, company structure and employees. These efforts might vary in scope ranging from improvement in processes to introduction of radical new activities depending on the extent of change introduced in every organizational section. Hence, in any evaluation of business process change results, organizations need to give consideration to the environmental situation for change and the capacity of the enterprise to manage change in these environmental variables (Papinniemi, 2009).

Kettinger and Grover (2005) originated a theory that looks at all the elements of business process change management. Their model postulates that any substantial BPC needs a strategic effort where top management serves as leaders in developing and explaining a change vision. The company environment, with an existing culture, an orientation to freely share knowledge and understanding, balanced organizational relationships and an ability to learn, should enable the adoption and implementation of outlined process and change management approaches. Operations and change management approaches together with the change environment provide input towards improved business activities and aid in obtaining enhanced quality of output, both of which are requirements for customer satisfaction and eventually in realizing competitive performance benefits that are both measurable and sustainable.

Lewin (1951) determined three phases via which change agents need to go through before change is institutionalized in a system. The phases comprise the; Unfreezing stage (when change is required), moving (when change is commenced) and refreezing (when a balance is established). Lewin also detailed how certain elements can impact change. Rogers (2003) expanded and modified Lewin's work by detailing five stages of planned change, namely awareness, interest, evaluation, trial and adoption.

This study was premised on the change model which is one of the most referred to in technology solutions adoption. Past studies have applied the theory in attempting to explain how and why changes take place. This selection is based on the fact that change explains the route between awareness of a new idea, in this case ERP adoption, and recommended behavior change and the individual adoption decision process necessary for an organization to achieve its strategic performance goals. The extent of employees' acceptance of the change in operations and proper ERP project implementation influences achievement of strategic goals and objectives.

2.2.3 Diffusion of Innovation Theory (DOI)

This theory was advanced by Everett Rogers (2003) and explains how an idea gains momentum over a specified time period and causes change to happen in a social system (Rogers, 2010). The theory serves to explain the spread of new innovations describing how the spread occurs, what factors drive it and at what rate it happens. The outcome of this diffusion normally is that individuals adopt the new concept. Rogers (2010) explained that diffusion is the process via which people are informed about innovations in a social environment. He postulated that the spread of a new idea or way of thinking is influenced by the innovation itself, timing, the social systems and communication channels. All these factors have a heavy reliance on people. The key to adoption is that the person or organization must perceive the idea as new or innovative for diffusion to be possible (Rogers, 2010). Sometimes the process of diffusion may fail to happen as expected due to weakness of the innovation or new product, limited awareness or competition. For an organization to improve its performance, it must ensure that whatever innovations and new product strategies are taken up, diffusion occurs adequately and to the correct target audience.

In the case of ERPs, it implies that organizations/supermarkets must embrace the ERP adoption as a useful innovation, understand it and communicate to all its stakeholders, more so the staff to be entrusted to operate the system. Consequently, adoption of ERP modules should result to enhanced financial outcomes, improved client satisfaction, improved operational activities, enhanced knowledge and growth. Organizations adopting ERPs would hopefully gain competitive/ comparative advantage. It is on this premise that the theory was relevant in this study.

Decisions about an innovation are not an instantaneous act. It is a process that happens over time and it consists of a series of actions and decisions (Rogers, 2010). Innovation-decision process is basically an information-seeking and information-processing activity in which the individual or organization is motivated to reduce the uncertainty about the advantages and the disadvantages of an innovation. Innovation-decision is a social process that involves talking to others and the individual wishes to understand the innovation and give meaning to it (Rogers, 2003). According to DOI theory, adoption of innovation goes through five stages namely the knowledge stage, persuasion stage, decision stage, implementation stage and confirmation stage.

Knowledge Stage

The innovation–decision process begins with the knowledge stage, which occurs when a person is exposed to the existence of an innovation and gains some understanding of how the innovation functions (Rogers, 2010). Knowledge of an innovation is quite different from its utility. This is because the individual might not view that innovation as relevant or useful to the individual's current situation. This, according to Rogers (2010), may be caused by the already perceived attitude towards the innovation. In this stage, an organization gets information about a new innovation in the form of ERP software and the value it brings to an organization.

The Persuasion Stage

This is the second stage in the innovation-decision process. The individual develops a good or negative attitude towards the innovation, and becomes more psychologically involved with it. He or she actively seeks information about the innovation. The thinking at this stage is directed by feelings towards the innovation. A person may mentally apply the new idea to his or her present situation or even his or her anticipated future situation before deciding whether or not to try it (Rogers, 2010). Having knowledge of the existence of ERP software and the benefits that come with it, a positive attitude and perception is created towards the ERP and this activates an information seeking endeavor to understand more about it and the potential it holds if adopted.

All innovations have some degree of uncertainty for the individual who is unsure of the new idea's results and thus feels a need for social reinforcement for his or her attitude towards the

new idea. This stage is important for this study because it is here that employees in the ERP adopting supermarket market would have formed an attitude towards its use, positive or negative. The main outcome of the persuasion stage is either a favorable or unfavorable attitude towards the innovation (Rogers, 2010).

Decision Stage

Rogers (2010) explained that the decision stage occurs when an individual engages in activities that lead to a choice to adopt or reject an innovation. Each stage in the innovation-decision process is important since it represents a potential adoption or rejection of the innovation. Rogers also noted that rejection can occur even after a prior decision to adopt the new technology. According to Rogers (2010), an innovation may face two types of rejection. The first is active rejection and the second is passive rejection. The former consists of considering adopting the innovation but then deciding not to adopt while the latter consists of never having considered using the innovation. Upon understanding the value that ERP software adoption portends in the persuasion stage, the organization has to make a decision to adopt the ERP so as to reap the benefits that come with it. If the benefits do not outweigh the demerits associated with adoption of the ERP, the organization then elects to reject adoption.

Implementation Stage

Rogers (2010) explains that implementation occurs when an individual puts an innovation to use. Until the implementation stage, the innovation-decision process is strictly a mental exercise. It is one thing to decide to adopt an innovation, but quite another to put the innovation to use. The implementation stage usually directly follows the decision stage, unless it is held up by some logistical problem. The implementation of ERPs could directly follow the decision to adopt. This will mean assembling all the resources required for ERP implementation and actually beginning the implementation phases.

Confirmation Stage

Rogers (2003) averred that in the confirmation stage, the implementing organization seeks reinforcement for the innovation-decision already made, or reverses a previous decision to adopt or reject the innovation, especially if exposed to conflicting messages about it. For the supermarket stores, this would have come in the form of possibly seeking affirmation from peers about the ERPs, to confirm that they too are enjoying the benefits brought about by their adoption and that they are all finding it beneficial. The confirmation can also be in the form of bench marking to ascertain the benefits of ERP software adoption.

The innovation-decision process involves time in the sense that the five steps usually occur in a time-ordered sequence of knowledge, persuasion, decision, implementation and confirmation. Exceptions to the usual sequence of the five stages may occur such as when the decision stage precedes the persuasion stage. The innovation-decision period is the length of time required to pass through the innovation-decision process (Rogers, 2003).

2.3 The Concept of Enterprise Resource Planning Systems

Gracheve (2010) defined Enterprise Resource Planning (ERP) system as "a set of business applications or modules, which link various business units of an organization such as financial, accounting, manufacturing, and human resources into a tightly integrated single system with a common platform for flow of information across the entire business."

ERP systems are software modules that control all the areas of a business enterprise including finance, HR, sales and supply chain. Business enterprises have traditionally been categorized on the basis of functional divisions including finance, marketing and sales. So as to respond to customer demands in a fast evolving marketplace, operations must flow quickly and accurately through the functional areas (Monk & Wagner 2009). Functional divisions have been increasingly replaced by a single ERP system through a centralized database and common reporting instruments (Davenport, 2014). Each functional division within a business enterprise is linked by the ERP software. This cross-functional linking enhances business integration with the capacity to see real-time outcomes (Ranganathan & Brown, 2006).

ERP modules impact an enterprise's business processes, increase their efficiency, and as a result, automates them (Themistocleous, 2010). These ERP systems alter workers' jobs and their manner of thinking from a functional methodology to one of a business process methodology (Wieder, 2012).

One example of an organizational process is the order-to-cash, where a commodity order is placed, the commodity is either produced (or located in stock), then delivered, an invoice is sent and a bill paid. Many organizations have duplicate structures from the functional or departmental divisions and from mergers and acquisitions. By relying on a common database with a cross-functional method, management has one view of the data and the departments no longer own information and become more effective (McCombs, 2007). Various divisions are integrated, data is entered only once, eliminating typing errors, thus linking the entire organization (Chang, 2006). Additionally, the holistic view of the whole organization enabled by an ERP module can give top management the much needed control (Monk & Wagner, 2009).

2.4 Reasons for ERP Adoption

Development of enterprise resource planning has been influenced for a long time in various states by different reasons like business culture, organisational culture, available resources and competitive environment including the manner in which workers and companies perceive adoption of ERP systems (Hong & Kim, 2012). The key business purpose for ERP adoption normally consists of companies looking to enhance their business operations, for instance, information transmission, quality control and order processing (Chen & Lin, 2011). By so doing, adoption of ERP systems helps in the bringing together of fragmented business information or functions among companies, suppliers and customers (Chang, 2006). Enterprise resource planning might act as a supporting instrument to improved decision-making by linking business processes (Razmy et al., 2009). What motivates adoption ERP might vary, however the major objective is information processing so as to enhance organizational decision-making (Spathis & Constantinides, 2014). Time and resources usage is unavoidable in embracing and implementing such a complex software with challenges bound to occur in its implementation stages.

Adoption and use of ERPs is premised on the expected gains aimed and assessed in the evaluation of the capital outlay in the pre-implementation phase (Esteves, 2009). Some drivers of facilitating ERP occasions numerous changes in the amount and quality of the information, business operations and gives rise to cultural changes such as workers' attitudes (Loh & Koh, 2004).
Effective ERP implementation creates the expected gains for the company and also re-engineers other elements of the company structure (Hong and Kim, 2012). The general effect of effectively harnessing the ERP software is companywide improvement in performance of technology and competitive environment (Burca, Chan, Bullen, 2005). The ultimate effect of enterprise resource planning is on the efficiency gains registered in business activities and successful organizational business operations (Mabert et al., 2013). Once the gains are harnessed within the company then company management considers these synergies in their value chain leading to improved management of clients and suppliers.

2.5 Modules of ERP Systems

According to Parr and Shanks (2013), ERP systems consist of a collection of software packages comprising various modules that include human resources, sales, finance and production modules. These modules facilitate provision of organization wide data integration via embedded business operations. These ERP modules can be tailored to meet specific organizational needs.

One of the ERP modules is the supply chain management module. According to Gelinas (2010), the supply chain management (SCM) module offers visibility into the whole supply chain from the beginning to the end. ERP supply chain modules comprise of elements for forecasting, managing demand, purchasing and planning; delivery modules like logistics and elements for after-market concerns like contracts, returns and installations.

The other ERP information system is the customer relationship management (CRM) module that is applied in organizing and viewing information on individual customer business transactions in a single accessible place. This module offers customer information integration which tracks customers through all the sales channels.

The third ERP module is the product lifecycle management (PLM) software which facilitates tracking the product design and attributes through its lifecycle, right from its concept stage to

end of life cycle stage. The elements that constitute ERP PLM information system comprise product information management (PDM), product design, direct materials sourcing and management of client needs.

Human capital management (HCM) is the fourth ERP information system which works as the key employee record. The module records employee actions, helps the administration and payroll management and compliance with government regulations or laws. The scope of ERP HCM is on transaction and talent management.

Further, warehouse management systems (WMS) modules track product distribution operations involving finished goods right from their delivery all the way to their storage via replenishment and picking for transportation to fulfill orders. WMS modules similarly aid in synchronizing and controlling inventory.

The other ERP module is the Finance management module which comprises the general ledger functionality for financial management. This module equally manages functions like receivable and payable accounts, non-current assets, financial reports and treasury management.

Order management ERP module is responsible for taking in information from orders area and ensures that orders get filled on the back end. Producers utilize the order management ERP information system to fill orders of products at the lowest possible cost. The order management information system helps in handling processes like automated entry of orders, monitoring and tracking, providing information on the status of orders; cancelled orders, validating orders and credit limit level and verifying duplicate orders.

Project management information system (module) helps organizations in organizing and reviewing information about project costs and timelines. They are tailored toward enterprises that bill customers based on time that employees spend working on individual projects. This module carries out project costing and definition, project accounting, project portfolio management, project billing and resource management.

ERP inventory management modules help in moving finished products through the manufacturing cycle. They are associated with other functions like transportation, logistics management, billing ordering processes and stores management. ERP order management

modules comprise of inventory control functionalities, serial number tracing, printing of bar codes, kitting, stock valuation and stock keeping function. Other ERP modules refer to business functions like human resources management for which a collection of applications for instance payroll are designed to support. Each ERP information system provides various modules.

Hoffman (2008) described ERP information systems as below;

1. Manufacturing and Logistics Module which is a family of applications for production planning, order taking and delivering goods to the clients. The examples of manufacturing and logistics module include planning for production processes, materials management modules, product order entry and processing, stores management, shipping management, project management, machine maintenance, and client service management.

2. Finance Module on the other hand is a family of applications for handling the bookkeeping of a business enterprise. This module comprises of accounts payables and receivables, general ledger, non-current assets, treasury management, and cost management.

3. Human Resources Module is a collection of applications for managing employee-related matters. The module carries out functions like payroll management, employee management activities like recruitment and leave management and human resource services.

2.6 Effects of ERP Adoption on Performance

Wheelen and Hunger (2010) defined performance as the outcome of activity. It is what a company produces for its stakeholders in terms of financial results and operational activities (Adamson & Shine, 2008). Performance in an organization comprises three key areas including: 1. Financial and market areas. This includes revenue results, profits results, market position held, cash-to-cash cycle time, and earnings per share. 2. Customer-focused activities comprising satisfaction level of its customers, performance in its product or service areas. 3. Employee performance comprising of workers' satisfaction, success in realizing company objectives, encompassing the time goods take to reach the market, innovation levels, and flexibility in its productive activities and supply chain processes (Wheelen & Hunger, 2010).

According to Weil (2012), financial performance refers to how effectively an organization utilizes its resources to earn profit and this is measured by the investment returns it realizes, its

liquidity and net profit (Weil, 2012). On their part, Chen and Lin (2011) indicated that financial performance assesses an organization's financial soundness and health and this is done in monetary terms and hence can be applied by a comparison of the performance registered by various companies within a given industry or among various sectors (Chen & Lin, 2011).

The financial performance outcomes are significant to financial experts, sector regulators and investors because it shows profitability levels, liquidity status and investment returns. Organizational stakeholders including company management and investors get apprehensive about financial performance since it has a significant bearing on the company's market value (Gatsi & Gadzo, 2013). An organization's financial performance can be evaluated through accounting-based tests computed from an organization's financial reports including investment return, net and gross profit margins (Nurlaily, 2013).

Weil (2012) stated that ERP information systems facilitate timely and accurate financial information, which is fundamental for the efficient running of a business enterprise. Weil continued to state that provision of the right financial information well in time to the right individual in the company facilitates the decision making process at the right time. According to Surry (2013), profitability refers to the ability of a business enterprise to generate investment returns. The profitability concept is measured through performance indicators like investment returns and return on assets (Burja, 2011).

With regard to the internal processes perspective, Kariuki (2012) indicated that they lead to an organization's financial success and satisfied clients. To realize the goals of an organization and the demands of customers, organizations need to determine their critical business processes on which they must do exceptionally well. The critical business processes identified are supervised to ensure that results will always be excellent.

A company's learning perspective considers how its workers gain knowledge in their careers to enhance the company's performance (Kariuki, 2012). Kariuki continued to opine that the learning dimension looks at the capacity of a company's employees (in terms of their knowledge, understanding, works skills, talents and training), the quality of information structures (in terms of networks, information systems and databases) and the impact of company alignment to its

culture, vision, strategy, leadership, and teamwork, in supporting the achievement of company goals.

ERP information systems link information utilized by the accounting department, operations, distribution activities and HR departments into a seamless computing structure (Motwani, Mirchandani, Madan, & Gunasekaran, 2010). ERP modules specifically take care of the need for linking of application programs for different organization operations like the sales function and accounting activities. Various business applications may utilize a common database that acts as a linking mechanism (Olhager, 2009). ERP information systems are anticipated to offer a seamless linking of operations through different functional divisions with enhanced workflow, standardization of different business activities, enhanced order management, precise accounting of stock, and effective supply chain management (Mabert et al., 2013). ERP modules were created at a period when operations improvement and accuracy of data became key strategic considerations. The importance of supply chain management and the improvement of information technology caused the need for organization-wide integration. ERP systems have become a compulsory need for almost every organization if competitiveness is to be improved (Motwani et al., 2016).

Findings from a study of corporations that have implemented ERP information systems and their effect on management activities confirms various gains and merits that ERPs occasion. The critical and highly-regarded perceived gain is the improved flexibility in information production, enhanced quality of information, improved integration of accounting processes and enhanced decision making due to timely and reliable financial information provided. Findings indicate that business enterprises expect ERP modules to provide increased performance outcomes (Charalambos, 2009).

Daft (2011) indicated that many people regard ERP modules as a dream realized and are largely used with the objective of enhancing effectiveness in an organization's performance. Research also indicate instances where ERP implementation failed leading to poor performance. Kamhawi (2011) however notes that ERP information systems are huge and complex projects that have varied implementation outcomes. Realizing increased efficiencies like improved production,

optimized stock management and information integration capacities are a few of the key gains targeted by ERP adopters.

Given the long time and huge resource investment in ERP programs, Buonanno (2009) assessed the performance effects of ERP in a post adoption situation. Carrying out a study involving Hong Kong based companies, Law and Ngai (2010) revealed that the satisfaction of ERP users and improvements in business processes positively influenced the performance outcomes of organizations. The researchers noted that a positive empirical correlation exists between the strategic purpose behind ERP adoption and firm performance.

2.7 Empirical Literature Review

2.7.1 Effect of ERP on Financial Performance

Some studies indicate that inadequate financial gains are realized upon implementation of ERP systems. This is exemplified by Kennerley and Neely's (2011) study which arrived at the conclusion that specifically, return on sales remained unaltered upon ERP systems implementation. Also, Wieder's (2012) study found that sufficient financial gains of ERP modules were not generated when comparing ERP adopters and non-ERP adopters. According to Nicolaou (2004), the ratio of expenses to sales for ERP users revealed a low ratio than non-users implying an insignificant difference in financial performance. However, Wei (2012) stated that some studies confirmed long-term positive impacts of ERP implementation on financial performance and other studies show that ERP systems can only contribute to maintaining financial performance as it is and does not enhance. This calls for further studies on this area.

Hunton, Lippincott, and Reck (2013) also researched on the financial contribution of ERP software on the financial outcomes of companies and considered ERP users with non-ERP users. The findings of their research showed that return on total assets, investment returns and turnover on assets improved substantially over three years for the ERP users and this is in concurrence with the findings by Poston and Grabsky (2011). Poston and Grabsky researched on the interactive impact of financial health and company size on the performance of ERP system users and discovered that there was a substantial interaction between size and health for the three financial performance measures including investment returns, return on total assets and turnover

on assets. They similarly found that financial performance was positively related with the performance of small companies. Finally, Poston and Grabsky (2011) concluded that in overall, ERP use affords organizations with a financial competitive advantage compared to non ERP adopters.

A study done by Shannak (2016) focused on the effect of ERP systems on performance based on the balanced scorecard performance perspectives. The study reported that ERP systems enhanced organizational effectiveness and efficiency of the ERP implementers and this led to improved customer satisfaction.

In his research, Velcu (2015) established that the ERP software exerts a positive impact on various financial performance indicators namely capital turnover, return on assets (ROA), assets turnover, return on investments (ROI), profit margin and total costs. The same findings were arrived at by de Andres, Lorca and Gayo (2014) who considered 695 leading organizations in Spain on the effect of ERP modules on profitability. They found that organizations that had effectively implemented ERP information systems registered positive return on investments, return on assets, asset turnover and profit margins. The underlying reasoning for this was that ERPs guarantee growth in sales, growth in market share and minimization of operational costs leading to increased profitability for ERP adopting organizations.

In their study, Poston and Grabsky (2011) researched on the effect of ERP software adoption on the performance of firms. They focused on 50 organizations that had implemented the ERP systems over a three year period after implementation of the information system. They focused on costs that they perceived would demonstrate the impact of ERP system implementation on organizational financial performance. The findings indicated a weak and insubstantial positive correlation between ERP information system and the financial performance of the organizations. The authors however indicated a substantial reduction in the proportion of workers to revenue in every one of the three years and a great improvement in the ratio of costs against revenue generated in year three. In overall, the researchers observed that organizations that implemented ERPs registered efficiency benefits in certain areas, but increased costs in other areas appeared to offset such benefits.

2.7.2 Effect of ERPs on Customer satisfaction

Batada and Rahman's (2012) research focused on determining the effect of ERPs information systems on company performance. They established that an improvement in customer satisfaction was registered upon implementing ERP software in the studied firms. Velcu (2015) on his part established that ERP yielded improved customer satisfaction as it enabled fulfillment of customer orders. On their part, Singh and Singh (2013) observed that numerous past empirical studies had found that adoption of ERP systems enhanced customer satisfaction by reducing the amount of time spent on providing service or delivering products to customers. The two researchers stated that utilization of ERP software can yield reduced order cycle periods, reduced client response times and also product delivery speeds and thus facilite overall positive customer satisfaction.

Motwani and Sharma (2016) sought to determine the impact of ERP systems of service companies' performance. The study established that ERP software enabled improvement in service delivery and also improved management of customer life cycle, both of which improved the level of customer satisfaction. This is in concurrence with Ucakturk and Villard (2013) who established that ERP systems implementation enhanced timely delivery of goods and services.

Shannak's (2016) study sought to look at the effect of ERP implementation on the performance of an organization. The researcher based his study on the four perspectives of performance canvased by the balanced scorecard model. Shannak established that adoption of ERP software improved the effectiveness and efficiency of companies that adopted and that this led to enhanced satisfaction of the customers.

From these reviewed studies, the researcher concludes that ERP adoption enables in-time delivery of goods to customers and improves efficiency leading to satisfied customers and hence reinforcing customer loyalty which in turn up scales firm financial performance.

2.7.3 Effect of ERP on Internal Processes

Wanyoike (2017) did a study to establish the impact of ERP systems on the internal processes of a company. It was found that ERP systems exerted a positive influence on the evaluation process, information access, the human resource management processes, internal messaging and accounting processes.

Giménez and Lourenço (2011) in their study of supply chain management in manufacturing firms found that use of ERP in managing supply chain improved the competitiveness of organizations due to streamlined internal processes, continuous learning, which led to effective customer service. They observed that through ERP adoption, organizations enhanced their supply chain operations especially the upstream supply chain processes which led to customer satisfaction. Done (2011) also found that use of ERP enhanced efficiency of information transfer, timeliness of information availability, relevance of business information, openness and transparency in the supply chain. Done concluded that these benefits were realized due to effective internal processes and accumulated learning in ERP use through training and experience in the use of the software.

In a study by Njihia and Mwirigi (2014) on the significance of ERP systems in improving the performance of manufacturing companies, it was established that ERP usage enhanced company operations and processes that include marketing activities, quality control, HR management, sales activities, billing and manufacturing.

In their review of literature on ERP use, Addo-Tenkorang and Helop (2011) established that researchers were in agreement that ERP systems enabled organizations that adopted the software to integrate a range of business activities for optimum performance outcomes. This is evidenced in a research by Spathis and Constantinides (2014) who established that ERP integrated data and offered an avenue for sharing information Company wide and also automated the business operations to facilitate real-time information. This implies that ERP software enables different business activities in the day to day activities of a business enterprise and also improved the financial performance (Njihia & Mwirigi, 2014).

Gartner's (2010) study similarly revealed that ERP systems provided business enterprises with the capacity to improve their businesses operations through linking of all the processes and functional divisions of an enterprise. In a research focussing on the influence of ERP systems on

company processes in an Australian enterprise, it was established that the ERP modules adopted enhanced the decision making effectiveness and equally improved transaction operations of companies that had adopted the ERP information systems (Ucakturk & Villard, 2013).

In another study, Ucakturk and Villard (2013) established that the ERP information system enhanced the communication processes by increasing the availability of real time information for organizations to facilitate decision making. The authors concluded that ERPs provided critical data for the development of products and services and supported important operational strategies including those for making decisions. Ponorica (2013) made a similar finding that ERP software facilitated information consistency and accuracy and therefore led to superior management decisions. Equally, Lecic and Kupusinac's (2013) study revealed that adoption of ERP information systems served a key role as a system for supporting decision making. The two authors concluded that managers of a company can conduct decision making processes much quickly and with minimal mistakes since ERP renders information visibility throughout the company.

The researcher therefore concludes that ERP adoption is important in streamlining and integrating internal business processes as this enhances communication with all stakeholders in making available information for timely decision making and seamless supply chain processes for optimal performance.

2.7.4 Effect of ERP on Organizational Learning and Innovation

In regard to how ERP information systems influence the learning processes of a business enterprise, Wanyoike (2017) determined that ERPs positively impacted companies' learning processes. Wanyoike further posited that decision-making processes, productivity, performance of business activities, management control and client satisfaction were positively impacted by implementation of ERP systems in organizations. It was similarly established that 87.9% of the study respondents viewed use of ERP software to be beneficial in making decisions as opposed to 12.1% respondents who were not sure. These findings are consistent with Kelton's (2010) findings which indicated that ERP software adoption impacted decision-making processes.

Kariuki (2012) examined the impact of ERPs on organizational competitiveness. The study examined how firms could utilize ERP software to effect innovative and strategic changes in the banking industry. The regression result showed that ERPs led to improvement in skills and knowledge through experience in using the systems and training for optimal use. As a consequence, the learning led to service quality and innovative and strategic change which created value and organizational competitiveness. Consistent with Kariuki's (2012) study, Ucakturk and Villard (2013) equally revealed that use of ERPs makes available critical data that facilitates new product and service development and also enables formulation of business strategies. Similarly, ERP software use resulted in timely and accurate data that strengthened organizational decision-making (Al-Tarawne, 2012).

These empirical studies brought to perspective, the researcher concludes that ERP adoption contributes to enhancement of organizational skills, knowledge and experience that is imperative for continuous improvement in operational activities, product and service development and quality in products and service provision.

2.8 Research Gap

The foregoing empirical literature review has revealed that through research, there largely exists a positive relationship between ERP systems adoption and financial performance, learning and innovation, internal processes and customers satisfaction. However, none of the studies reviewed focused on the retail sector where profit margins are thin, performance driven by economies of scale making customer retention and market expansion key drivers of growth. This research was premised on this gap and sought to establish how ERP software adoption impacted financial performance, organizational learning and innovation, internal processes and customer satisfaction of retail supermarket stores with the application of the Kaplan and Norton (2007) matrix as the measures of performance.

2.9 Conceptual Framework

A conceptual framework refers to a diagrammatic demonstration of the relationship that exists between the variables being studied. Cannoway and Powell (2010) defined independent variables

as those that can be altered by the researcher in order establish how it affects the dependent variable. A dependent variable on the other hand refers to the changes that are influenced by the independent variable. The independent variable in this study is adoption of innovation (ERP), while the dependent variables are organizational performance measures as put forth by Kaplan and Norton (2004).

Figure 2.1 demonstrates the study's conceptual framework which shows the relationship between the independent and dependent variables. Organisational performance will be measured using Kaplan and Norton's (2007) Balance Score Card (BSC) that is a four factor matrix. The balanced score card attempts to offer solutions to four questions that concern business enterprises and include how customers' view an organization, the business operations or processes that an enterprise must we excel at, Whether it is possible to consistently improve and add value and how an organization should relate with its shareholders. These four questions have consequently led to four performance indicators that can be applied to evaluate a company's financial performance from a BSC model perspective namely client satisfaction; innovative capacity, business growth and learning dimensions, internal business operations and financial performance perspective. ERP system implementation is considered by the organization, product users and suppliers as a strategic niche that is able to provide positive outcomes to all the four performance areas.

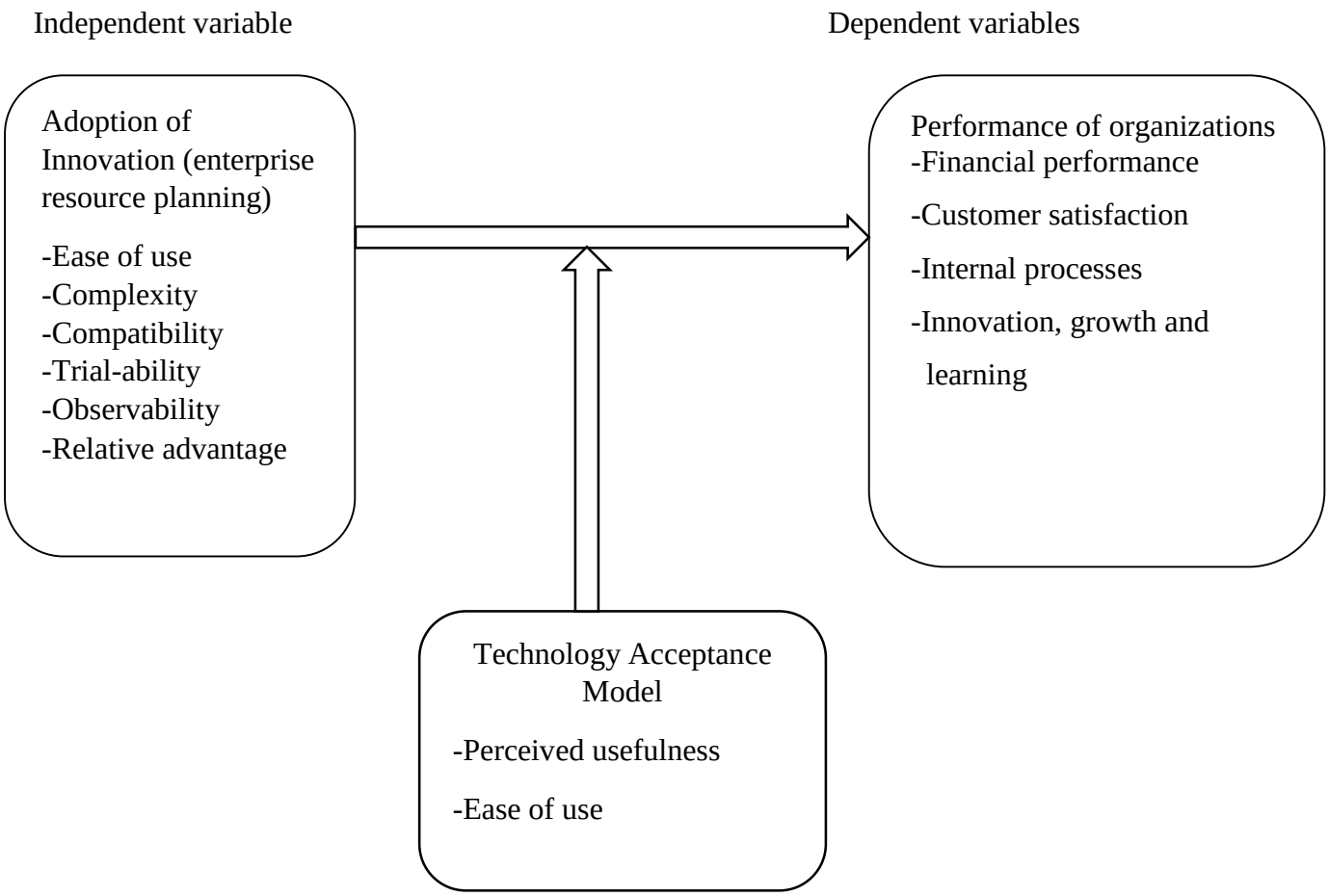

Figure 2. 1: Conceptual Framework
Source: Researcher (2020)

2.91 Operationalization of the Variables

In this study, ERP adoption was the independent variables. For the purpose of this study, ERP adoption is measured by the relative advantages that it brought to the major supermarket that were under study. To adopt it, the supermarket stores must have perceived ERP as more beneficial than the systems they used before. This advantages are in terms of being compatible with the values of the supermarkets and hence would not derail them from stakeholder norms and principles, including national legal law requirements. Also, the ERP modules adopted must be easy to understand and to use by the employees of the supermarkets given the digital skills they held. Thirdly, the ERP modules adopted by the supermarkets are those that have been tried

and found to address performance issues that the supermarkets faced and could build their capacity where any was lacking. Last but not least, ERP adoption by the supermarkets is based on demonstrable results out of its implementation. This is because, the easier it is for employees or the supermarkets to see performance gains of the ERP modules, the more likely they are to adopt them. Adoption of the ERP modules is moderated by the technology acceptance theory that guided this study which states the major determinants of whether an organization adopts information technologies, (which in this study is the ERP software), is based on how it is perceived to be useful and its ability to be easily used.

The dependent variables in this study were the performance gains that the supermarkets achieved by adopting the ERP technology. This is measured by the benefits of using the ERP modules including improved ffinancial performance, customer satisfaction, streamlined internal processes and learning and growth in terms of the skills, knowledge and experience that is key for continuous improvement in operational activities, strategy development, and quality of product and service provided.

2.10 Summary

In this chapter, the relevant literature on matters relating to ERP implementation and benefits have been examined. It has also delved into the theories underpinning the study, the general and empirical studies related to adoption and use of ERP information systems and their impact on performance. The chapter has also identified the research gap based on previous studies and presented the conceptual framework for the study that has graphically illustrated the variables. Chapter three of the study details the research approaches used in carrying out the study.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

Research methodology is defined as an organized technique through which answers to a research problem are arrived at. It concentrates on what the research process is and the tools and procedures that are used by a researcher (Kothari, 2014). In this chapter, the research approaches that will be applied in data collection include research design, target population, the sampling design, data collection instruments and data analysis and ethical considerations.

3.2 Research Design

Creswell (2014) distinguishes two approaches to research namely qualitative research and quantitative research. He described qualitative research as one that comprises the research approaches, tests and measures that produces data that is non- numerical in kind, while quantitative research is one that comprises research approaches, tests and measures that produces data in numerical form.

A research design is an approach of proceeding through the research process in order to collect and analyze data in a way that effectively achieves research objectives (Chandran, 2004). This research employed the quantitative and descriptive research method. Descriptive research design refers to the type of research that focuses on collecting information on current state of a phenomenon (Rahi, 2017). It determines and reports the situation as it is and includes possible behavior, attitudes, values and characteristics. The descriptive research approach was used to describe the situation as it is at the retail firms that were surveyed.

3.3 Population of Study

A research population describes all the groups of people, cases, or events, that are of interest to the researcher in terms of answering the research question (Sekaran & Bougie, 2016). The target population on the other hand is the specific group of individuals or objects which are being examined and are homogenous, that is the one from which data is obtained for the purpose of

answering the research questions. This study's population included all employees working in major retail supermarket stores in Nairobi County. However, the study targeted managers and those that are knowledgeable of implementation and use of ERPs from the Information communication and Technology, supply chain, finance, stores and Human resource departments of Naivas Limited, Mulleys Supermarkets, Uchumi Supermarkets Limited and Cleanshelf supermarket. This is because of their direct involvement in ERP system implementation, management and operation. The target population was 391 staff spread across the aforementioned departments.

3.4 Sampling Design

The process of sampling refers to the research activity comprising of selecting the respondents of a study in a manner that ensures representativeness of the entire population (Cooper & Schindler, 2014). The authors further asserted that the intention of sampling is to settle on the number of cases, subjects or people that are representative of the entire population so as to enable valid conclusions about the whole population to be drawn.

This study used purposive sampling approach. The approach involves choosing certain cases or individuals based on a specific objective rather than randomly to form a sample size (Kothari, 2014). This helps the researcher to target purposefully only respondents that have the required information or are qualified to provide reliable information during data collection in respect of the study's objectives. The respondents were selected based on these considerations.

In this research, purposive sampling comprised respondents that had the capacity to offer reliable information based on their knowledge or experience in implementing ERPs in the major supermarket stores in Nairobi. They included ICT, Finance, Supply chain, Human resource, stores directors from the five supermarkets and other knowledgeable employees. The process of sampling resulted in thirty respondents as the sample size as depicted in Table 3.1.

Table 3. 1: Sampling Frame

Category	Number of respondents from each supermarket	No of supermarkets	Total
ICT Directors	1	5	5
Finance Directors	1	5	5
Supply chain Directors	1	5	5
HR Directors	1	5	5
Stores Directors	1	5	5
Other Staff	1	5	5
Sample Size			30

3.5 Data Collection

According to Kothari (2014), research data can be obtained with the usage of various tools including observation, in-depth interviews, questionnaires, and focus group discussions. The questionnaire method was adopted in data collection. Chandran (2004) recommended questionnaires because, among other reasons, they guarantee a greater extent of information standardization and use of generalized information amongst any population.

Cannoway and Powell (2010) argued that questionnaires tend to encourage accurate answers from respondents and thereby eliminates bias. In this study, structured and pre-tested questionnaires were employed in data collection. The questionnaires were structured in the sense that they used the Likert scale questions. Likert scale questions are quantitative in nature and are leading questions that guide respondents on the required responses. They are effective because they ensure that the respondents stick to the research issue by providing appropriate responses (Cannoway & Powell, 2010). The questionnaire scale was therefore developed according to the theme and objectives of the study. The questionnaire was developed according to the 5- point Likert Scale format, which is an interval scale that has five anchors that are respectively: strongly disagree (SD), disagree (D), neutral (N), agree (A), and strongly agree (SA). This Likert measures the degree of agreement or disagreement. Likert scale is suitable since it enables measurement of facts, attitudes values and behaviors (Neuman, 2014).

According to Orodho (2012), pretesting is a smaller version of a larger study that is conducted on different respondents but having characteristics like those of the actual study. This is done to ensure reliability of the questionnaire by clarifying the questions in the questionnaires so that they can be interpreted the same way by all the respondents and hence able to meet the objectives of the study (Monet & Dejong, 2010). The questions were classified into three. The first classification collected data regarding the respondents' characteristics, the second part covered ERP modules adopted and the last part examined the effects of ERPs adoption on firm performance.

Data collection procedures describe the systematic process adopted to guarantee that data collection instruments are correctly and efficiently applied (Bryman & Bell, 2011). The authors emphasized the importance of addressing pre-field work procedures, fieldwork activities and post fieldwork activities. The researcher planned pre-field activities, fieldwork activities and post-field work activities so as to guarantee appropriate and satisfactory data collection process.

Regarding the pre-field work activities, the researcher obtained a letter of introduction from Strathmore University Business School and a research permit from the National Commission for Science, Technology and Innovation (NACOSTI) to enable him collect data from the supermarket stores. Fieldwork activities were planned to ensure timely distribution of questionnaires as well as immediate collection of filled up questionnaires and their subsequent submission to the researcher. The researcher reviewed all submitted, filled-in questionnaires to identify and eliminate those that are partially filled before the beginning of the analysis phase.

3.6 Data Analysis

LeCompte and Schenshul (2013) posited that data analysis occurs after the completion of data collection. The author continued to state that data analysis starts with data cleaning, where data is checked for consistency, after which it is coded and entered into statistical software. When data has been entered, the next step is data processing which involves carrying out different statistical tests in the pursuit of answers to the research questions.

The data analysis research procedure was based on the objectives of the study. The collected data was processed with the use of the Statistical Package for Social Sciences (SPSS). The process of

analyzing quantitative data from closed-ended questions began by first coding all the data by allocating them numeric codes, a procedure that simplified its capturing. The codes were then entered into SPSS and then analyzed. Qualitative data analysis was effected by categorizing the qualitative data into themes, which were then assigned subtitles. This was followed by the procedure of coding the sub-titles and the codes were also entered into SPSS. Descriptive statistics in form of frequency tables, charts and figures were used to illustrate the analysis outcomes.

3.7 Reliability and Validity Test

The accuracy of the information obtained from the data collection procedure is dependent on the suitability of data collection tools in terms of reliability, validity and objectivity.

3.7.1 Reliability

The concept of reliability in reference to research tools measures the extent to which the tools produce consistent findings with repeated tests (Cooper & Schindler, 2014). Computation of Cronbach's alpha is employed in internal reliability testing (Saunders, Lewis, & Thornhill, 2016). In this study, reliability was assured by subjecting the questionnaire to two respondents from different supermarket stores prior to carrying out the survey. The researcher asked the respondents to critique and provide feedback to assist in the tool enhancement prior to administering to the 30 respondents.

3.7.2 Validity

Robinson (2007) stated that validity in reference to the research tools is the extent to which data analysis findings actually represent the research area. The researcher relied on expert opinions from two of the major supermarket stores. Also, the formulation of questions in the research instrument was carried out paying attention to the end results expected which is largely dependent on the research questions. According to Robinson (2007), a research instrument is valid when it is able to accurately measure what it is intended to measure. Upon administration of questionnaires, the information obtained should reflect the variables being studied.

3.8 Ethical Considerations

The following ethical principles were adhered to.

Approval for the study was secured from the management of the retail supermarkets. Written and signed informed consent was also obtained from all the respondents chosen to participate in the study. The researcher also obtained authority to carry out the study from the National Commission for Science, Technology and Innovation (NACOSTI).

Confidentiality of the information to be provided and anonymity of the respondents was assured since participant names were not required, instead, codes were assigned to the questionnaires. The researcher acknowledged the thoughts, ideas, concepts and theories of other authors during the research work through proper referencing. The intention and objectives of the study were explained to the respondents and their consent secured to enable their participation in the research. Accuracy in the process of data collection, its analysis, interpretation and findings reporting was guaranteed.

3.9 Summary

This chapter has given an account of the research design and methodology that was used to carry out the study in order to assess status as is at the retail supermarket stores that have adopted ERP systems concerning the effects of ERPs adoption on firm performance. The population consisted of major supermarket stores in Nairobi County, with a sample drawn from five departments across the four supermarket stores surveyed. Data was then analyzed using SPSS. Finally, ethical considerations were observed during the study.

CHAPTER FOUR: PRESENTATION OF RESEARCH FINDINGS

4.1 Introduction

This chapter presents the results of data analysis from questionnaires. It comprises of background information, the ERP modules adopted in various major supermarket stores in Nairobi and their effects on firm performance. Graphs, tables and figures are used to present data.

4.1.1 Response Rate

Thirty research questionnaires were issued to respondents in the selected supermarket stores in Nairobi. Twenty-five questionnaires were filled and returned. This resulted in a response rate of 83.3%, which was satisfactory and representative in making conclusions of the study. This complied with Mugenda and Mugenda (2012) who suggested that for generalization, a response rate of 50% is adequate for analysis and reporting, 60% is good, and a response rate of 70% and more is excellent. Therefore, the study response rate was considered as excellent. This response rate can be attributed to data collection procedures, follow-ups and goodwill from those charged with managing administration of questionnaires in the firms sampled. The 26.7% questionnaires that were not returned could be due to unavailability and or busy schedules of targeted respondents.

Table 4.1: Response Rate

QUESTIONNAIRE	NUMBER	PERCENTAGE
Total number of administered questionnaires	30	100%
Total number of duly-filled and returned questionnaires	25	83.30%
Total number un returned questionnaires	5	26.70%

4.2 Background Information

4.2.1 Supermarket Name

The respondents were asked to indicate the name of the company, the findings of which are illustrated in Table 4.2. It's worth noting that two of the major supermarkets (Tuskys and Carrefour Supermarkets) whose participation in the study was sought declined to participate.

Table 4.2: Name of the Supermarket

	Frequency	Percent
Cleanshelf Supermarket	6	24
Mulleys Supermarket	8	32
Naivas Ltd	8	32
Uchumi Supermarkets Ltd	3	12
Total	25	100

Findings indicated that the majority of the respondents comprised of staff from Mulleys and Naivas Supermarkets who tied at 8(32%), while 6(24%) of the respondents were from Cleanshelf Supermarket and 3(12%) of the respondents were from Uchumi Supermarkets Ltd. The findings imply that the study was representative of the target population.

4.2.2 Gender Distribution of Respondents

The researcher sought to know the gender of the respondents and the findings are presented in Figure 4.1.

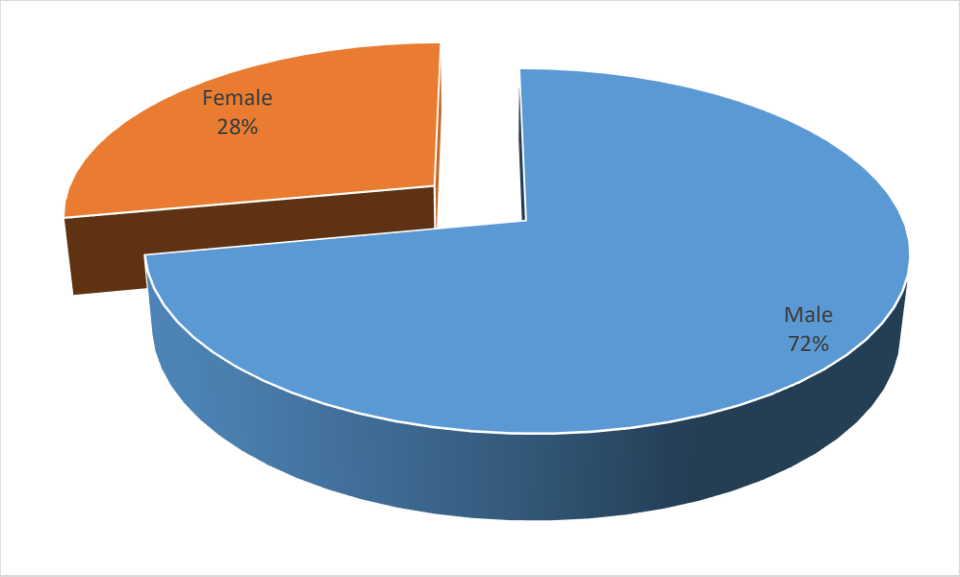

Figure 4. 1: Gender Distribution of Respondents

Results in Figure 4.1 show that 18(72%) of the respondents were male, while 7(28%) were female clearly indicating the dominance of the male gender.

4.2.3 Age bracket

The study assessed the age distribution of the respondents working in various departments of the supermarkets. Table 4.3 shows the findings.

Table 4. 1: Distribution of respondents by age

	Frequency	Percent
Up to 25 years	1	4
26-35 years	13	52
36-45 years	10	40
46-55 years	1	4
Total	25	100

Findings indicated that 13(52%) of the respondents were between 26-35 years. Those in the age bracket of 36-45 years were 10(40%), while only 1(4%) was below the age of 25 years and likewise between the age of 46-55 years. These findings indicate that a majority of the respondents were young people of below 45 years, who are generally technology savvy and therefore have capacity to implement technology-powered solutions to enable the supermarkets to improve their performance.

4.2.4 Highest level of education

This section required respondents to indicate their highest level of qualifications, findings of which are presented in Figure 4.2.

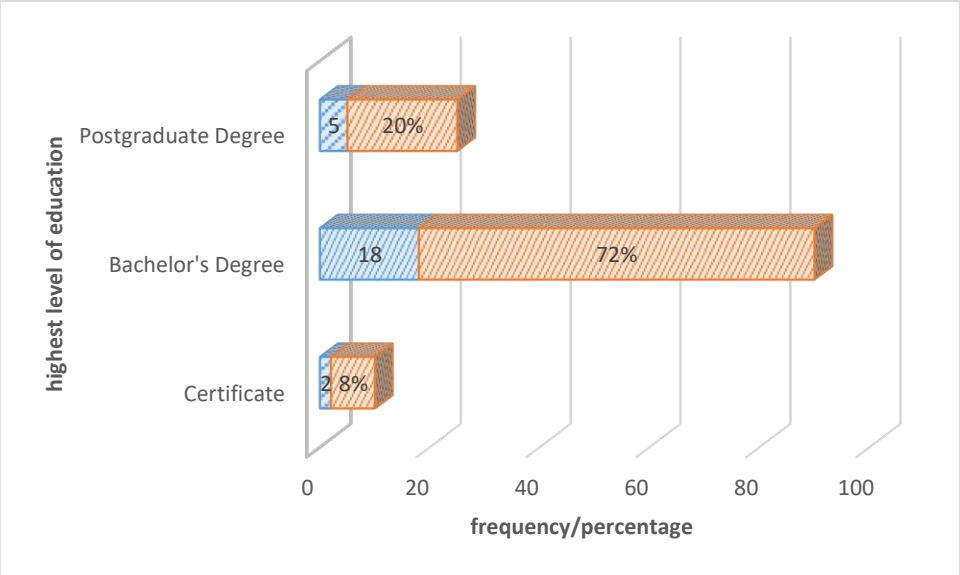

Figure 4.2: Respondents' highest level of education

The findings show that 18(72%) of the respondents had a bachelor's degree, 5(20%) had postgraduate degrees whereas 2(8%) were holders of certificate qualifications. These findings could imply that all the respondents had requisite knowledge and skills to implement Enterprise Resource Planning software since matters to do with ERPs are technical and staff in the strategic departments where business growth strategies are formulated and implemented must have the requisite qualifications to deliver.

4.2.5 Respondents' Departments

The researcher sought to know the departments in which the respondents served. Table 4.2 shows the findings

Table 4. 2: Respondents' Departments

Department	Frequency	Percent
ICT	5	20
Finance	13	52
Supply Chain Management	3	12
Stores and Warehousing	2	8
Human Resource Management	2	8
Total	25	100

Findings indicated that 13(52%) of the respondents worked in the finance department, 5(20%) in ICT department, 3(12%) in supply chain management department, while those who served in stores and warehousing and human resource management departments tied at 2(8%). This indicates that all the target departments that were involved with ERP implementation were represented and hence supplied reliable responses that met the objectives of the study.

4.2.6 Length of time worked in the department

Respondents were to indicate the length of time they had worked in their respective departments in the respondent supermarkets. Table 4.3 shows the findings.

Table 4. 3: Length of time respondents worked in the respective departments

Time	Frequency	Percent
Up to 1 year	4	16
1-3 years	6	24
4-6 years	3	12
7-10 years	6	24
Over 10 years	6	24
Total	25	100

Table 4.4 indicates that 4(16%) of the respondents had worked for one year and below, 6(24%) had worked for 1-3 years, 3(12%) for 4-6 years, 6(24%) for 7-10 years, while 6(24%) had worked for over10 years. The findings demonstrate that all the respondents had the requisite experience in their departments and hence understood the adoption and utilization of ERP software in their operations and performance of supermarkets. This means that they were in a position to provide reliable responses for the study.

4.2.7 Position in the organization

The study investigated the positions respondents held in their respective supermarket stores. Table 4.4 shows the findings.

Table 4. 4: Position held by respondents

Position	Frequency	Percent
ICT Director/Manager	2	8
Human Resource Director/Manager	1	4
Finance Director/Manager	2	8
Supply Chain Director/Manager	1	4
Stores Director/Manager	3	12
Finance Assistant	1	4
Senior accountant	7	28
Procurement officer	1	4
Payroll Accountant	1	4
Assistant accountant	2	8
ICT support	1	4
Commercial Accountant	1	4
Human Resource Assistant	1	4
No response	1	4
Total	25	100

Findings indicated that 7(28%) of the respondents were senior accountants, 3(12%) were stores directors/managers, those who were ICT directors/managers, finance directors/managers and assistant accountants had a tie at 2(8%). Further, those who were procurement officers, finance assistants, supply chain directors, ICT support, human resource assistants were all represented at 1(4%). These findings illustrate that all the respondents held positions that were critical in the implementation of ERP.

4.2.8 Respondents' Duration in their Current Positions

The study sought to find out the duration of service of the respondents in their present positions, findings of which are presented in Figure 4.3.

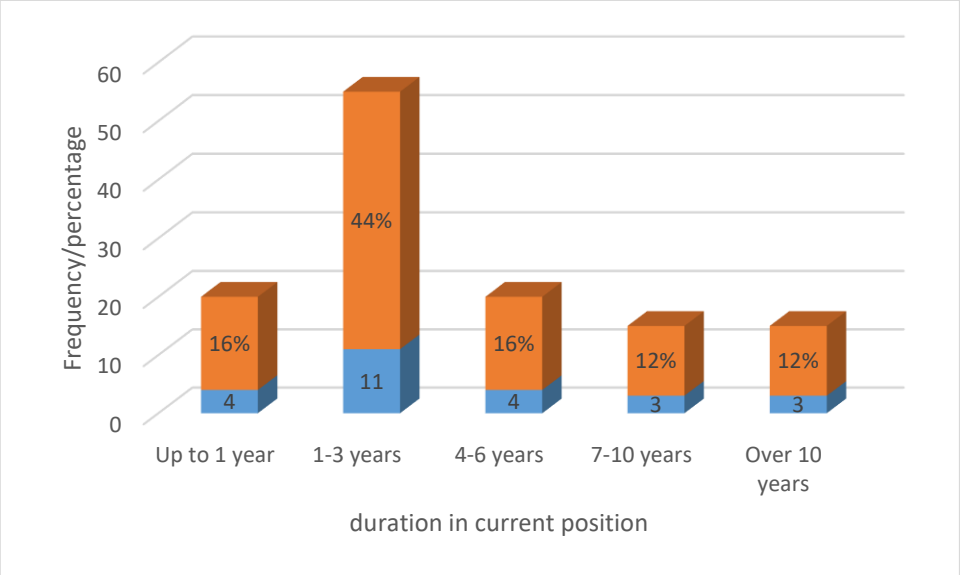

Figure 4.3: Respondents' Duration in their current positions

The findings in Figure 4.3 indicate that 11(44%) of the respondents had worked in their current positions for 1-3 years, 4(16%) had held their present positions for 1 year, another 4(16%) had served for 4-6 years, while 3(12%) had held their current positions for 7-10 years and another 3(12%) for over 10 years. This implies that most of the respondents had the necessary skills and knowledge about ERP usage and organization's performance of the respective selected supermarket stores in Nairobi County.

4.3 The ERP Modules adopted

4.3.1 ERP modules adopted by the Supermarkets

The researcher sought to know the kind of modules adopted by the respondent supermarket stores in Nairobi County, results are presented in table 4.5 below.

Table 4. 5: ERPs adopted by firms

ERP module	Frequency	Percent
Finance and Accounting, Inventory Management, Purchasing, Assets, Banking, Manufacturing, Sales, Loyalty Programme, Human Resource	1	4
Financial Management, Fixed assets, Inventory Management, Human Resources & Purchasing Modules	1	4
Human Resource Module, Inventory Module, Sales & Marketing Module, Purchase Module, Finance & Accounting Modules	1	4
Human Resource, Sales & Marketing, Purchase	1	4
Inventory, Human Resources, Fixed Assets, Purchasing, Finance & Accounting, Fixed Assets	1	4
Not indicated	20	80

Findings in Table 4.5 indicate that 5(20%) of the respondents had adopted ERP modules ranging from Finance and Accounting, Inventory management, Purchasing, Assets, Banking, Manufacturing, Sales, Loyalty Programme, Human Resources, Financial Management, Sales & Marketing whereas 20(80%) did not indicate the ERP modules adopted by their firms but instead provided the different types of ERP software as depicted in table 4.6 below.

Table 4. 6: ERP software adopted by firms

ERP module	Frequency	Percent
Aspire Software	6	24
Microsoft Dynamics Ax	7	28
Storeline and Lawson	2	8
Not indicated	10	40

Findings in Table 4.6 above show that 6(24%) of respondents had their supermarket using Aspire software, 7(28%) were on Microsoft Dynamics Ax while 2(8%) had their firm on Storeline and Lawson. 10(40%) of respondents did not indicate the type of ERP software in use at their Supermarket store.

4.3.2 Year in which supermarkets completed ERP implementation

In evaluating the usage of ERP software modules by the major supermarket stores, it was important to find out the year in which implementation of ERPs was completed. Table 4.7 shows the findings

Table 4. 7: Year in which ERP implementation was completed

Year	Frequency	Percent
No response	1	4
2004	3	12
2005	1	4
2014	4	16
2016	10	40
2020	6	24
Total	25	100

Findings indicated that 10(40%) of the respondents indicated that they completed their ERP implementation in the year 2016, 6(24%) in 2020, 4(16%) completed in 2014, 3(12%) completed in 2004 and 1(4%) completed in 2005.

4.3.3 Features of ERP modules adopted

The study sought to assess the features of the ERP modules used by the firm in terms of data accuracy, flexibility, reliability, data integration, ability to customize, ease to use and learn and ability to meet user requirements. Table 4.8 shows the findings.

Table 4. 8: Features of ERP modules adopted

Statement		Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Our ERP provides accurate data	Frequency	0	0	0	17	8
	%	0	0	0	68	32
Our ERP is flexible	Frequency	0	2	2	9	12
	%	0	8	8	36	48
Our ERP is easy to use	Frequency	0	0	1	13	11
	%	0	0	4	52	44
Our ERP is easy to learn	Frequency	0	1	4	8	12
	%	0	4	16	32	48
Our ERP is reliable	Frequency	0	1	0	15	9
	%	0	4	0	60	36
Our ERP allows data integration	Frequency	0	0	3	9	13
	%	0	0	12	36	52
Our ERP is efficient	Frequency	0	1	3	14	7
	%	0	4	12	56	28
Our ERP allows for customization	Frequency	0	1	4	10	10
	%	0	4	16	40	40
Our ERP meets user requirements	Frequency	0	0	2	14	9
	%	0	0	8	56	36

Findings revealed that all the respondents affirmed that their ERP provided accurate data, 17(68%) agreed while 8(32%) strongly agreed. About whether their ERP was flexible, 12(48%) strongly agreed, 9(36%) agreed and 2(8%) each were neutral or disagreed. Also, 24(96%) indicated that their ERP was easy to use with 1(4%) remaining neutral to the statement while none disagreed. Further, 20(80%) of the respondents agreed or strongly agreed that their ERP was easy to learn with 4(16%) remaining neutral and 1(4%) disagreeing.

In regard to whether their ERP was reliable, 24(96%) of the respondents were in agreement, while 1(4%) disagreed. Similarly, 22(88%) of the respondents affirmed that their ERP allowed data integration, with 3(12%) remaining neutral. Also, 21(84%) of the respondents agreed and strongly agreed that their ERP was efficient, 3(12%) were neutral to the statement and 1(4%) disagreed. Further, 20(80%) of the respondents affirmed that their ERP was customizable, 4(16%) were neutral and 1(4%) disagreed. Regarding whether their ERP met user requirements,

23(92%) of the respondents agreed and strongly agreed to the statement, while 2(8%) were neutral. These results indicated that the ERPs used by different firms were suitable thereby presenting a high possibility of meeting their goals and objectives.

The researcher further weighted respondent responses to arrive at a general response attributable to all using Likert scale – Strongly disagree (1), Disagree (2), Neutral (3), Agree (4) and Strongly agree (5). The findings are indicated in the table 4.9.

Table 4. 9: Features of ERP modules adopted (Weighted Average)

Statement	Weighted Average
Our ERP provides accurate data	4.4
Our ERP is flexible	4.2
Our ERP is easy to use	4.4
Our ERP is easy to learn	4.2
Our ERP is reliable	4.3
Our ERP allows data integration	4.4
Our ERP is efficient	4.1
Our ERP allows for customization	4.2
Our ERP meets user requirements	4.3

Findings from table 4.9 above give an average weight ranging from 4.1 to 4.4 for each and every feature of the ERP software adoption. Using the Likert scale, this implies all the respondents agree that their ERP software provides accurate data, is flexible, easy to use, easy to learn,

reliable, allows data integration, efficient, allows customization and meets user requirements. It can therefore be safely concluded that all the respondent firms made correct decisions in the software selection process as far as key software features is concerned.

4.4 ERP software adoption and financial performance

4.4.1 The effects of ERP software adoption on financial performance

The respondents were to indicate their opinion on the extent of agreement to various statements of financial performance as a result of adoption of ERP software. Table 4.10 indicates the findings.

Table 4. 10: Effects of ERP software adoption on financial performance

Statement		Strongly disagree	disagree	neutral	agree	strongly agree
Our company has experienced stronger growth in revenue	Frequency	0	0	2	16	7
	%	0	0	8	64	28
Our company has gained a greater market share	Frequency	0	1	1	13	10
	%	0	4	4	52	40
Our company has experienced growth in profitability	Frequency	0	0	1	18	6
	%	0	0	4	72	24
The ERP has lowered transaction costs	Frequency	0	2	3	16	4
	%	0	8	12	64	16
ERP has led to effectiveness in our supply chain processes	Frequency	0	1	3	14	7
	%	0	4	12	56	28
The ERP software supports our business goals	Frequency	0	0	2	12	11
	%	0	0	8	48	44

Findings in Table 4.10 indicate that 23(92%) of the respondents agreed or strongly agreed that their company had experienced stronger growth in revenue, while 2(8%) of the respondents remained neutral. This could imply that ERP adoption had contributed to increase in sales. In regard to whether the supermarkets had gained a greater market share as a result of adopting ERP software, 23(92%) of the respondents were in agreement, while those who were neutral and

disagreed tied at 1(4%). This implies that ERP adoption helped the supermarkets to have a competitive edge over the competitors. Further, 24(96%) of the respondents were in agreement that their supermarket had experienced growth in profitability with 1(4%) being neutral. Similarly, 20(80%) of the respondents agreed or strongly agreed that the ERP had lowered transaction costs, while 3(12%) and 2(8%) were neutral and disagreed respectively over the same. Regarding whether ERP had led to effectiveness in the supply chain processes, 21(84%) of the respondents agreed or strongly agreed, 3(12%) were neutral and 1(4%) disagreed. Lastly, 23(92%) of the respondents agreed or strongly agreed that ERP software adoption supported their business goals, while 2(8%) were neutral. These findings imply that ERP adoption improved the financial performance of the supermarkets.

The study also weighted the responses to arrive at the general opinion of all respondents with regard to individual components of measure of financial performance. Likert scale – Strongly disagree (1), Disagree (2), Neutral (3), Agree (4) and Strongly agree (5) was used. The findings are indicated in Table 4.11 below

Table 4. 11: Weighted average effects of ERP software adoption on financial performance

Statement	Weighted Average
Our company has experienced stronger growth in revenue	4.2
Our company has gained a greater market share	4.3
Our company has experienced growth in profitability	4.2
The ERP has lowered transaction costs	3.9
ERP has led to effectiveness in our supply chain processes	4.1
The ERP software supports our business goals	4.4

Using the Likert scale, findings in Table 4.11 above show that respondents agree ERP software adoption has resulted in growth in revenue, greater market share, growth in profitability, lower transaction costs, effectiveness in supply chain processes and greater support to the Supermarket stores business goals.

Further, the study sought to assess the percentage increment in performance objectives and goals due to ERP implementation. Table 4.12 illustrates the findings.

Table 4. 12: Percentage Increment in performance objectives and goals

Growth in Revenue	% increment	5	10	20	25	30	35	40	50	60	70	80
	N	3	4	1	1	3	1	2	1	1	2	1
	Percent	12	16	4	4	12	4	8	4	4	8	4
Market share	% increment	5	10	15	25	30	40	60	80	85		
	N	2	4	2	1	3	3	3	1	1		
	Percent	8	16	8	4	12	12	12	4	4		
Increased profitability	% increment	5	10	15	20	22	35	40	50	55	70	90
	N	2	3	2	3	2	1	2	1	1	2	1
	Percent	8	12	8	12	8	4	8	4	4	8	4
Lower transaction costs	% increment	3	5	8	10	15	20	25	50	55	70	80
	N	1	1	2	5	4	1	1	2	1	1	1
	Percent	4	4	8	20	16	4	4	8	4	4	4

Findings in Table 4.12 show that 4(16%) indicated a 10% increment in growth in revenue due to adoption of ERPs. Those who indicated a 5% and 35% increment had a tie at 3(12%), those who indicated a 40% and 70% increment had a tie at 2(8%) and those who indicated a 20%, 25%, 35%, 50%, 60% and 80% increment in growth in revenue had a tie at 1(4%). This implies that adoption of ERPs by the firms led to a general growth in revenue.

Respondents totaling 4(16%) indicated that adoption of ERPs had increased their market share by 10%. Those who indicated 5% and 15% increment in market share tied at 2(8%), those who indicated market share increment of 30%, 40% and 60% had a tie at 3(12%) and those who indicated an increment of 80% and 85% tied at 1(4%). This is a clear indication that adoption and use of ERPs led to greater market penetration. This explains the reliability, flexibility, effectiveness in supply chain processes which in turn leads to greater customer retention and satisfaction and increased service/product performance and availability.

In regard to profitability, respondents who indicated that adoption of ERPs had increased profitability by 10% and 20% had a tie at 3(12%), those who indicated 5%, 15%, 22% and 70% profitability had a tie at 2(8%) while those who indicated 35%, 50%, 55% and 90% increase in profitability had a tie at 1(4%). This implied that adoption of ERPs resulted to increase in return on equity (ROE), return on assets (ROA), return on investment (ROI) and increased profit margins.

Respondents totaling 5(20%) indicated that adoption of ERPs lowered transaction costs by 10%, 4(16%) indicated 15% lower transaction costs. Those who indicated 8% and 50% reduction in transaction costs had a tie at 2(8%) and those indicated of 3%, 5%, 20%, 25%, 55%, 70% and 80% lower transaction costs tied at 1(4%). This indicates that adoption of ERPs leads to a better costs management environment.

4.4.2 The effects of ERP software adoption on growth and learning

Growth and learning in any organization is vital in building capacity of employees through improvement of talent, skills, knowledge and training to aid in accomplishing organizational objectives. Respondents were asked to indicate their opinion and perception of the effect of ERP adoption on employees training and development, decision-making, task performance and communication in their Supermarket store. Table 4.13 shows the findings.

Table 4. 13: Effects of ERP software adoption on growth and learning

Statements		Very negative	Negative	Neutral	Positive	Very positive
Perception on the effect of ERP software on employees training and development	Frequency	0	0	5	19	1
	%	0	0	20	76	4
Perception on the effect of ERP software on decision-making process in your firm	Frequency	0	0	0	17	8
	%	0	0	0	68	32
The impact of ERP software on communication within your firm	Frequency	0	0	2	15	8
	%	0	0	8	60	32
The impact of ERP software on tasks performance in your firm	Frequency	0	0	0	17	8
	%	0	0	0	68	32

Findings in Table 4.13 indicate that 20(80%) of the respondents had a positive or very positive perception on the effect of ERP software adoption on employees training and development, while 5(20%) were neutral. This could be because of ease of identification of training needs and subsequent tracking to ensure they are addressed. All respondents, 25(100%) had a positive perception on the effect of ERP software on decision-making process. Also, 23(92%) of the respondents indicated that communication within their firms was positive because of ERP software adoption whereas 2(8%) were neutral. All the respondents 25(100%) indicated that the impact of ERP software on tasks performance in the firm was positive. This could imply that adoption of ERP software in the supermarket stores created reliable systems through integration of various business functions/ units which resulted in increased workflow, standardization of various business practices, improved order management, accurate accounting of inventory, and better supply chain management.

Further, the study also weighted the responses of all respondents with regard to individual components of measure of growth and learning. Likert scale – Very negative (1), Negative (2), Neutral (3), Positive (4) and Very positive (5) was used. The findings are shown in Table 4.14 below.

Table 4.14 Weighted average of effects of ERP software adoption on growth and learning

Statements	Weighted Average
Perception on the effect of ERP software on employees training and development	3.8
Perception on the effect of ERP software on decision-making process in your firm	4.3
The impact of ERP software on communication within your firm	4.2
The impact of ERP software on tasks performance in your firm	4.3

Using the Likert scale, findings in Table 4.14 above show that the weighted average responses range from 3.8 to 4.3 implying that respondents agree ERP software adoption has resulted in better response to employees training and development needs, better decision making processes, improved communication and tasks performance within the surveyed Supermarket stores.

4.4.3 The effects of ERP software adoption on Internal Processes

The respondents of the selected supermarket stores in Nairobi County were asked to indicate the effects of adoption of ERP software on their internal processes in departments ranging from finance to supply chain management. These include processes such as communication, monitoring and evaluation as well as human resource management processes. Table 4.15 indicate the descriptive statistical results.

Table 4. 15: Effects of ERP software adoption on internal processes

Statements		Very negative	Negative	Neutral	Positive	Very positive
The impact of ERP software adoption on your firm's monitoring process	Frequency	0	0	0	20	5
	%	0	0	0	80	20
Response on impact of ERP software adoption on your firm's overall efficiency	Frequency	0	0	1	17	7
	%	0	0	4	68	28
Impact of ERP software adoption on access to information in your firm	Frequency	0	0	1	19	5
	%	0	0	4	76	20
Response on impact of ERP software adoption on human resource management processes in your firm	Frequency	0	0	1	21	3
	%	0	0	4	84	12
Impact of ERP software adoption on the accounting processes in your firm	Frequency	0	0	0	17	8
	%	0	0	0	68	32

Findings indicate that all the respondents affirmed that the impact of ERP software adoption on the firm's monitoring process was positive or very positive. This could be through improved coordination between divisions, improved decision-making process, increased internal communication, reduced time in transaction processing and possibility of data integration from various departments. 24(96%) of the respondents said that the impact of ERP software adoption on the firm's overall efficiency was positive whereas 1(4%) was neutral. On the impact of ERP software adoption on access to information, 24(96%) of the respondents said that it was positive or very positive, while 1(4%) was neutral.

With regard to human resource management processes, majority of the respondents at 24(96%) said that the impact of ERP software adoption on human resource management processes was positive or very positive. This indicates the possibility of integration of all human resource functions/ tasks facilitating timely attention and tracking to end. All the respondents (100%) said that the impact of ERP software adoption on the accounting process in the firm was positive or very positive. This could imply benefits accrued due to integration of various accounting tasks which include efficiency in payroll processing for employees, stocks monitoring, fixed assets

tracking, clear workflows inbuilt into the software which enable tracking of documents and clear approval levels/flows.

The researcher also weighted the responses of all respondents with regard to individual components of measure of internal processes. Likert scale – Very negative (1), Negative (2), Neutral (3), Positive (4) and Very positive (5) was used. The findings are shown in Table 4.16 below.

Table 4. 16: Weighted average of effects of ERP software adoption on internal processes

Statements	Weighted Average
The impact of ERP software adoption on your firm's monitoring process	4.2
Response on impact of ERP software adoption on your firm's overall efficiency	4.2
Impact of ERP software adoption on access to information in your firm	4.2
Response on impact of ERP software adoption on human resource management processes in your firm	4.1
Impact of ERP software adoption on the accounting processes in your firm	4.3

Using the Likert scale, findings in Table 4.16 above show that the weighted average responses range from 4.1 to 4.3 implying that respondents generally had a positive perception on the effects of adoption of ERP software on their firm's monitoring processes, efficiency levels, access to information, human resource management and accounting processes.

4.4.4 The effects of ERP software adoption on customer satisfaction

The study sought to examine effects of adoption of ERP software on customer satisfaction by asking respondents to rate their opinions on a Likert scale for the given statements on customer satisfaction. Table 4.17 indicates the findings.

Table 4. 17: Effects of ERP software adoption on customer satisfaction

Statements		Strongly disagree	disagree	neutral	agree	strongly agree
Adoption of the ERP software has resulted in responsive supply of products demanded by customers	Frequency	0	2	3	10	10
	%	0	8	12	40	40
Adoption of the ERP software has led to increased partnership with customers e.g. through loyalty points award programme	Frequency	0	0	1	13	11
	%	0	0	4	52	44
Adoption of the ERP software has resulted to increased brand awareness	Frequency	0	0	4	16	5
	%	0	0	16	64	20
ERP software adoption has led to overall greater customer satisfaction	Frequency	0	0	3	14	8
	%	0	0	12	56	32

Findings indicate that the majority of the respondents at 20(80%) affirmed that adoption of the ERP software resulted in responsive supply of products demanded by customers, 3(12%) were neutral, while 2(8%) disagreed. In regard to partnership with customers, 24(96%) of the respondents agreed or strongly agreed that adoption of the ERP software had led to increased partnership with customers such as through loyalty points award programme, while 1(4%) was neutral. Similarly, 21(84%) of the respondents affirmed that adoption of the ERP software had led to increased brand awareness, while 4(16%) were neutral on the statement. Also, 22(88%) of the respondents agreed or strongly agreed that ERP software adoption had led to overall greater customer satisfaction, while 3(12%) were neutral. This could be due to possibility of ERP software enabling service improvement through timely restocking and loyalty points award programmes, which customers can use to purchase goods and quick service rate achieved. In overall, the findings imply that ERP adoption had led to greater customer satisfaction, a fact that gave the supermarkets a competitive edge in terms of market size and customers retention.

Further, the researcher also weighted the responses of all respondents with regard to individual components of customer satisfaction. Likert scale – Strongly disagree (1), Disagree (2), Neutral (3), Agree (4) and Strongly agree (5) was used. The findings are shown in Table 4.18 below.

Table 4. 18: Weighted average of effects of ERP software adoption on customer satisfaction

Statements	Weighted Average
Adoption of the ERP software has resulted in responsive supply of products demanded by customers	4.1
Adoption of the ERP software has led to increased partnership with customers e.g. through loyalty points award programme	4.4
Adoption of the ERP software has resulted to increased brand awareness	4.0
ERP software adoption has led to overall greater customer satisfaction	4.2

Using the Likert scale, findings in Table 4.18 above show that the weighted average responses range from 4.0 to 4.4 implying that respondents generally agree that ERP adoption has resulted in responsive supply of goods demanded by customers, increased partnership with customers and brand awareness and led to overall customer satisfaction.

4.5 Inferential statistics

4.5.1 Correlation analysis

The study conducted Pearson Moment Correlation Coefficient to determine whether relationship exists between independent variable (ERP software adoption) and dependent variables (Financial performance, Growth and learning, Internal processes and Customer satisfaction) and the nature of such relationship if any as indicated in Table 4.19.

Table 4. 19: Correlation Matrix

		Financial Performance	Growth and learning	Internal processes	Customer satisfaction	ERP Adoption
Financial performance	Pearson Correlation	1	0.068	.455*	0.028	0.197
	Sig. (2-tailed)		0.745	0.022	0.896	0.346
	N		25	25	25	25
Growth and Learning	Pearson Correlation		1	.404*	0.283	0.322
	Sig. (2-tailed)			0.045	0.17	0.116
	N			25	25	25
Internal Processes	Pearson Correlation			1	0.32	0.361
	Sig. (2-tailed)				0.119	0.076
	N				25	25
Customer Perspective	Pearson Correlation				1	0.197
	Sig. (2-tailed)					0.346
	N					25

* Correlation is significant at the 0.05 level (2-tailed).

The correlation matrix results shows that there is positive linear association between the dependent variables and ERP adoption: Financial performance and customer perspectives, r=0.197, P=0.346; Growth and learning, r=0.322, p=0.116. Similarly, a positive linear association between Internal processes and ERP software adoption was revealed, r=0.361, p=0.076. It is however worth noting that in all the cases, the relationship is weak. P values (significance levels) ranging from 0-0.3 denote a weak relationship, 0.4-0.5 is moderate whereas values between 0.6 and 1 depict strong relationships.

The results indicate that ERP software adoption positively influenced major supermarket stores' financial performance, growth and learning, internal processes and customer satisfaction.

4.5.2 Regression Analysis

A multiple regression model was applied to determine the relative effects of ERP software adoption on firm financial performance, growth and learning, internal processes and customer satisfaction. The regression model is as below:

$Y= \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$

Where β_0 is the constant or intercept, β_1- β_4 are the regression coefficients (change in X given one unit change in Y). Y is the independent variable (ERP software adoption), X_1 is firm financial performance, X_2 is Growth and learning, X_3 is internal processes, X_4 is customer satisfaction and ε is the error term.

To establish whether dependent variables have a linear dependence on ERP software adoption a model goodness of fit was used. The study established a correlation value of 0.419. This depicts a moderate linear dependence between the variables. An R-square value of 0.176 was established hence a 17.6% of the variation in firm financial performance, growth and learning, internal processes and customer satisfaction is explained by ERP software adoption as shown in Table 4.20.

Table 4. 20: Model Goodness of Fit

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.419a	0.176	0.011	0.61

Predictors: (Constant), Customer satisfaction, Financial performance, Growth and learning, Internal processes

The coefficient of determination established that taking all factors into account (firm financial performance, growth and development, internal processes and customer satisfaction) all other factors held to constant ERP software adoption increases firm performance by 1.417 as indicated in the regression model $Y= \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$. This becomes;

Y=1.417 + 0.002financial performance + 0.281Growth and learning + 0.308Internal processes + 0.069 customer satisfaction. Table 4.21 indicates the findings.

Table 4. 21: Regression Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.417	1.511		0.938	0.36
	Financial performance	0.002	0.005	0.081	0.35	0.73
	Growth and learning	0.281	0.304	0.21	0.924	0.366
	Internal processes	0.308	0.366	0.219	0.841	0.41
	Customer satisfaction	0.069	0.232	0.065	0.297	0.77

Dependent Variable: ERP Adoption

This indicates that a unit change in ERP software adoption leads to a 0.002 increase in firm financial performance, 0.281 increase in growth and development, 0.308 increase in internal processes and 0.069 increase in customer satisfaction. ERP software adoption therefore significantly influences firm financial performance, growth and development, internal processes and customer satisfaction.

4.6 Chapter summary

This chapter has presented the findings and their interpretation. The first section analyzed the background information, second section presented findings on ERP modules adopted and section three presented findings on the ERP software adoption and firm performance. Chapters five and six cover presentation of research findings, conclusions and recommendations.

CHAPTER FIVE: DISCUSSION OF RESEARCH FINDINGS

5.1 Introduction

This chapter gives a presentation of the research findings. The study sought to establish the effects of enterprise resource planning software (ERPs) adoption on performance of major supermarket stores in Nairobi County. It was guided by two specific objectives namely, to determine the ERP modules adopted of ERPs implemented and to establish the effects of ERP adoption by major supermarket stores in Nairobi County on financial performance, organizational growth and learning, internal processes and customers.

5.2 Discussion of key findings

5.2.1 The ERP modules adopted

The first objective was aimed at determining the ERP modules adopted by major supermarket stores in Nairobi County. The study revealed that the most common ERPs used by major supermarket stores in Nairobi were Microsoft Dynamics AX, Aspire and Store line and Lawson software. The ERP modules adopted included finance, & accounting, inventory management, purchases, banking, manufacturing, sales, loyalty programme, human resources and fixed assets. These modules involve a group of applications that are integrated and customized to meet user specifications and offer support. These findings concur with Hoffman (2008) who provided a description of an ERP information system as Manufacturing and Logistics Module which enables planning production, taking orders, and delivering products to the customer, Finance Module which aids in managing the bookkeeping functions of the organization including the general ledger, accounts payable and receivables, fixed assets, treasury management, and cost control and finally Human Resources Module for handling personnel-related tasks like payroll, personnel management processes (such as recruitment and vacation allotments), and self-service human resources.

Some of the firms completed implementation of the software as early as 2004 while others as late as 2020. Majority of the firms completed implementing the ERP software in 2016. The motivation for the implementation of selected ERP software were accuracy, flexibility, reliability, data integration, efficiency and customization and ability to meet user requirements. The results indicated that ERPs adopted by different firms were suitable, relevant and have capacity to meet corporate goals and objectives.

5.2.2 Effects of ERP software adoption on financial performance

Majority 23(92%) of the respondents affirmed that their company had experienced stronger growth in revenue, 23(92%) also affirmed that the company had gained a greater market share, 24(96%) were of the opinion that their company had experienced growth in profitability, 20(80%) agreed that ERP adoption had resulted in lower transaction costs and 21(84%) of the respondents agreed that adoption had led to effectiveness in their supply chain processes with 23(92%) of the respondents agreeing that ERP software adoption supported their business goals.

These findings were further reinforced by the percentage increase in financial performance as indicated by respondents. Respondents totaling 4(16%) indicated a 10% growth in revenue and market share due to implementation of ERPs, in regard to profitability, respondents who indicated that adoption of ERPs had increased profitability by 10% and 20% had a tie at 3(12%) which could also result in an increase in return on equity (ROE), return on assets (ROA) and return on investment (ROI). 5(20%) of the respondents indicated that adoption of ERPs had resulted in lower transaction costs by 10%.

These results are consistent with those of Hunton, Lippincott, and Reck (2013) and Poston and Grabski (2011) who studied the financial impact of ERP systems on the financial performance of firms and compared ERP adopters with non-ERP adopters and found that return on assets and return on investment were significantly better over a three year period for adopters and suggested that generally ERP adoption gives firms a competitive advantage in financial performance relative to non-adopters.

The findings concur with Velcu (2015) who determined that the ERP had a positive effect on several indicators of financial performance including; return on investments (ROI) and return on assets (ROA), profit margin and assets turnover. A study by de Andres, Lorca and Gayo (2014) also validated these findings when they examined 695 leading firms in Spain on the impact of ERP on profitability and determined that firms that had successfully implemented ERP systems realized positive ROI, ROA, asset turnover (AT) and profit margin. The underlying argument here is that ERP promises sales growth, market share growth and reduction in operational costs resulting in profitability for adopting firms.

The Pearson correlation results showed a positive linear association between financial performance and ERP software adoption though weak, r=0.197, p=0.346. The regression model indicated that a unit change in ERP software adoption leads to 0.002 increase in firm financial performance. This implied that ERP software adoption among major supermarket stores in Nairobi led to a slight increase in their financial performance.

5.2.3 The effects of ERP software adoption on growth and learning

Growth and learning in any organization focuses on the ability of employees to utilize talents, skills, knowledge and training to accomplish organizational objectives. The study revealed that majority 20(80%) of the respondents had a positive perception on the effect of ERP software on employees training and development, 25(100%) had a positive perception on the effect of ERP software on decision-making processes and tasks performance and 23(92%) indicated that communication within the firm was positive as a result of ERP software adoption. This could be as a result of ability to identify training needs for each employee, fulfilment and tracking to ensure they are fully addressed through training and development programmes.

Again, the correlation matrix results indicated a positive linear association though weak between growth and learning and ERP software adoption, r=0.322, p=0.116 with regression model indicating that a unit change in ERP software adoption leads to 0.281 increase in growth and development. This is a small impact.

These results are consistent with various studies including by Wanyoike (2017) on the influence of enterprise resource planning system on organizational learning processes which found that

majority of the respondents comprising of 87.9% considered ERP systems as enablers in decision-making processes and established that decision-making process, business process, productivity, task performance, managerial control and customer satisfaction were all positively affected by the ERP software adoption by firms. The results are also in concurrence with Kariuki (2012) who examined the impact of ERPs on organizational competitiveness and showed that ERP adoption led to improvement in skills and knowledge through experience in using the systems and training for its optimal use.

5.2.4 The effects of ERP software adoption on Internal Processes

Internal processes perspective focuses on the internal business practises that lead to financial success and satisfied customers. To meet the organizational objectives and customer expectations, organizations must identify the key business processes which they must excel in. These key business processes are monitored to ensure that outcomes are always satisfactory. The study findings revealed that 25(100%) of the respondents affirmed that the impact of ERP software adoption on the firm's monitoring and accounting processes was positive, 24(96%) of the respondents said that the impact of ERP software on the firm's overall efficiency was positive whereas on the impact of ERP software on access to information, 24(96%) of the respondents said that it was positive. With regard to human resource management processes, majority 24(96%) of the respondents said that the impact of ERP software on human resource management was positive.

This could imply better coordination between branches or distinct business units, quicker turnaround time in decision-making, improved internal communication, reduced time in transaction processing and possibility of data integration with various departments/ business units. The results could be efficiency in payroll processing for employees, improved stock management and tracking, lower transaction costs and improvement of firm's liquidity.

Results from correlation matrix showed a positive linear association between Internal processes and ERP software adoption, $r=0.361$, $p=0.076$ albeit weak. A multiple regression model indicated that a unit change in ERP software adoption leads to 0.308 positive change in internal processes.

These study findings are consistent with Wanyoike (2017) who did a study to determine the influence of enterprise resource planning system on firms' internal processes and established that ERP systems had a positive impact on the monitoring processes, access to information, the process of human resource management, internal communication and the accounting processes. Similarly, Done (2011) found that use of ERP enhanced efficiency of information transfer, timeliness of information availability, relevance of business information, openness and transparency in the supply chain and concluded that these benefits were realized due to effective internal processes and accumulated learning in ERP use through training and experience in using the software.

The study findings observed that ERP software adoption among major supermarket stores in Nairobi improved internal communication and accuracy of information. This was also observed in a study by Ponorica (2013) who found that ERP systems provided consistency and accuracy of information and hence improved the managerial decision-making processes and was a vital decision support system.

5.2.5 The effects of ERP software adoption on customer satisfaction

The study findings indicated that majority 20(80%) of the respondents affirmed that adoption of the ERP software had resulted in responsive supply of products demanded by customers, 24(96%) of the respondents agreed that adoption of the ERP software had led to increased partnership with customers such as through loyalty points award programme, 21(84%) of the respondents affirmed that adoption of the ERP software had led to increased brand awareness and majority 22(88%) of the respondents agreed that ERP software adoption had led to overall greater customer satisfaction.

The Pearson correlation results showed that there was positive linear association between customer satisfaction and ERP software adoption, $r=0.197$, $p=0.346$. The regression model also showed that a unit change in ERP software adoption leads to 0.069 positive change in customer satisfaction. The positive change in customer satisfaction can be attributed to success in

management of the loyalty programmes, ability to meet demand for goods in a timely manner as well as quicker turnaround in service rates.

Singh and Singh (2013) noted that ERP systems increase customer satisfaction by narrowing the amount of time for service or product delivery as use of ERP systems can lead to a reduction of the order cycle times, customer response times as well as delivery speeds hence facilitate positive customer satisfaction. Similarly, Motwani and Sharma (2016) study on the effect of ERP on the performance of service firms, observed that ERP systems facilitated service improvement which increased customers' level of satisfaction.

CHAPTER SIX: CONCLUSION AND RECOMMENDATIONS

6.1 Introduction

This chapter presents conclusions and recommendations of the research study. This is based on the findings of the relative benefits that could accrue to firms adopting ERP software as part of performance strategy. Recommendations of areas for further study will also be examined.

6.2 Conclusions

The general objective of the study was to establish the effects of enterprise resource planning software (ERPs) adoption on performance of major supermarket stores in Nairobi County. Based on the findings of data analysis, the following conclusions were made;

6.2.1 The common ERP software used among major supermarket stores in Nairobi County include Microsoft Dynamics AX, Aspire and Storeline & Lawson software. This is because of their accuracy in data provision, flexibility, reliability, ability for data integration, efficiency, customizability and ability to meet user requirements.

6.2.2 ERP modules implemented by major supermarket stores covered most of the business operations including Financial Management, Human Resources, Stocks Management, Customer relationships, purchasing, inventory management, sales & marketing, banking, and Fixed Assets.

6.2.3 The 10% increment in growth in revenue, 20% increase in profitability and 10% reduction in transaction costs indicate that implementation of ERP software increases firm's financial performance through expansion of market share, creation of operating efficiencies and entrenchment of customer loyalty.

6.2.4 ERP software adoption enhanced employees capacity through training and development, improved communication within the firm and led to skills acquisition through the use of ERP

6.2.5 ERP software adoption and implementation improved coordination between branches, improved decision-making processes, improved internal communication, reduced transaction lead times and led to data integration with various departments/ branches. These further resulted

in efficiency in payroll processing for employees, stocks management, and overall improvement in firm's liquidity.

6.2.6 ERP adoption lead to increased customer satisfaction due to success in implementation of customer loyalty as well as improved delivery speeds.

6.3 Recommendations

The management of supermarkets in Kenya as well as firms in other industries need to appreciate the value proposition of ERP software adoption to organizational performance and adopt the same as part of performance strategy. They should embrace ERPs not only because it is fashionable or to keep pace with peers but more so for its value in enabling organizational survival, profitability, market penetration and creating overall competitive advantage. They should ensure that ensure that necessary modules are adopted to cover relevant business operations in order to create optimal systems, not every module is necessary. Software vendors out of zeal to generate sales may be keen to push every module in stock and such, implementing firms should thoroughly assess their needs.

The management of supermarkets in Kenya as well as the firms in other industries should appreciate the value of ERP software on organizational learning process. Similarly, as part of their performance strategy, they should adopt ERPs as a strategy of enhancing firm's overall performance by enhancing business processes such as decision-making, productivity, task performance and management control. Additionally, the ERP software adopted should also be customer centric and be aimed at enhancing firm-customer relations and improving service turnaround times with the goal of achieving greater customer satisfaction. In general, the management should appreciate the ability of ERP software to enhance information management within the firm.

Internal processes are vital determinants of organizational performance and as such organizations should adopt ERP software to reengineer the firms' internal processes. The management of supermarket stores in Nairobi County and firms in other industries should adopt ERPs to improve

internal communication processes (both horizontal and vertical) and create efficiencies in finance and accounting processes which have direct impact on organization performance.

The study recommends that firms should ensure proper training is offered to all employees not only to facilitate implementation and efficient operation of the ERP, but also create a buy-in and acceptability of the innovation.

6.4 Recommendations for further studies

Based on the findings and conclusion of the study, the following areas have been suggested for further study. Little research has been done on the impact of challenges of ERP software adoption on firm financial performance. A myriad of factors negatively impact adoption of ERP software by firms ranging from selection of appropriate technology solution to support firm performance, cost of the investment to management of the consultant. Through this, researchers may be able to add more to knowledge of ERPs adoption process and as a result reduce gaps that hinder successful implementation. The study further recommends research on risks associated with Enterprise Resource Planning adoption especially in the era of increased cybercrime activities. Cybercrime has invariably led to significant losses of financial resources across a number of industries and consequently impacted negatively on firm performance.

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APPENDICES

Appendix A: Letter of Introduction

TO WHOM IT MAY CONCERN

Dear Sir/Madam,

REF: REQUEST FOR PARTICIPATION IN A RESEARCH STUDY

I am a student at Strathmore University Business School, pursuing a Masters of Business Administration degree. As part of the course requirements, I am carrying out a research study titled ‘‘*The effects of Enterprise Resource Planning software adoption on performance of major Supermarket stores in Nairobi County’’.*

The purpose of this letter is to request you to participate by filling in the attached questionnaire to enable me collect relevant data for this study. Your objectivity in giving the requested information will go a long way in assisting to achieve the objectives of the study. Please note that the responses in this questionnaire will be used only for the purposes of this study. The findings will be strictly confidential and at no time will your name be mentioned anywhere in the report. Your honest participation is highly appreciated.

Looking forward to your cooperation.

Yours faithfully,

Enoch Rono

Appendix B: Questionnaire

SECTION A: BACKGROUND INFORMATION

1. Name of your Company----------

2. Gender

   Male [ ] Female [ ]

3. Please indicate your age bracket

   Up to 25 years [ ] 26 to 35 years [ ]

   36 to 45 years [ ] 46 to 55 years [ ]

   Above 55 years [ ]

4. Highest level of education

   Certificate [ ] Diploma [ ]
   Bachelor's degree [ ] Postgraduate degree [ ]

   Other (please specify) _____

5. Name of your department

   ICT [ ] Finance [ ] Supply chain management [ ]

   Stores and Warehousing [ ] Human Resource Management [ ]

6. Length of time worked in your Department

   Up to 1 year [ ] 1-3 years [ ] 4-6 years [ ]
   7 to 10 years [ ] Over 10 years [ ]

7. Position in the Organization

   ICT Director/Manager [ ] Human Resource Director/Manager [ ]

   Finance Director/Manager [ ] Supply Chain Director/ Manager [ ]

   Stores Director/Manager [ ] Any other----------

8. Duration in your current position

Up to 1 year [ ] 1-3 years [ ] 4-6 years [ ]

7 to 10 years [ ] Over 10 years [ ]

SECTION B: THE ERP MODULES ADOPTED

9a. Which ERP modules have your firm adopted?

_____

_____

_____

9b. Which year did your organization **COMPLETE** the implementation of the ERP software:

_____

10. To what extent do you agree or disagree with the following statements, where

1-strongly disagree, 2- disagree, 3- neutral, 4- agree and 5- strongly agree

	1	2	3	4	5
Our ERP provides accurate data					
Our ERP is flexible					
Our ERP is easy to use					
Our ERP is easy to learn					
Our ERP is reliable					
Our ERP allows data integration					
Our ERP is efficient					
Our ERP allows for customization					
Our ERP meets user requirements					

SECTION C: ERP SOFTWARE ADOPTION AND FIRM PERFORMANCE

I. The effects of ERP software adoption on Financial Performance:

11. The statements below are concerned with the effects of ERP adoption on the firm's financial performance. Please tick the one that best describes your opinion. Use the following scale. **1- Strongly disagree, 2- Disagree, 3- neutral, 4- agree and 5- strongly agree**

	1	2	3	4	5
Our company has experienced stronger growth in revenue					
Our company has gained a greater market share					
Our company has experienced growth in profitability					
The ERP has lowered transaction costs					
ERP has led effectiveness in our supply chain processes					
The ERP software supports our business goals					

12. Please indicate the percentage by which the following performance objectives and goals have increased due ERP implementation.

Performance objective/Goal	**Percentage increment**
1. Growth in revenue	_____
2. Increase in market share	_____
3. Increased profitability	_____
4. Lower transaction costs	_____

II. The effects of ERP software adoption on growth and learning:

13. The statements below are concerned with the effects of ERP adoption on organizational learning. Please tick the one that best describes your opinion. Use the following scale. **1- Strongly disagree, 2- Disagree, 3- neutral, 4- agree and 5- strongly agree**

Statements	Very negative	Negative	Neutral	Positive	Very positive
	1	2	3	4	5
How do you perceive the effect of ERP software on employees training and development?					
How do you perceive the effect of ERP software on decision-making process in your firm?					
The impact of ERP software on communication within your firm has been…					
What has been the impact of ERP software on tasks performance in your firm?					

III. The effects of ERP software adoption on Internal Processes:

14. Where necessary answer or complete the following questions and statements with choices provided (For each statement pick just one response).

Statements	Very negative	Negative	Neutral	Positive	Very positive
	1	2	3	4	5
The impact of ERP software on your firm's monitoring process have been…					
What would you say has been the impact of ERP software on your firm's overall efficiency?					

What has been the impact of ERP software on access to information in your firm?					
What would you say has been the impact of ERP software on human resource management process in your firm?					
What has been the impact of ERP software on the accounting` processes in your firm?					

IV. The Effects of ERP software adoption on Customer Satisfaction

15. Please tick the one that best describes your opinion. Use the following scale. **1- Strongly disagree, 2- Disagree, 3- neutral, 4- agree and 5- strongly agree**

	1	2	3	4	5
Adoption of the ERP software has resulted in responsive supply of products demanded by customers					
Adoption of the ERP software has led to increased partnership with customers e.g. through loyalty points award programme					
Adoption of the ERP software has resulted to increased brand awareness					
ERP software adoption has led to overall greater customer satisfaction					

Thank you very much for participating in this study