EFFECT OF KNOWLEDGE MANAGEMENT PRACTICES ON ORGANIZATION PERFORMANCE OF SELECTED STATE CORPORATIONS IN KENYA

BY

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MASTER OF BUSINESS ADMINISTRATION DEGREE

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DECLARATION

I declare that this dissertation is my original work and has not been previously published or submitted elsewhere for the award of the degree of Master of Business Administration (Corporate Management).

I also declare that this dissertation contains no material written or published by other people except where due reference is made and the author duly acknowledged.

Susan Mullei

I do hereby confirm that I have examined the masters' dissertation of

Susan Mullei

And have certified that all revisions that the dissertation panel and examiners recommended have been adequately addressed.

Signature…… Date……...…….……

Dr. Nyaribo Misuko

Supervisor

ABSTRACT

Knowledge management is known to optimize organizational productivity and performance. As organizations sought to improve their performance and try to achieve organizational performance, gaining knowledge was seen as a key component. The main objective of this research was to determine the effect of knowledge management practices on organization performance in the selected state corporations in Kenya. Specific objectives that guided this study were to determine the effect of knowledge accumulation on organization performance in selected state corporations in Kenya; to establish the effect of knowledge utilization on organization performance in selected state corporations in Kenya; to establish the effect of knowledge sharing on organization performance in selected state corporations in Kenya; and to establish the effect of knowledge ownership on organization performance in selected state corporations in Kenya. The study adopted descriptive research design to obtain data from the target population of 179 State corporations in Kenya. The findings show that coefficient of correlation R was 0.866, an indication of a strong correlation between the variables. The coefficient of adjusted determination R^2 was 0.740 which translates to 74.0%, this shows changes in organizational performance can largely be explained by the four independent variables. The study concludes that knowledge accumulation has a significant influence on organizational performance this is due to States Corporation's engagement in research to generate new knowledge. Knowledge utilization has a significant influence on organizational performance of State Corporations. Knowledge sharing has a significant influence on State Corporation. This is due to use of knowledge to influence the kind of culture the State Corporation wants to prevail in and collaboration with other stakeholders in ensuring competitiveness. Knowledge ownership has a significant influence on organizational performance due to increased privacy on information breach. The study recommends that State Corporations ought to refine their internal processes in line with the strengths of the staff, conduct internal experiments to improve service delivery to customers, collect customer feedback to inform future decisions and use customer feedback to improve their processes. State corporations ought to utilize its knowledge to departmentalize its operations, reuse its knowledge to strengthen its operations, use its knowledge to influence the kind of culture it wants to prevail and collaborate with other stakeholders in ensuring competitiveness. State corporations ought to approve secondment of employees to other departments, encourage teamwork among employees, hold regular town hall meetings and organize regular internal trainings for its staff. State corporations ought to patent its knowledge. Employees at state corporations ought to be bound by the signed agreement while still working and after they leave the organization.

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I dedicate this project to my friends for their support.

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ABBREVIATIONS AND ACRONYMS

FLK: Firm-Level Knowledge

ICT: Information Communication and Technology

IOA: Organizational Assessment Model

KBV: Knowledge Based View

KM: Knowledge Management

KMP: Knowledge Management Practices

KTB: Kenya Tourism Board

OKC: Organizational Knowledge Conversion

R&D: Research and Development

RBV: Resource Based View

SECI: Socialization, Externalization, Combination and Internalization

SME: Small and Medium Enterprise

SPSS: Statistical Package for Social Scientists

OPERATIONAL DEFINATION OF TERMS

Knowledge Management Practices: They collectively include knowledge accumulation, knowledge utilization, knowledge sharing and knowledge ownership (Trusson, Doherty & Hislop, 2014).

Knowledge Accumulation Practices: Establishment of Research and Development departments and use of technologies to access relevant sources of information (Inkinen, 2016).

Knowledge Utilization Practices: It is the storage and application of the accumulated information to provide quality products while at the same time carrying out forecasting (Obeidat, Al-Suradi, Masa'deh & Tarhini, 2016).

Knowledge Sharing Practices: It entails putting in place mentorship and apprenticeship programs in an organization that help in distributing the accumulated information among employees of an organization (Abu-Shanab, Knight & Haddad, 2014).

Knowledge Ownership Practices: It is utilization of patents, copyrights and trademarks to protect the accumulated information in an organization (Wang, Wang & Liang, 2014).

Organizational Performance: It is a measure of how services are offered, the quality of products, return on investment and the level of customer satisfaction with products of an organization (Gomez-Mejia, Berrone & Franco-Santos, 2014).

State Corporations: Organizations established by specific legislations and Acts of the Parliaments and they are charged with provision of a specific service to the public (Kibui, Gachunga & Namusonge, 2014).

CHAPTER ONE
BACKGROUND

1.1 Background to the Study

Unique knowledge possessed by organization is important in ensuring that such organizations achieve their set objectives in a highly competitive business environment. The internal procedures and the thinking behind them are important in ensuring a smooth flow of tasks (Kianto, Hussinki & Vanhala, 2018). The creation and disseminate information and knowledge within an organization, enhances efficient and effective operations which leads to the achievement of strategic advantage to the firm (Darroch and McNaughton, 2001). Darroch and McNaughton (2003) noted that knowledge management involves three main activities: acquisition, dissemination and responsiveness. It refers to the collection of data, processing, storing, managing and finally sharing for use. Through this chain, value is added thus transforming the raw and meaningless data into information which can be used as knowledge to improve organizational processes. Thus, knowledge becomes the ultimate output (Lee &Wong, 2015).

The knowledge resides in the individual employee's mind and may not be important until it is articulated, captured and shared such that it gets captured in internal operational processes with proper documentation so that in case such an employee left the organization, the knowledge can be retrieved and applied to maintain operational efficiencies of the organization. Through knowledge creation, organization promotes learning and innovative abilities (Tseng, 2016). Developing new knowledge to replace obsolete ones is important in ensuring that the organization improves on its efficiency. Through knowledge acquisition, organizations search for ways of recognition and assimilation of knowledge that bears potential to benefit the organization from an external perspective (Lee, Foo, Leong & Ooi, 2016).

Knowledge management is important in helping organizations sustain their competitive advantage as it contributes to persistent innovations and discovery of new and more efficient ways of performing tasks (Abas & Jali, 2015).

In order for the knowledge created to benefit future generation of employees, organizations have to ensure that they put in place sufficient mechanisms that would facilitate storage. The knowledge needs to be stored in a manner that it can easily be retrieved and disseminated whenever need arises. It is therefore important that organization build a knowledge sharing culture (Lee et all., 2016). A good sharing culture promotes organizational efficiency and effectiveness which are key ingredients in organizational productivity. Organizations need to accumulate adequate knowledge, utilize it, share it and protect ownership (Tseng, 2016). This study sought to understand the ramifications of knowledge management on the overall organization performance of selected State Corporations. This was done by scrutinizing the utilization of knowledge management practices on service delivery, quality production, customer retention and employee engagement,

1.1.1 Knowledge Management Practices

Knowledge management practices are mechanism devised by organizations to help them draw tacit knowledge that people carry with them, observe and learn from their experience and turn it into explicit knowledge which can be formally documented, stored and shared (Kianto et all., 2018). The practices simply explain knowledge management processes which ensure that organizations get information to inform their decision-making process. Singh (2001) identified key knowledge management practices that play an important role in most organizations today. These are Acquisition, Creation, Accumulation, Packaging, Utilization, Application, Reuse

and Ownership. For successful knowledge management practices, information within the organization has to be shared, new skills learned and performance reviews undertaken.

Knowledge accumulation practices entail all measures put in place to access and store relevant information that help an organization gain competitive advantage. In this ever-changing business environment, knowledge has been crucial for organizations to strengthen their performance. Organizations search for information for various reasons, but the key one is to improve competitive positioning (Sankowska, 2013). Knowledge utilization is the use of knowledge to improve on performance of an organization. Acquisition and utilization of information alone is not sufficient for an organization to gain competitive advantage. For the accumulated information to result into substantial increase in performance of an organization, this information should be shared among employees. Knowledge sharing practices entail disseminating the sourced knowledge to employees to increase their effectiveness and therefore performance. Knowledge ownership results into creation of experts with key knowledge in their area. Such experts have a role in managing the knowledge of an organization into a specific area or topic (Su, Ahlstrom, Li & Cheng, 2013).

Akbar and Tzokas (2013) revealed that there are two components of knowledge that need to be tapped and managed; these are tacit and explicit knowledge. From the epistemology perspective, knowledge that is carried in the mind is referred to as tacit. This is internalized knowledge that individuals possess. In some instances, the individual may not even be aware that they possess this knowledge. The challenge is to capture and convert this into explicit knowledge. Whereas explicit is the knowledge that is articulated, codified and shared. The value of explicit knowledge is realized when it is put into use.

For instance, tacit knowledge approach pays much attention on getting to know the different types of knowledge possessed by different employees within an organization. This entails how to rotate and transfer employees within an organization to ensure that they share the tacit knowledge they possess. As well as closely managing key human resources especially those who create and carry knowledge in the organization. Contrary to tacit knowledge, explicit knowledge approach pays key attention to operational processes which help in articulating knowledge held by individual employees. This is done through design of organizational approaches used in the creation of new knowledge, and deployment of systems to disseminate knowledge (Wangare, 2015).

The strategies used to capture knowledge can be categorized into three (Singh, 2001). Content strategy is the most popular; it entails the capture and use of information through report writing. However, this is the least effective as it merely focuses on the documentation alone (Tzokas, 2013). In the push strategy, Aghamirian, Dorri and Aghamirian (2013) suggest that knowledge can be captured, before, during, and after a process. The focus is on creating an environment in which employees can help in management of knowledge systems in a proactive manner. This approach is also known as codification (Aghamirian et al., 2013). On the other hand, the Pull Strategy occurs when individuals directly request for information from those that possess it and are considered experts. Due to the personal interaction, this is also known as the personal approach (Josephat, 2017).

1.1.2 Organization Performance

How an organization actions its goals and objectives can be termed as organization performance (Valmohammadi & Ahmadi, 2015). It compares the actual output realized against those projected or those realized by organizations. These organizations maybe within the same

industry or in other industries with similar magnitude (Valmohammadi & Ahmadi, 2015). It measures the ability of managers in utilization of resources availed to them to generate value for stakeholders within a stipulated time period. This is commonly referred to as financial periods.

Useful data obtained on performance is critical in identifying important factors that aid or impede the achievement of results. The data may further be used on how to best position the organization in regard to the competition (Kianto et al., 2018). Organizational performance in simple terms checks the precision with which an organization has attained its pre-set strategic goals (Byukusenge & Munene, 2017). This normally depends on the quality of people and how well they are able to use the resources at their disposal for the achievement of a given set organizational goals (Muturi, Ochieng & Njihia, 2015). A key resource here is data.

Different scholars have measured organizational performance differently (Byukusenge & Munene, 2017). For instance, Kaplan and Norton (1995) introduced the Balanced Score Card with four distinct perspectives to counter the traditional financial measures. These four perspectives included: financial, internal processes, customer satisfaction and learning and growth. This was regarded as a better way of measuring organizational performance as not performance could be expressed in financial terms. According to Odhon'g and Omolo (2015) financial measures of organization performance mainly pays attention to profits which is measured in different ways.

There are two key measures of performance of an organization, either financial or non-financial. Financial measures of performance are basically extracted from the published accounts and information of the company. They include indicators like return on assets, return on equity and return in investments. Financial measures of performance are the ultimate goal

for existence of any business (Delen, Kuzey & Uyar, 2013). Non-financial measures of performance of a business are in most cases most not expressed into quantifiable terms. They are subjective measures of performance of an organization. They include indicators like customer satisfaction, employee retention and customer service (Berger & Bouwman, 2013).

Organizations today are not simply concerned about financial performance through financial reporting. This is because apart from the financial aspect, organizations have realized the social and environmental aspects of performance in reporting. This has resulted in the mainstreaming of sustainability reporting. Such a report details information about economic, environmental, social and governance performance of the business (Milne & Gray, 2013). This provides a more holistic reporting scheme.

1.1.3 State Corporations in Kenya

It was proposed that this study be undertaken within selected State Corporations in Kenya. These are established through an Act of Parliament or any other written Law (State Corporation Act, 2015). They are owned by the government and may be run directly or indirectly by the government. Their main purpose is carrying out public social task on its' behalf. Thus, the role of State Corporations according to Njagi and Malel (2012) include: provision of essential services to the citizens, developing marginal areas, exploiting both social and political objectives as well as correcting market failure.

There are currently 179 State Corporations in Kenya spread across the following sectors; financial, manufacturing (commercial), regulatory, learning institutions, trading and research, service and development authorities. All these organizations play an important role as far as the growth of the economy is concerned. Several factors influence the establishment of state corporations including the need to create employment, provided essential services to

citizens, control the key areas of the economy and reduce exploitation of the citizens by private and capitalist individuals. By creating employment, State Corporations help in improving the living conditions of people in the country. There are some critical services required in the country that cannot be left in the hand of the private sector including provision of security. To meet this, the government establishes state corporations (Kihara, 2013).

Michael and Ngugi (2016) in their research established that some of the challenges facing State Corporation performance included poor performance and lack of equipping human resource with necessary competencies. The burden of shouldering the weight of poor performing State Corporations is huge. The resources poured into these institutions are seen as going to waste. Thus, the government took a strategic decision to sell off poor performing corporations through privatization. The Privatization Commission was then established in 2005 to oversee this process. Currently there are approximately 21 State corporations that are undergoing privatization (Privatization Committee, 2018). These State Corporations now face change of ownership that will tossed them into the competitive open market. There is thus dire need for them to change their operational culture to be more robust so as to survive in the competitive market or face demise. Njagi and Malel (2012) proposes that moving to self-sustainability and recruiting technical staff if implemented among others measure, may enable these corporations to better their performance in efficiency and effectiveness.

The other challenge facing state corporations is increased inefficiencies and ineffectiveness coupled with a rise in misuse of public resources. The misuse of resources from these state corporations in most cases stem from increased cases of corruption. The Auditor General has pointed several cases of uncounted expenditures in some of these state corporations. While the Capital Markets Authority has raised concern over some state corporations' inability to comply with the necessary requirement of publishing annual financial

reports. This has reduced efficiency and their ability to deliver on the mandate. To solve these challenges faced by state corporations, knowledge management is paramount. This therefore forms the basis of the current study.

1.2 Statement of the Problem

Knowledge management is known to optimize organizational productivity and performance. As organizations seek to improve their performance and try to achieve organizational performance, the need to leverage on knowledge increases. It is from this fact that organizations in Kenya invest 30% of their annual budgets for acquisition of information (Kenya Investment Authority, KenInvest, 2018). There is new knowledge created on a daily basis that once incorporated into an organization it can gain high productivity. The challenges that many organizations face include lack of involvement by employees in an organization, inadequate tacit knowledge, structures that object to new knowledge and organizational cultures that restrict innovation of knowledge.

State corporations in Kenya have kept with the old age bureaucratic systems and new information either tacit or explicit is not easily accepted and incorporated into the firm. If these corporations desire to improve their performance and increase service delivery, the adoption of knowledge management practices is compulsory. For them to ensure best practice at all levels within an organization, all the employees within the different cadre need to participate. All staff need to be involved in not only in the input of the data, but also in the sharing of both tacit and explicit knowledge. This is one of the options available that require minimum input of additional resources and have far reaching effects.

A number of studies have been done to link knowledge management practices and organizational performance. Globally, Kianto, Hussinki and Vanhala (2015) focused on

finding out the impact that knowledge management practices had on market value of firms trading on the Finland Securities Exchange. In this study, 91% of the companies stipulated that knowledge management was a strategic asset. In Thailand, Tikakul and Thomson (2016) looked at the knowledge management practices by SMEs in the manufacturing sector and established that the greatest hindrance to the capture of knowledge management was lack of clear guidelines. While doing a comparative analysis of Brazilian, Portuguese and Polish organizations on KM, Matos, Vairinhos, Batista, Paliszkiewicz and Do Rosário Cabrita, (2016) noted that KM is not used in strategic decision making. The study was done in developed countries and failed to link KM to performance. In Iran, research on the effects of customer knowledge management in e- commerce was carried out by Aghamirian, Dorri and Aghamirian in 2017. This research was limited to the management of information gained from customers. Hardia (2013) in his study on ICT based knowledge management for sustainable development and growth posits that competitive advantage has shifted over the years.

Locally, Josephat (2017) investigated on knowledge management practices and performance of national government ministries in Kenya. The findings showed that knowledge management practices have highly been adopted in government ministries. While Kariuki and Wasike (2017) looked at the "Knowledge Management and Performance in Manufacturing Firms: The Mediating Role of Learning Organization". 64% of variation in Learning Organization was explained by Knowledge Management. This study covered manufacturing firms and looked at learning processes within the organizations.

Knowledge management practices are scantily used in the larger scope of the public sector. Furthermore, none of the studies above examined knowledge management practices and organizational performance in state corporations in Kenya. This results into gaps that the current study seeks to fill. As a result, this study aims' a two pronged approach at filling the

gap. This is by exposing the relationship that exists between knowledge management practices and organizational performance in the selected state corporations, and the Kenyan geographical area covered.

1.3 Purpose of the Study

The main objective of this research was to determine the effect of knowledge management practices on organization performance in the selected state corporations in Kenya.

The specific objectives of this research were:

i. To determine the effect of knowledge accumulation on organization performance in selected state corporations in Kenya
ii. To establish the effect of knowledge utilization on organization performance in selected state corporations in Kenya
iii. To establish the effect of knowledge sharing on organization performance in selected state corporations in Kenya
iv. To establish the effect of knowledge ownership on organization performance in selected state corporations in Kenya

1.4 Research Questions

The research sought to answer these questions:

i. What is the effect of knowledge accumulation practices on organization performance of state corporations in Kenya?
ii. How does knowledge utilization practices affect organization performance of state corporations in Kenya?

iii. What is the effect of knowledge sharing practices on organization performance of state corporations in Kenya?

iv. What is the effect of knowledge ownership practices on organization performance of state corporations in Kenya?

1.5 Significance of the study

This study sought to provide insight into the importance of knowledge management practices in an organization. This was by highlighting the use of knowledge management within selected state corporations. The aim was to provide insight into the practices needed to benefit from knowledge management. It was envisioned that the findings would be of benefit to the management of the participating state corporations as well as other organizations. Who may harness knowledge management to optimize their performance thereby catapulting its effectiveness and efficiency.

The study would further be beneficial to the academicians and future scholars. This would be through the provision of empirical literature on knowledge management and organizational performance. It would also serve as a guide to scholars on research topics selection. This study does not purport to be exhaustive, thus others scholars may seek areas where further research can be conducted in. More so it would be a source of reference material to both knowledge management and organization performance practitioners.

1.6 Scope of the Study

This study intended to carry out a systematic exploratory research on the effect of knowledge management practices on organization performance among selected state corporations in Kenya. Specifically, the study focused on knowledge accumulation, utilization, sharing and

ownership. The study was conducted within Nairobi County where the head offices of the corporations are located; the respondents were Heads of Department that manage Knowledge management in the corporations. The study was carried out in the months of August and September 2018. The study collected primary data using questionnaires.

1.7 Basic Assumptions of the Study

At the beginning of the study the researcher undertook some basic assumptions of the course of the study. It was assumed that all the participants would freely share accurate and reliable information on KM practices and their performance. The study also assumed that the information collected would respond to the research questions. This would enable valid in drawing conclusions being drawn from the responses. It was also assumed that the number of respondents would exceed the threshold giving credibility to the results.

CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

This chapter discusses literature from other researchers that is relevant to the study. The literature has been organized according to; theoretical review and an empirical review sections as per the study objectives. The chapter also explores the gaps in literature and a conceptualization on the relationships between research variables.

2.2 Theoretical Framework

This section presents the theories that supported objectives of the study. In particular, the study was anchored on the Knowledge Based View of the Firm Theory, Learning Organizational Theory, Organizational Knowledge Conversion Theory and Knowledge Spiral Theory.

2.2.1 Knowledge Based View of the Firm

This theory was initiated by Wernerfelt (1984) who stated that knowledge is the most strategically significant resource of a firm. As argued by Wernerfelt (1984) the major determinants of firm competitiveness and superior company performance are varied knowledge foundations and competences among the companies since knowledge-based competencies are usually difficult to be copied and are socially complex. Knowledge as stated by Wernerfelt 1984 is entrenched and inbuilt in many entities like organizational culture and identity, policies, routines, documents, systems, and employees. This perception originally promoted by Penrose (1959) lays its foundation from the resource- based view of the firm and encompasses from there. It originates from the strategic management literature and was later expounded by others.

The firms that recognize what knowledge does in companies would help enhance competitive advantage. Advocates of Knowledge Based Values (KBV) claim that the resource-based perspective is not that much far-fetched from Resource Based View (RBV). Specifically, knowledge is accorded a broad resource rather than one that has special characteristics by RBV. Thus, it does not make a distinction of the various types of knowledge-based capabilities. Information technologies as stated by Alavi and Leidner (2001) can be vital in management of knowledge because of the ease in analysis of data, comprehension of results which inform quality decision making that help organizations achieve a competitive advantage position. In context to their knowledge management strategies, KBV shows that companies can distinguish themselves.

2.2.2 Learning Organizational Theory

The organization learning theory was pioneered by Easterby-Smith, Crossan and Nicolini (2000). It proposes that an organization that assists in learning its members and constantly improves itself is called a learning organization. It is developed when modern organizations face challenges. The main characteristics for a company to have sustainable competitive advantage in a turbulent business environment are business personal competencies, organization culture, teamwork and system thinking. This concept motivates a more interconnected way of thinking from companies. Organizations as stated by Serenko, Bontis and Hardie, (2007) should emulate communities by making employees be committed hence work harder.

Learning organization as stated by Janz and Prasarnphanich, (2003) states that, organizations should reconsider their goals and actions so as to become competitive in a changing environment hence achieve their set goals. In spite of this a company has to make a

sound decision for learning to occur by changing actions in accordance to the changing situation. Hence one has to link the action to the result and remember the result. It is similar to psychology and cognitive research to a very great extent because learning begins at a discrete level. But once information is stored in a way that is transmittable and accessible, shared and used as a goal by the organization as stated by Cha, Pingry and Thatcher, (2008), then it becomes a learning organization. Once the information is shared, it is then termed as organizational learning theory. The theory is relevant as it helps in expanding the value that accumulating, sharing and using of knowledge can help an organization improve its productivity and performance.

2.2.3 Organizational Knowledge Conversion Theory

The birth of this theory can be traced to Nonaka and Takeuchi (2011) theory of organizational knowledge conversion that analyzes the interaction of explicit and tacit knowledge to bring about internal processes efficiency. Grant (1996) noted that the interaction of explicit and tacit knowledge four distinct modes of knowledge conversion emerges. These include: externalization, internalization, combination and socialization. These four modes make up the lifeline engine of the entire process from creation of knowledge to transfer (Chong, 2010). Organizations are able to retain knowledge through conversion from tacit to explicit forms. This can help in sharing where retiring employees leave the organization when the knowledge they possess has been transferred and grasped by new and young employees left behind. In the same breadth, senior and well experienced employees will be able to share their knowledge with their subordinates and other new staff joining the organization.

The externalization mode ensures that tacit knowledge is converted into explicit knowledge to facilitate the capturing of such knowledge in internal systems for storage. This

theory is relevant in this study because it contributes to the management of knowledge. It explains different models that organizations can apply to ensure that they manage knowledge for competitive advantage (Ulrich & Nonaka, 2011). It explains how knowledge can be created, shared, stored and retrieved to help organizations streamline their processes in a competitive manner (Dalkir, 2013).

2.2.4 Knowledge Spiral Theory

This theory was formulated by Nonaka and Takeuch (1995). The theory focuses on the knowledge spirals that explain on the transformation tacit knowledge into explicit knowledge based on the individuals of the organization, group of the organization and the organizational learning and innovation (Dakri, 2011).

The four modes of knowledge conversion form the genes of the transformation of knowledge form tacit to explicit and vise-versa on a lateral level among individuals and groups as well as on a horizontal level in organizations, thus forming the spiral knowledge transformation in both form and subject. The provision of the four modes of knowledge conversion gives a clear understanding and articulation of the implementation of the knowledge management practices in the organization. Thus, the theory is essential as it provides a clear basis on the transformation and integration of the knowledge that it would create a link to foster on the implementation of the knowledge management practices. It would also guide the management of organizations on what best knowledge management practices can be adopted and lead to high performance.

2.3 Empirical Review

This section presents empirical studies that were done on knowledge management practices and organization performance. The section reviews literature on knowledge accumulation, knowledge utilization, and knowledge sharing and knowledge ownership in relation to organizational performance.

2.3.1 Knowledge Accumulation Practices and Organization Performance

In acquiring new markets and adapting to changes in existing market places and industries, organizations are trying to improve their employees' competencies by using knowledge management practices. Organizational leadership are setting research and development departments so as to acquire new knowledge that would improve their performance and gain competitiveness (Madeira, Vick & Nagano, 2013). It is obvious that accumulating knowledge during the process of research and development and performing industrial mechanisms by making use of the services of technology, knowledge, and organization would be the bases of innovation and the core of future development in industry. From the perspectives of the innovation era and knowledge economy, not only is accumulating knowledge important but disseminating technologies is also the key to leveraging the research and development innovation abilities of industry.

Long, Soubeyran and Soubeyran (2014) investigated on knowledge accumulation within an organization. Specifically, the study focused on knowledge accumulation problem within an organization that cannot prevent the worker from quitting and using the knowledge outside the organization. The study adopted a descriptive research design. Primary data was collected using questionnaires. The analyzed findings indicated that knowledge accumulation follows a cycle where it increases at the start within an organization, peaks and starts to fall

over a certain time frame. Whenever accumulation of knowledge is delayed, employees' productivity is reduced which eventually affects the overall organizational performance. The initial knowledge level within an individual affects the overall performance of the organizational. The capacity for knowledge accumulation positively impacts on technical innovation within an organization.

Ly and Lai (2017) did a study on fuzzy AHP analysis of firm-level knowledge accumulation. The study adopted a descriptive design. Primary data was collected using questionnaires. From the findings, it was revealed that knowledge is considered to be a useful tool for a firm's competitiveness and sustainability. There is considerable evidence confirming that Firm-Level Knowledge (FLK) accumulation provides a competitive advantage for firms, through innovation. Therefore, most knowledge-intensive firms accumulate FLK via exploitative practices to prevent deterioration of their innovation performance. Knowledge accumulation is enforced through integration, absorption and sharing of information either from internal and external sources in the organization. In addition, the external environment and organizational culture have significant interaction effects with knowledge accumulation capability on organizational innovation.

Nzui (2014) studied on information and communication technology and knowledge management at World Agroforestry Center (ICRAF) in Kenya. The study adopted a case study design. The study targeted employees at ICRAF who added up to 200 staff. A census was employed since the population was small. Primary data was collected using questionnaires. From the findings, it was established that ICT has become prevalent in managing knowledge such that more than half of the knowledge in the organization is originating or is acquired from ICT based sources including, websites, blogs, online materials and e-books. And similarly, a big portion of information and knowledge in the organization stored in ICT based systems. The

study established that ICT has a major influence on knowledge management practices in the organization with systems being well integrated and information found to be up to date and trusted. The best way to accumulate fast changing information and large amounts of data is through using modern information technological tools and systems.

Haridia (2013) studied the role of ICT in KM in India. The study adopted a descriptive research design. The study relied on questionnaires to collect primary data. The analyzed findings indicated that although India is a developing country, organizations have seen the importance of KM and have invested in ICT infrastructures to facilitate it. However, investment in ICT is not enough, since organizations must also be IT competent.

In another study by Sandström, Stockinger and Vilmark (2017) shared that leaders in organizations should encourage face to face interactions in knowledge dissemination, and they should instill the use of mobile phones and radio to transfer the knowledge has increased.

2.3.2 Knowledge Utilization Practices and Organization Performance

Organizations seek for information so as to solve their everyday challenges and problems facing them in production, service delivery and processing units (Githua, 2013). The knowledge accumulated is used in forecasting on challenges in market needs and customer preferences so as to create products and service lines that best serve the market and as such gain competitiveness (Kinyua, Muathe and Kilika, 2015).

Madeira, Vick and Nagano (2013) carried out a study on how knowledge management in the form of scientific knowledge or literature arises from innovations and the manner in which information technology is managed by organizations. The study adopted a desktop review methodology where relevant source materials were consulted. The findings indicated

that knowledge is only useful when it changes operational lines, improves the quality of products made and increasing the income earning of an enterprise. Knowledge that is stored in organizational systems and is not retrieved to inform internal efficiencies for competitive advantage may not be that useful. This is because such information is not able to inform decision making.

Njagi (2017) focused on finding out the influence that knowledge management had on performance outcomes recorded by the Kenya Tourism Board (KTB). A descriptive research design was adopted. The study relied on primary data collected using questionnaires. The target respondents comprised of employees of KTB. In total, 300 staff were targeted. Stratified random sampling was adopted to selected 120 respondents as the sample size. The study revealed that experienced staff needed to apply available knowledge more effectively and apply the right skills and knowledge on the right task for the organization to attain organizational goals. The study further noted that the manner in which knowledge is utilized in an organization can be measured differently from one organization to another as the processes are not standard. It can be measured by measuring the level of information transmission, efficiency in picking up and utilizing information, information processing efficiency and its application. This brings about knowledge utilization.

Githua (2013) focused on the Not for profit organizations within the health subsector and analyzed how they utilized knowledge management practices competitively. The study adopted a descriptive design. The targeted population comprised of 270 employees drawn from the Not for profit organizations. Stratified random sampling was used to select 90 respondents as the sample size. The study acknowledges distinct approaches applied by organizations to promote knowledge utilization. The first being raising issues on the knowledge, its sources and quality, this is because this information is used in the making of decisions in the firm and it has

the potential of making profits or losses. The second aspect is making policies that guide the knowledge management practices in the firms. This runs from creating and acquiring information and knowledge to the use and reuse of the information. The third option is looking at alternative sources of information and how best to share it for utilization and proper storage for reusing the same information in the future times. The fourth aspect on getting support from both the internal and external stakeholders in managing knowledge and creating a culture and strategies on best practices that can be adopted by the leadership and employees in an organization in using knowledge to gain competitiveness through improving performance.

Kinyua *et al.* (2015) looked at how conversion and application of knowledge affected the performance results reported by commercial banks in Kenya. The study adopted a descriptive design. The population of the study comprised of employees of KCB from its head office in Nairobi. The study purposively selected 130 staffs who formed the sample size. From the findings, it was established that knowledge conversion positively influences performance in banking and it is the first step to knowledge application. And furthermore, commercial banks should take initiatives to apply knowledge in their processes and actions so to sustain their performance in the marketplace. The application of knowledge should be embedded in the organizational structure to ensure its strict adherence by all the staffs.

Gakuo and Rotich (2017) examined the effect of strategic knowledge management on performance of commercial banks in Kenya. The study adopted a cross sectional descriptive design. The target population comprised of 43 commercial banks. The study collected primary data using questionnaires. From the analyzed findings, the study established noted that the organization structure consisting of its day to day operational routine, manuals and policies made up the key mechanisms applied in application of knowledge. Knowledge management also involved elaboration of details, infusion into the processes, and thoroughness as adopted

by the different teams within the organization. Knowledge reuse is critical in optimization of knowledge utilization within firms to sustain competitive advantage; this is because the enterprising firms compete in a knowledge-based economy for the limited resources of lack of expertise skills. A lot of information is generated every day with the development of technology and globalization of the markets.

Hongmei (2014) examined how organizations ensured optimal re-use of knowledge in their operations by considering the frameworks developed, application of emerging knowledge management tools and internal strategies. A descriptive research design was employed in the study. The study relied on primary data collected using questionnaires. From the findings, many firms invest heavily in building knowledge management systems and in the research and development sector, but few of those documents and information are kept in easily retrievable electronic formats so as to promote re-use whenever required. Lack of knowledge re-use in organizations, it may be difficult for them to recoup initial investment in such projects especially in carrying out research and development and implementation of systems to manage the knowledge. Knowledge reuse makes emphasis on usage on previously collected information by consumers.

Riungu (2015) did a study to determine how telecommunication firms in Kenya applied knowledge management practices for competitiveness. The study employed a cross sectional descriptive design. The population of the study comprised of senior management staff drawn from telecommunication firms in Kenya. In total, 150 respondents formed the population of the study. The study revealed that reuse of knowledge occurred at the individual employee level where they shared among themselves; individual trainings sought which resulted in individual knowledge seeking. There was also reuse by other employees who acted as consumers who later on transferred the knowledge. This movement of knowledge within the

confines of an organization has been defined as quasi-market in which money is not the limiting factor.

According to Muhoya (2016) audit firms in Kenya have been greatly affected by knowledge management practices. They recruit fresh graduates from institutions of higher learning, train them to equip them with necessary skills to perform their duties. However, before the audit firms can earn returns on their investments on training the staff, they leave for greener pastures. This has negatively affected the performance of audit firms in Kenya. Reusing information already saved in archives aides in better decision making, as comparison between situations, market changes, preferences and stakeholders' opinion is made possible (Riungu, 2015). Knowledge can be reused by the people who developed it or by other stakeholders, for instances in school, the knowledge can be used by the original researcher in expanding the information or it can be used by subsequent students in the learning institution. This is only made possible if the knowledge is stored in libraries and repositories and can be retrieved for confirmation.

Assouroko, Ducellier, Boutinaud and Eynard (2014) examined the relationship between reuse of knowledge in product improvement and knowledge management using semantic approach of management. The study noted that in the global industry where there is high competitiveness among companies, advancing technologies allow for storage and reuse of information. Some operational procedures if properly stored can be used in future times to gain positive results. The study notes that management systems are commonly applied in management of product life cycle as they form key components of information systems.

Owen, Burstein and Mitchell (2004) investigated on knowledge reuse and transfer in a project management environment, such that the paper looked at the project management

companies and how they managed knowledge. The study revealed that the project management companies adopted KM practices which included creation, transfer, reuse and management. In reuse, the companies used a model where knowledge is absorbed at a tactical level and flows to a strategic level. The study also revealed that reusing of information saves companies the cost of research and development, as long as knowledge is stored well. Reuse of knowledge is only possible and effective wherever there is a fit between the organization strategy, social networks, collaboration with stakeholders, corporate structure and culture and available technological appliances and systems.

2.3.3 Knowledge Sharing Practices and Organization Performance

The purpose of knowledge sharing is to help a whole organization reach its set organizational goals. The only way for the entire organization to benefit from the acquired knowledge is sharing of information with all members, both internal and external stakeholders. With advanced technological systems, it is possible that knowledge is either within the organization or outside the organization. According to Bilgihan, Barreda, Okumus and Nusair (2016) on consumer perception of knowledge-sharing in travel-related online social networks; to facilitate the sharing of knowledge and attain high performance, each and every organization must develop systems, linkages and pathways to source for knowledge. These linkages can also act as conduits for knowledge transfer. There are three important mechanisms that create conduits to sources of knowledge; these include the forming of alliances, mobility of people, and the appropriation of informal networks (Bilgihan et al., 2016).

Knowledge sharing is the mutual exchange of information and expertise across an organization (Li-Wei & Jwu-Rong, 2013). It portrays a mutual understanding that the person who possesses knowledge willingly provides this information to the knowledge recipient and

shows a greater density and unity in the teams working in the organization. Knowledge sharing entails transferring the dispersed know-how of the people in an organization more effectively and thus adding value to organization's activities and processes. Sandström et al. (2017) noted that as knowledge is passed from one person to another, it keeps being refined and enriched at the time of sharing. Sharing happens within an organization through avenues like memos, documented information in form of procedure manuals and records. The process of sharing also happens between workers of an organization utilizing avenues like discussions, forums at both formal and informal levels. There is also sharing that happens between workers of an organization with interested parties outside the four walls of an organization, mainly utilizing avenues like seminars and workshops. The process of knowledge sharing should be well established and implemented, it does not just happen in an ad hoc manner rather it should be encouraged and nurtured. Leaders in an organization play a key role in enabling sharing of knowledge through inculcation of the right culture that promotes the spirit of knowledge sharing through mentorship programs, training, peer education programs and apprenticeships (Masa'deh, Beidat & Tarhini, 2016).

Akinyi (2017) investigated the extent of application of knowledge management practices among financial institutions in Kenya by paying attention to insurance firms. The study employed a descriptive research design. The population of the study comprised of senior managers drawn from the financial institutions. The study established that knowledge sharing rides on enablers like technologies, operations and systems that kindle cooperation, enables the process of sharing to happen, and reward the workers that share knowledge. Those that apply the knowledge shared, enhance the performance of the organization and realization of expected results. Sharing practices like communities of practice by members in a common discipline, and who have a common interest, are excellent means to share practices that have been tried

and tested. This rides on the concept of improving the wheel rather than re-inventing it. Enablers like information communication technologies and its avenues like social media usually make this possible. The information shared in communities of practice can range from simple details to complex procedures that have been invented and are successful in accomplishing the complex tasks.

Karani (2015) suggests that one of the practices of knowledge management is sharing of ideas, information and created knowledge with other stakeholders within the firm. The study revealed that the mobile telephone companies in Kenya have adopted measures in passing on information from one source to another. Older and more experienced employees in the mobile companies are expected to pass along the information on products, service delivery and operations of the company to newer and the less experienced employees. In addition, the study shares that knowledge the findings indicated that it will be difficult to share knowledge unless the person receiving it internalizes it and applied it in action. The rate at which knew knowledge gets absorbed depends the respect held for the source, the environment in which it is shared, appropriateness of the knowledge and how it contributes to organizational competitiveness.

Knowledge sharing is an important part in the knowledge management and practices that yield higher returns in terms of productivity, effective operations and returns. Matin and Sabagh (2015) investigated on KM and performance of Iranian export companies. The study adopted a descriptive design. The population of the study comprised of managers of the studied companies. In total, 90 respondents were purposively sampled out to for the sampler size of the study. The findings of the study indicated that it is not enough for organizations to depend on their employees together with training systems that focus on picking out employees with specific knowledge capabilities and expertise but a shift in focus would be teamwork and cohesiveness with sharing of information at the workplace. Both tacit and explicit knowledge

needs to be passed on to all employees of a company so as to increase their performance. In essence, these export companies and indeed any organizations must look for measures for sharing expertise knowledge from the experts who have it to novices who need to know. Adopting knowledge management practices would help facilitate sharing of knowledge that improved organizational performance.

2.3.4 Knowledge Ownership Practices and Organization Performance

Knowledge management has become a very important concept in the business world. There is no business or economic issue that is more important to organizational long-term competitiveness and standard of living than making the knowledge worker more productive as knowledge is considered one sure source of lasting competitive advantage. Muthee (2014) carried out a study on the knowledge management as a strategic tool for competitive advantage at Safaricom Limited Kenya. The study adopted a case study design. The target population of the study comprised of senior managers at Safaricom. The researcher purposively picked 50 managers to form the sample size. Questionnaires helped in collection of data for the study. The study revealed that knowledge ownership looks at aspects of patents, copyrights and trademarks.

In commercial environment, knowledge must be put into work in three primary areas; customer needs, concern processes and body of knowledge. Li, Yuan, Ning and Li-Ying (2015) studied knowledge sharing and affective commitment: the mediating role of psychological ownership, the commercial entities take a lot of time, financial and human resources to gain this knowledge. Many big corporations and multinational companies invest heavily in their research and development departments in quest for sourcing for new information on markets, consumers, product enhancements and new channels of service delivery. Knowledge has been

seen as a source of competitive advantage hence companies protect their information by paying for special licensing, patenting their innovations and inventions and copywriting their works. This is to avoid competitors from stealing their information and gaining an upper hand in the industry and at the market place.

Each individual has their own knowledge and expertise which they are protective of as there are no clear mechanisms to motivate and encourage them to share and reuse knowledge as well as generate new knowledge that could add value to the individual performance and overall organizational output (Massingham, 2014).

In order to survive in a competitive business and the changing market environment, organizations need to maintain their own unique knowledge and innovation. Knowledge itself and the ability to create and utilize knowledge are the most important considerations for an organization's sustainable competitive advantage. The owner of the knowledge has the right to hoard or share the knowledge that they have (Rechberg & Syed, 2013). The rapid evolution of technology has accelerated the emergence of knowledge ownership. As both employers and employees have realized the value of knowledge and intellectual property, arguments over ownership have increased and become the most important issue in the field of employment law. Attempts to claim and protect the rights over intellectual property have resulted in the widespread use of legal force using intellectual property rights. This legal force has raised disputes particularly with the concerns over human rights such as privacy rights.

Intellectual property rights have been enforced by many organizations to ensure that the information and knowledge they hold does not spread to other industries and competition in the same sector of the economy. Information privacy law is the law that allows individuals to have control over their information with respect to its use and disclosure. Firms have their

employees sign disclosure agreements that prevent them from sharing key information on manufacturing components, operating procedures, ingredients of elements and organizational structure, culture and working operations. Employees are bound by the agreement whether they work in that firm and even after they leave the firm. This action ensures that pertinent information is not shared with competition and others in the market (Nesheim & Gressgard, 2014).

2.4 Knowledge Gap

Knowledge management covers aspects that source, process and utilize the KM practices in an effort to create innovation and invention of new products, services and delivery channels. Most of these studies covered commercial aspects of knowledge management such as Njagi (2017) focused on finding out the influence that knowledge management had on performance outcomes recorded by the Kenya Tourism Board (KTB); Akinyi (2017) investigated the extent of application of knowledge management practices among financial institutions in Kenya by paying attention to insurance firms; Muthee (2014) in the study on the knowledge management as a strategic tool for competitive advantage at Safaricom Limited Kenya.

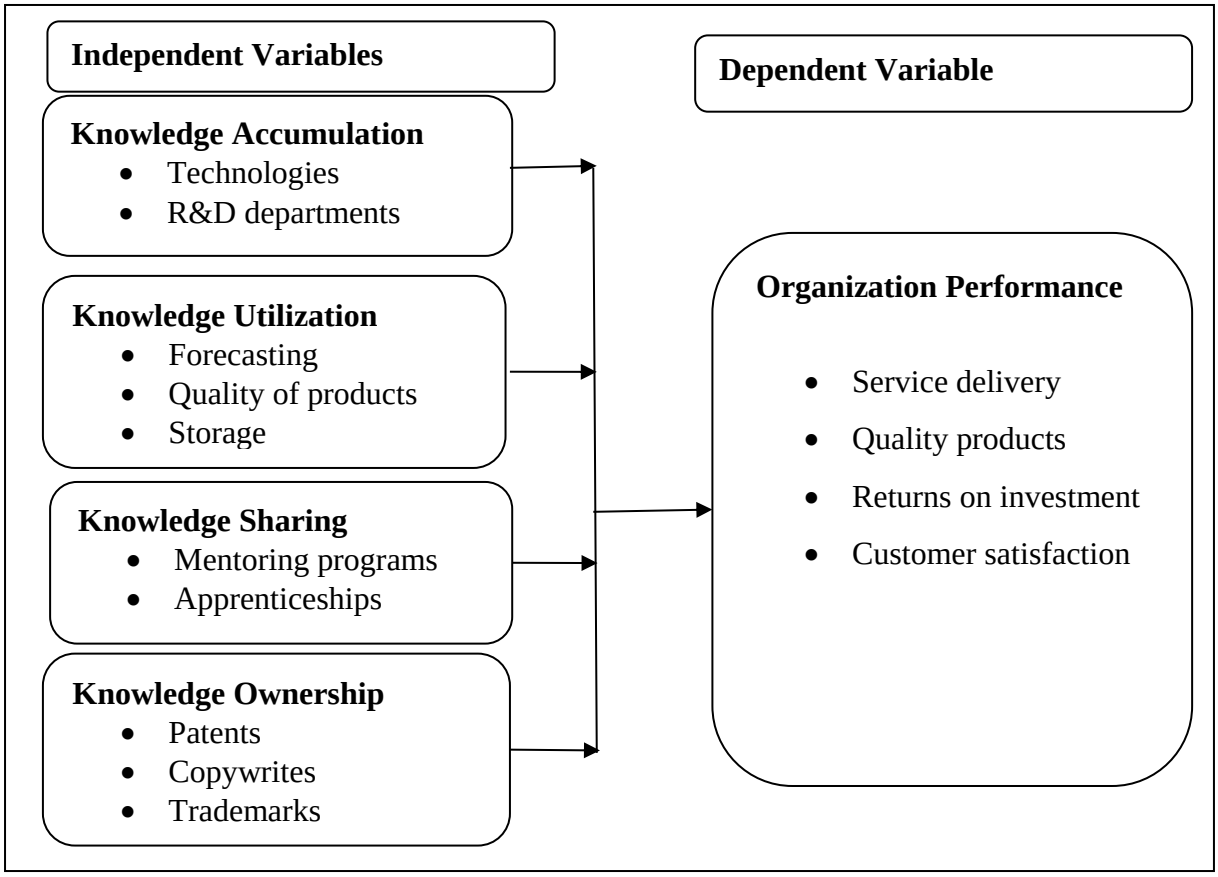
Other studies have covered knowledge management and innovation such as Madeira, Vick and Nagano (2013) while Bilgihan, Barreda, Okumus and Nusair (2016) on consumer perception of knowledge-sharing in travel-related online social networks is using ICT tools or Li, Yuan, Ning and Li-Ying (2015) links KM to commitment.

There is a created gap as none of these scholars covered knowledge management practices and its effect on organization performance in government institutions. This study determined the effect knowledge management practices on organizational performance in the selected state corporations in Kenya.

2.5 Conceptual Framework

FIGURE 2.1

Conceptual Framework



Source: Author (2018)

TABLE 2.1
Operationalization of Variables

Objective	Variable Type	Indicators	Type of data
To determine the effect of knowledge accumulation on organization performance in selected state corporations in Kenya	Independent Knowledge accumulation	• Technologies • R&D departments • Knowledge stocks • Knowledge Assets	Descriptive Regression
To establish the effect of knowledge utilization on organization	Independent	• Forecasting • Quality of products	Descriptive Regression

performance in selected state corporations in Kenya	Knowledge utilization	• Electronic Repository • Libraries	
To establish the effect of knowledge sharing on organization performance in selected state corporations in Kenya	Independent Knowledge sharing	• Mentoring programs • Apprenticeships • Secondment	Descriptive Regression
To establish the effect of knowledge ownership on organization performance in selected state corporations in Kenya	Independent Knowledge ownership	• Patents • Copy right • Trademarks	Descriptive Regression
Organization performance in selected state corporations in Kenya	Dependent Organization performance	• Service delivery • Quality products • Increased market share • Returns on investment	Descriptive Regression

2.7 Research Hypothesis

The study adopted null hypothesis where;

H_{01}: *Knowledge accumulation has no significant effect on organization performance in selected state corporations in Kenya*

H_{02}: *Knowledge utilization has no significant effect on organization performance in selected state corporations in Kenya*

H_{03}: *Knowledge sharing has no significant effect on organization performance in selected state corporations in Kenya*

H_{04}: *Knowledge ownership has no significant effect on organization performance in selected state corporations in Kenya*

CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the methodology that was used to collecting data for the study. It specifically discusses the research design, population size and sample that were used. The researcher also discusses how the data was collected and analysed as well as give details of the models or programmes that were used in determining the knowledge management practices and their effect on performance of the selected state corporations in Kenya.

3.2 Research Design

A research design is the blueprint that guides the researcher in the process of answering the questions that define the purpose of the research. It further checks the consistency between the research questions and the proposed research method (Yin, 2017). There are three main research designs namely; descriptive research, exploratory research and causal research. Descriptive research describes a phenomenon as it exists, by taking raw data and tabulating it into a useable format (Creswell, 2013). Exploratory research refers to sections of a procedure that aids the researcher maintain a form of control over all variables affecting results of a particular experiment. Whereas causal research is an effect that occurs when variation in the independent variable results in the variation of the depended variable.

The study adopted a descriptive research design since the information is collected without changing the environment. The design that was adapted answered five basic questions: who, what, why, when and where (Cox, 2013). The design has been deemed appropriate because of the observational nature of data that was collected from respondents who are

employees working in the state corporations as they give their insight on knowledge management practices and its impact on organizational performance.

3.3 Target Population

Target population refers to the entire group of individuals or objects to which researchers are interested in collecting information and generalizing of the findings to draw conclusions and recommendations (Bryman & Bell, 2015). The target population usually has varying characteristics and it is also known as the theoretical population. The target population is the population which the researchers are concerned about in the study (Clark & Creswell, 2014). In this study, the target population is the 179 State Corporations in Kenya. (Appendix II).

A population element on the other hand is the individual participant or object on which the measurement is taken. For this study the researcher targeted the Heads of Department responsible for Knowledge management in each of the State Corporations.

3.4 Sample size and Sampling Design

Sampling refers to a process of selecting a number of individuals in a manner that the selected individuals represent the larger group from which the sample has been selected (Matthews & Ross, 2014).

The study adopted a selection approach in choosing participating State Corporations based on those that are Head quartered in Nairobi. Thus, the sample size was 155 State Corporations which surpasses the sample size of between 10-30% of the population that is deemed adequate for generalisation of the study findings to the entire population according to Bryman and Bell (2015).

Thus, a total number of 155 Heads of Department responsible for Knowledge management in each of the state corporations were sampled. This was the Knowledge Management manager, Talent Management manager or Human Resource manager as the position may be in the targeted organizations. Thus, one questionnaire was issued to the respective Head of Department in each selected 155 State Corporation to eliminate data redundancies.

3.5 Instrumentation and Data collection

The study used questionnaires in collecting primary data from the respondents. The questionnaire was structured to contained closed-ended questions that used a five-point Likert scale for standardization of the respondents (Lewis, 2015).

The questionnaires were divided into six sections; A, B, C, D, E and F covering the background information of the respondents and the four study objectives (Knowledge Accumulation, Knowledge Utilization, Knowledge Sharing and Knowledge Ownership). The questionnaire used the five-point Likert scale where: 1= Not at all; 2 = Little Extent; 3= Moderate Extent; 4= Large Extent and 5= Very Large Extent.

Questionnaires were issued to respondents on a drop and pick latter method. At the point of dropping questionnaires, the researcher noted the contact information of respondents. A follow up was made using the identified contact details of respondents to answer any concerns and issue that may have arose while filling in questionnaires. A drop and pick latter method ensured that respondents are not interfered with their daily operations since they were perceived to be busy with their daily operations. This also improved the response rate of the study.

3.6 Validity and Reliability of Research

This section presents a discussion on the validity and reliability tests that the researcher carried out to make sure that the instrument was valid and reliable in collecting information that responded to the research questions. According to Creswell (2013) a pilot test helps to test the reliability and validity of data collection instruments. According to Matthews and Ross (2014) a pilot study can comprise of between 4-10 members of the target population whose response was used to improve on the data collection instrument. In this study, the pilot study comprised of 5 staffs from 5 state corporations. These respondents were not be included in the final sample size of the study to eliminate biasness.

Validity determines whether the research truly measures that which it was intended to measure or how truthful the research results are (Clark & Creswell, 2014). Validity is high if the study contains what one wants to study and nothing else. Validity takes four forms: face, construct, internal and external. Construct validity refers to data collection, internal validity is a link between theory and empirical research and external validity refers to the domain to which the findings can be generalized. Construct validity was addressed by administering the questionnaires to the state corporation employees and those who took part in the pilot test were not be included in the final study.

Reliability demonstrates that the study can be repeated with the same outcome. Flick (2015) defines reliability as the extent to which results are consistent over time and an accurate representation of the total population under study. If the results of a study can be reproduced under a similar methodology, then the research instrument is considered to be reliable. The researcher adopted the Cronbach alpha which has a threshold of 0.7. This ensured that the

instrument collected reliable and valid data. Cronbach's alpha of well above 0.7 implies that the instruments were sufficiently reliable for the measurement (Lewis, 2015).

3.7 Data Analysis and Presentation

The returned questionnaires were checked for consistency, cleaned, and the useful ones coded and analysed using the Statistical Package for Social Scientists (SPSS V. 23.0) computer software. The researcher analysed the quantitative data using descriptive statistics including: frequencies, percentages, means and standard deviations.

Pearson's correlations analysis was conducted at 95% confidence interval and 5% confidence level 2-tailed to determine the extent to which the knowledge management practices affect organizational performance in state corporations. If the findings were positive it showed positive correlation between the study variables.

Multiple regression analysis was conducted to test the relationship between the independent variables (Knowledge Accumulation, Knowledge Utilization, Knowledge Sharing and Knowledge Ownership) and the dependent variable of (Organizational performance).

In addition, the study adopted multiple regression analysis using the model below:

$$\mathbf{Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon_i}$$

Where **Y** = Organizational Performance

$\mathbf{X_1}$ = Knowledge Accumulation

$\mathbf{X_2}$= Knowledge Utilization

$\mathbf{X_3}$= Knowledge Sharing

$\mathbf{X_4}$= Knowledge Ownership

$\boldsymbol{\varepsilon}$ = Error Term

β_0= Constant in the regression model that shows the determining effect of knowledge management practices on organizational performance

The study findings were presented in form of tables, charts and discussions by using percentages and frequencies that facilitated comparisons and further analysis (Yin, 2017).

3.8 Ethical Considerations

Ethics is about norms governing human conduct which have a significant impact on human welfare (Punch, 2013). It involves making judgment about right and wrong behavior during the research period. Upholding ethical standards not only ensures that the research is carried out in an appropriate manner, but more so adds onto the integrity of the findings.

The ethical considerations when dealing with the anticipated institutions was addressed. The researcher sought authorization from the respective state corporations before commencing of the data collection exercise. In addition, the researcher obtained an introduction letter from KCA University to confirm to the respondents that the data was used for academic purposes only.

Data is the prime component of any research and was thus guarded with care. In ensuring the quality of data gathering, the research assistant enlisted underwent orientation. Data retention was upheld by storing the collected data in both hard and soft copy for ease of instances when one may need to refer back to the data.

Most importantly, the human subjects were protected. The respondents remained anonymous and confidentiality on their participation and responses maintained. The state corporations on the other benefited from the researchers' confidentiality as the result obtained was only used for this research purpose only.

Lastly the researcher-maintained experiment responsibility by responding to any queries honesty.

3.9 Diagnostic Test

Before carrying a regression analysis, the researcher conducted diagnostic tests to determine the suitability of data set for regressing. The diagnostics were used to test the general information about the respondents and how it affected the main objective of the study in knowledge management and organizational performance. The three diagnostic tests that were conducted included; Normality, Multicollinearity and Heterokedasticity.

3.9.1 Normality test

Normality test is done to test how likely it is for a random variable underlying the data set to be normally distributed. Normality is the likelihood that the collected data relates to a certain phenomenon of normally distributed over the population sample (Kothari, 2004). This study tested for normality using the Shapiro-Wilk Test. Data analysis proceeded if the kurtosis and Skewness is between +2 and -2 as this was an indicator that the data has a Normal distribution (Kothari, 2004).

3.9.2 Multicollinearity Test

Multicollinearity (also collinearity) is a phenomenon in which one predictor variable in a multiple regression model can be linearly predicted from the others with a substantial degree of accuracy. It is a situation where one of the dependent variables in the model is highly related with the independent variable. It was checked using the Variance Inflation Factor VIF, to show how the variables are correlated. If VIF is between 1-10, the variables are not correlated and hence the test deems it valid to proceed and analyze the data

3.9.3 Heteroskedasticity Test

Heteroscedasticity occurs when the random variables have different variances (Godfrey, 2008). To test for Heteroskedasticity, Test Glejser was used where the researcher regressed the absolute residual value of the independent variable with the regression equation. If the significance is greater than 0.05, then there is no heteroscedasticity.

CHAPTER FOUR
DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1 Introduction

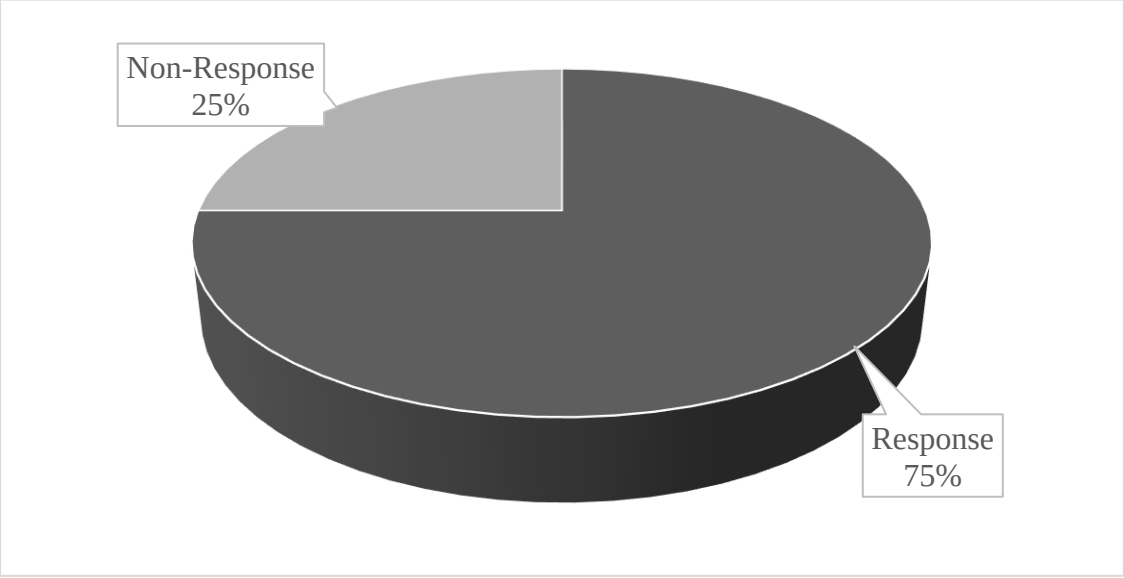
This chapter presents the findings of the collected data. The data was collected by use of structured questionnaires and coded into SPSS Version 23.0 for analysis and presentation. The findings of the study are indicated in subsequent sections.

4.1.1 Response Rate

The researcher distributed 155 questionnaires on State Corporations in Kenya, 117 questionnaires were dully filled and returned to the questionnaires. This gave a response rate of 75% an indication that the response rate was sufficient for the study. The findings are shown in Figure 4.1.

FIGURE 4.1

Response Rate



The findings show that majority of the respondents were corporative and filled the questionnaires. This gave a sufficient response rate suitable to generalize study findings of the entire population of interests. This is supported by Mugenda (2008) who states that a response rate of above 50% is deemed sufficient.

4.1.2 Reliability Test

The study carried out a pilot test to establish the reliability of the research instruments. A Cronbach alpha was computed as shown in Table 4.1.

TABLE 4.1

Reliability Test

Variable	Number of Items	Cronbach Alpha
Knowledge Accumulation Practices	5	0.895
Knowledge Utilization Practices	5	0.827
Knowledge Sharing Practices	5	0.869
Knowledge Ownership Practices	5	0.823

The findings show that knowledge accumulation practices had a Cronbach alpha coefficient of 0.895, knowledge utilization practices had a Cronbach alpha coefficient of 0.827, knowledge sharing practices had a Cronbach alpha coefficient of 0.869 and knowledge ownership practices had a Cronbach alpha coefficient of 0.823. It can be seen that all the variables had a Cronbach alpha of above 0.7, an indication that questionnaires were sufficient and reliable. This is supported by Cronbach (1951) who indicates that Cronbach Coefficients of above 0.7 indicates reliable scale.

4.2 Demographic Information

The researcher asked the respondents to indicate their demographic information regarding: years worked in state department, years served in the public service and highest level of

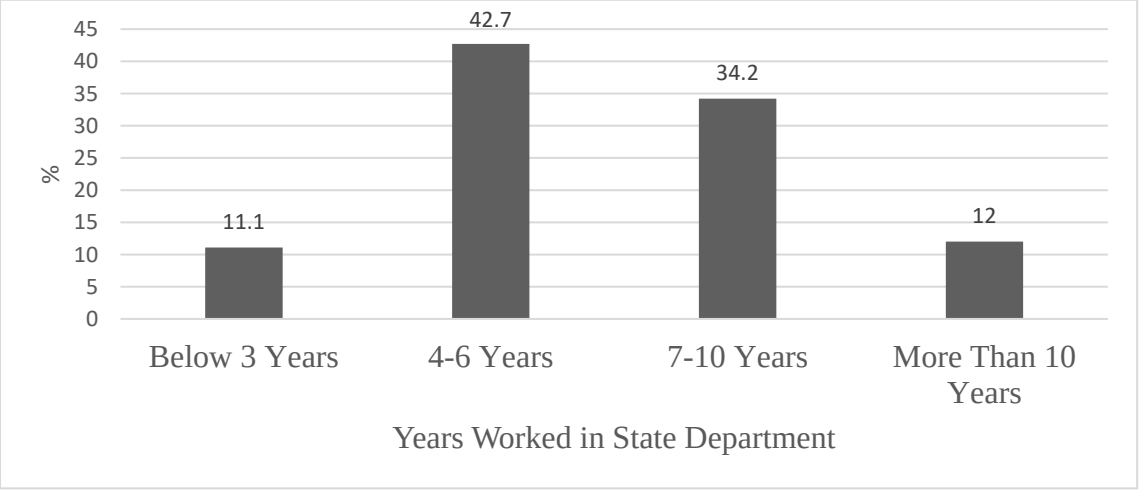
education to establish their appropriateness in the study. This was aimed at establishing the suitability of respondents to provide information for the completion of the current study. The findings are as shown in subsequent sections.

4.2.1 Years Worked in State Department

The findings of the distribution of years worked in state department of respondents are as shown in Figure 4.2.

FIGURE 4.2

Years Worked in State Department



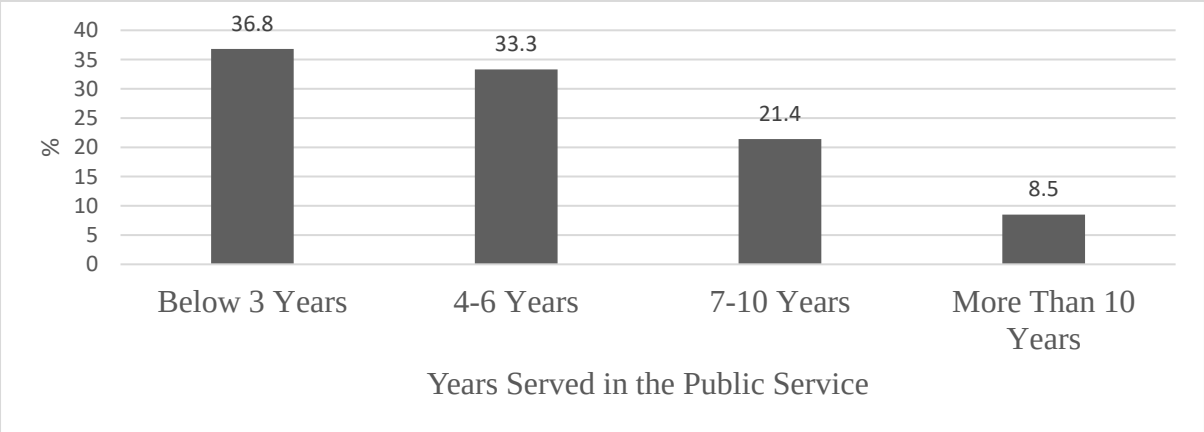
The findings in Figure 4.2 show that 42.7% of the respondents had worked in state department for a period between 4-6 years, 34.2% had worked for a period between 7-10 years, 12% had worked for more than 10 years and 11.1% had worked in state department below 3 years. The findings show that majority of the respondents had worked in state department for more than 4 years an indication that they were conversant with their organization and how operations were carried out hence gave reliable data.

4.2.2 Years Served in the Public Service

The respondent's distribution of years served in the public service as shown in Figure 4.3.

FIGURE 4.3

Years Served in the Public Service



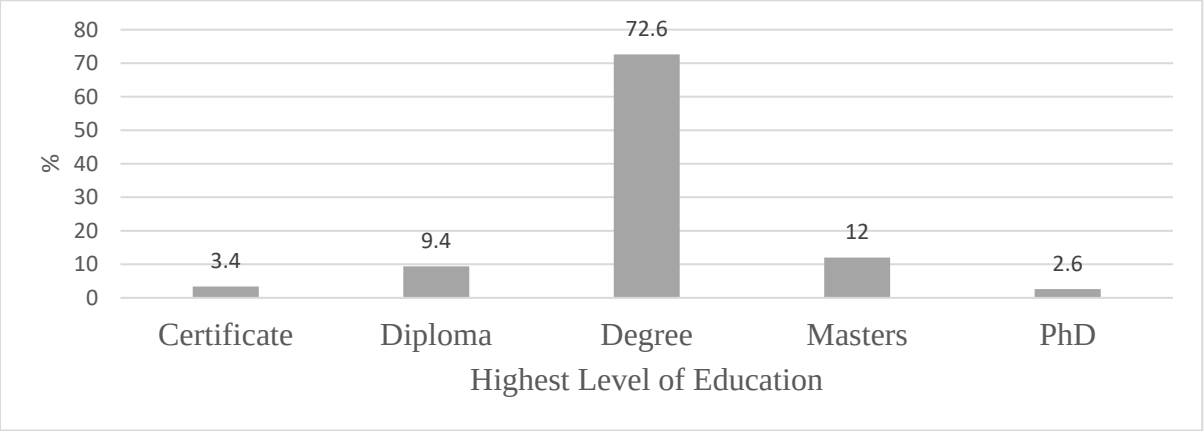
The findings pointed out that 36.8% of the respondents had served in the public service below 3 years, 33.3% had served for 4-6 years, 21.4% had served for 7-10 years and 8.5% had a served for more than 10 years. This shows that the respondents had severed in the public service long enough to understand how they operated. Therefore, they were more knowledgeable on the aspect of this study.

4.2.3 Highest Level of Education

The respondents were requested to indicate their highest level of education. The findings are indicated in Table 4.4.

TABLE 4.2

Highest Level of Education



The findings show that majority of the respondents 72.6% highest level of education was a degree followed by 12% who had masters, a further 9.4% had diploma, 3.4% had certificate and 2.6% had PhD. The findings show that SC employed competent respondents due to their increased level of professionalism.

4.3 Descriptive Statistics

The study computed out descriptive statistics on the following variables; knowledge accumulation practices, knowledge utilization practices, knowledge sharing practices and knowledge ownership practices. The findings are as follows.

4.3.1 Knowledge Accumulation Practices and Organization Performance

The respondents were asked to indicate their level of agreement on selected statements by the researcher. A Likert scale of 1-5 where; 1 - strongly disagree; 2 -disagree; 3 - moderate extent; 4 - agree; 5 - strongly agree was used. The findings are shown in Table 4.3.

TABLE 4.3

Knowledge Accumulation Practices and Organization Performance

	Mean	Std. Dev
Our organization has diverse channels of collecting key information on its processes	4.15	.726
Our organization refines its internal processes in line with the strengths of its staff	3.74	.892
Our organization conducts internal experiments to improve service delivery to its customers	3.93	.652
Our organization collects customer feedback to inform its future decisions	3.48	.847
Our organization uses customer feedback to improve its processes	3.95	.792
Our organization hires technically qualified consultants to work together with our staff in projects not performed by internal staff	3.92	.744
Our organization trains its staff regularly	4.04	.770
Our organization hires external experts to train our staff	3.75	.870
Our organization increases its knowledge by sponsoring staff to trade fairs	4.11	.684
Our firm sponsors its staff to other parts of the world to benchmark our services	3.54	.713
Our organizations organize forums with research institutions for exchange of knowledge	3.76	.906
Our organization engages in research to generate new knowledge	3.83	.742

The findings show that majority of the respondents agreed that state corporations had diverse channels of collecting key information on its processes as indicated by a mean of 4.15 with standard deviation of 0.726. State Corporation refined its internal processes in line with the strengths of its staff as supported by a mean of 3.74 with standard deviation of 0.892. State corporations conducted internal experiments to improve service delivery to its customers as supported by a mean of 3.93 with standard deviation of 0.652. State corporations collected customer feedback to inform its future decisions by a mean of 3.48 with standard deviation of 0.847. This is supported by Van Long, Soubeyran and Soubeyran (2014) who stated that knowledge accumulation follows a cycle where it increases at the start within an organization, peaks and starts to fall over a certain time frame.

Respondents agreed that state corporation used customer feedback to improve its processes as supported by a mean of 3.95 with standard deviation of 0.792. Respondents indicated that their organization hired technically qualified consultants to work together with our staff in projects not performed by internal staff as supported by a mean of 3.92 with standard deviation of 0.744. Respondents agreed that their organization trained its staff regularly as supported by a mean of 4.04 with standard deviation of 0.770. State corporations hired external experts to train their staff by a mean of 3.75 with standard deviation of 0.870. This agrees with Ly and Lai (2017) who stated that knowledge is considered to be a useful tool for a firm's competitiveness and sustainability

Respondents indicated that their organization increased its knowledge by sponsoring staff to trade fairs as supported by a mean of 4.11 with standard deviation of 0.684. State Corporation sponsored its staff to other parts of the world to benchmark their services as supported by a mean of 3.54 with standard deviation of 0.713. Respondents indicated that their organizations organized forums with research institutions for exchange of knowledge as supported by a mean of 3.76 with standard deviation of 0.906. State corporations engaged in research to generate new knowledge by a mean of 3.83 with standard deviation of 0.742. Haridia (2013) stated that although India is a developing country, organizations have seen the importance of KM and have invested in ICT infrastructures to facilitate it.

4.3.2 Knowledge Utilization Practices and Organization Performance

Respondents were requested to indicate their level of agreement with each statement on a scale of 1-5 where; 1 - strongly disagree; 2 -disagree; 3 - moderate extent; 4 - agree; 5 - strongly agree. The findings are indicated in Table 4.4.

TABLE 4.4

Knowledge Utilization Practices and Organization Performance

	Mean	Std. Dev
Our organization uses knowledge acquired in improving its internal processes	3.89	.769
Our organization uses the knowledge it possesses to predict the future	3.66	1.00
Our organization uses knowledge it has to improve customer satisfaction	3.73	.834
Our organization allocates right qualified persons to do specialized jobs	3.98	.870
Our organization has used extensive knowledge it has to develop policies to guide task performance	4.09	.694
Our organization applies the knowledge it has in business processes	3.95	.687
Our organization has utilized its knowledge in optimizing its structure	4.00	.895
Our organization has utilized its knowledge to departmentalize its operations	3.53	.713
Our organization reuses its knowledge to strengthen its operations	4.09	.524
Our organization uses its knowledge to influence the kind of culture it wants to prevail	3.52	.815
Our organization collaborates with other stakeholders in ensuring competitiveness	4.05	.963

The findings show that state corporation used knowledge acquired in improving its internal processes by a mean of 3.89 with standard deviation of 0.769. Respondents indicated that their organization used the knowledge it possessed to predict the future as supported by a mean of 3.66 with standard deviation of 1.00. State Corporation used knowledge it had to improve customer satisfaction as supported by a mean of 3.73 with standard deviation of 0.834. Respondents agreed that their organization allocated right qualified persons to do specialized jobs as supported by a mean of 3.98 with standard deviation of 0.870. This is supported by Madeira, Vick and Nagano (2013) who revealed that knowledge is only useful when it changes operational lines, improves the quality of products made and increasing the income earning of an enterprise.

Respondents agreed that their organization had used extensive knowledge it had to develop policies to guide task performance as indicated by a mean of 4.09 with standard

deviation of 0.694. Respondents agreed that their organization applied the knowledge it had in business processes as supported by a mean of 3.95 with standard deviation of 0.687. State corporations had utilized its knowledge in optimizing its structure by a mean of 4.00 with standard deviation of .895. State corporations had utilized its knowledge to departmentalize its operations as supported by a mean of 3.53 with standard deviation of 0.713. This agrees with Njagi (2017) who established that experienced staff needed to apply available knowledge more effectively and apply the right skills and knowledge on the right task for the organization to attain organizational goals.

The study further found out that respondents agreed that their organization reused its knowledge to strengthen its operations as supported by a mean of 4.09 with standard deviation of 0.524. State corporations used its knowledge to influence the kind of culture it wanted to prevail as supported by a mean of 3.52 with standard deviation of 0.815. Respondents indicated that their organization collaborated with other stakeholders in ensuring competitiveness as supported by a mean of 4.05 with standard deviation of 0.963. This is supported by Kinyua *et al.* (2015) who revealed that knowledge conversion positively influences performance in banking and it is the first step to knowledge application.

4.3.3 Knowledge Sharing Practices and Organization Performance

Respondents were asked to indicate their level of agreement on selected statements on knowledge sharing practices. A scale of 1-5 was used, where; 1 - strongly disagree; 2 -disagree; 3 - moderate extent; 4 - agree; 5 - strongly agree. The findings are shown in Table 4.5.

TABLE 4.5

Knowledge Sharing Practices and Organization Performance

	Mean	Std. Dev
Our organization holds sessions to share new developments	4.34	.832
Our organization organizes regular employee trainings	3.87	.924
Our organizations encourage on the job training for its staff	4.05	.807
Our organization encourages mentorship of junior employees	4.12	.725
Our organizations have proper plans for conduction orientations and inductions	3.87	.782
Our organization organizes seminars for its staff	4.02	.845
Our organization approves secondment of employees to other departments	3.60	.830
Our organization encourages teamwork among employees	4.16	.840
Our organization holds regular town hall meetings	3.87	.825
Our organization organizes regular internal trainings for its staff	4.08	.749
Our organization has clear knowledge flow paths across all departments	3.63	.857
Our organization has established a culture that promotes sharing of knowledge	4.15	.815
Our organization has apprenticeship programs	3.92	.852

The findings in Table 4.5 show that respondents indicated that their organization held sessions to share new developments as shown by a mean of 4.34 with standard deviation of 0.832. State corporations organized regular employee trainings by a mean of 3.87 with standard deviation of 0.924. State corporations encouraged on the job training for its staff as shown by a mean of 4.05 with standard deviation of 0.807. State corporations encouraged mentorship of junior employees as indicated by a mean of 4.12 with standard deviation of 0.782. Respondents indicated that their organizations had proper plans for conduction orientations and inductions by a mean of 3.87 with standard deviation of 0.782. Wu & Lin (2013) stated that knowledge sharing is the mutual exchange of information and expertise across an organization.

Respondents agreed that their organization approved secondment of employees to other departments by a mean of 3.60 with standard deviation of 0.830. State corporations encouraged teamwork among employees as shown by a mean of 4.16 with standard deviation of 0.840. Respondents indicated that their organization held regular town hall meetings as shown by a

mean of 3.87 with standard deviation of 0.825. Sandström et al. (2017) noted that as knowledge is passed from one person to another, it keeps being refined and enriched at the time of sharing. Sharing happens within an organization through avenues like memos, documented information in form of procedure manuals and records.

Respondents indicated that their organization organized regular internal trainings for its staff as supported by a mean of 4.08 with standard deviation of 0.749. State corporations had clear knowledge flow paths across all departments as indicated by a mean of 3.63 with standard deviation of 0.857. Respondents indicated that their organizations had established a culture that promoted sharing of knowledge as supported by a mean of 4.15 with standard deviation of 0.815. State corporations had apprenticeship programs as supported by a mean of 3.92 with standard deviation of 0.852. Karani (2015) revealed that the mobile telephone companies in Kenya have adopted measures in passing on information from one source to another.

4.3.4 Knowledge Ownership Practices and Organization Performance

Respondents were asked to indicate how knowledge ownership practices affected organizational performance of State Corporation. A scale of 1-5 was used; the findings are indicated in Table 4.6.

TABLE 4.6

Knowledge Ownership Practices and Organization Performance

	Mean	Std. Dev
Our organization has patented its knowledge	4.32	.640
Our organization has copyrights for its knowledge	3.85	.930
Our organization has several trademarks for its knowledge	4.18	.764
Our organization has classified access to its accumulated knowledge	3.69	.593
Our organization has a clear audit trail of individuals accessing stored knowledge at all times	3.46	.825
Our organization has stored adequate stock of knowledge	3.57	.722
Our employees have signed disclosure agreements that prevent them from sharing key information on the organization	3.86	.489
Employees are bound by the signed agreement while still working here and after they leave the organization	3.74	.559

The findings pointed out that State Corporations had patented its knowledge as supported by a mean of 4.32 with standard deviation of 0.640. State Corporation had copyrights for its knowledge as supported by a mean of 3.85 with standard deviation of 0.930. Respondents agreed that their organization had several trademarks for its knowledge as indicated by a mean of 4.18 with standard deviation of 0.764. State Corporation had classified access to its accumulated knowledge as supported by a mean of 3.69 with standard deviation of 0.593. This is supported by Muthee (2014) who further revealing that knowledge ownership looks at aspects of patents, copyrights and trademarks.

The study further established that state corporation had a clear audit trail of individuals accessing stored knowledge at all times as supported by a mean of 3.46 with standard deviation of 0.825. Respondents agreed that their organization had stored adequate stock of knowledge as indicated by a mean of 3.57 with standard deviation of 0.722. State corporation employees had signed disclosure agreements that prevent them from sharing key information on the organization by a mean of 3.86 with standard deviation of 0.489. Employees were bound by the signed agreement while still working at State Corporation and after they left the

organization by a mean of 3.74 with standard deviation of 0.559. The owner of the knowledge has the right to hoard or share the knowledge that they have (Rechberg & Syed, 2013).

4.3.5 Organization Performance

Several statements of organizational performance were selected by the researcher. Respondents were requested to indicate their agreement on a Likert Scale of 1-5. The findings are indicated in Table 4.7.

TABLE 4.7

Organization Performance

	Mean	Std. Dev
Our organization has continuously improved service delivery over the last five years	3.89	.769
Our organization has delivered quality products / services to customers	3.66	1.00
Our organization has realized improved returns on its investment	3.73	.834
Our organization has registered improved customer satisfaction	3.98	.870

The findings pointed out that State Corporations had continuously improved service delivery over the last five years as supported by a mean of 3.89 with standard deviation of 0.769. State corporations had delivered quality products / services to customers as supported by a mean of 3.66 with standard deviation of 1.00. Respondents agreed that that their organization had realized improved returns on its investment as supported by a mean of 3.73 with standard deviation of 0.834. State corporations had registered improved customer satisfaction as supported by a mean of 3.98 with standard deviation of 0.870. This agrees with Karani (2015) who suggests that older and more experienced employees in the mobile companies are expected to pass along the information on products, service delivery and operations of the company to newer and the less experienced employees. Similarly, organizations sought for information so

as to solve their everyday challenges and problems facing them in production, service delivery and processing units (Githua, 2013).

4.4 Diagnostic Tests

The researcher conducted diagnostic tests to establish the how the data sets were suitable for analysis. The following tests were conducted; normality, multicollinearity, and heteroscedasticity. Normality test was done to ascertain whether the data set had a normal distribution. Multicollinearity test was conducted to ensure that none of the variables of the study was correlated with each other. Heteroscedasticity test on the other hand sought to determine whether residuals of a regression have changing variance.

4.4.1 Normality Test

The researcher conducted normality test using Shapiro-Wilk Test. The findings are as shown in Table 4.8.

Table 4.8

Shapiro-Wilk Test

	Shapiro-Wilk		
	Statistic	**df**	**Sig.**
Organization performance	.899	117	.000
Knowledge Utilization Practices	.914	117	.000
Knowledge Sharing Practices	.866	117	.000
Knowledge Ownership Practices	.947	117	.000
Knowledge Accumulation Practices	.952	117	.000

The findings in Table 4.8 show that significance levels of all the study variables were less than 0.05. This indicates that the data set was a normal distribution.

The researcher further conducted a normality test by use of kurtosis and skewness. The findings are shown in Table 4.9

TABLE 4.9

Kurtosis and Skewness Table

	Skewness		Kurtosis	
	Statistic	**Std. Error**	**Statistic**	**Std. Error**
Knowledge Utilization Practices	.129	.224	-1.246	.444
Knowledge Sharing Practices	.851	.224	-.279	.444
Knowledge Ownership Practices	-.367	.224	-.593	.444
Knowledge Accumulation Practices	.427	.224	-.536	.444

The findings in Table 4.9 pointed out that all the statistic values lied between +2 and -2, this shows that all the variables were normally distributed. This statement is supported by Kothari (2004) who states that if the kurtosis and skewness is between +2 and -2, as this indicates, the data has a Normal distribution. With this confirmation, the researcher thus proceeds to an run other successful statistical tests.

4.4.2 Multicollinearity

In order to establish how the variables correlated, multicollinearity rest was tested using Variance of Inflation Factor VIF. The findings are shown in Table 4.10.

TABLE 4.10

Multicollinearity Test

	Collinearity Statistics	
Model	**Tolerance**	**VIF**
Knowledge Accumulation Practices	.127	7.897
Knowledge Utilization Practices	.459	2.179
Knowledge Sharing Practices	.212	4.714
Knowledge Ownership Practices	.300	3.339

The researcher found out that knowledge accumulation practices had a VIF of 7.897, knowledge utilization practices had a VIF of 2.179, knowledge sharing practices had a VIF of 4.714 and knowledge ownership practices had a VIF of 3.339. Since all the VIF coefficients values ranged between 1-10, the variables were not correlated and hence the test was deemed valid to proceed and analyze the data.

4.4.3 Heteroskedasticity Test

The researcher conducted a heteroskedasticity test to establish the presence of heteroscedasticity. The findings are shown in Table 4.11.

TABLE 4.11

Heteroscedasticity

	Unstandardized Coefficients		Standardized Coefficients		
Model	**B**	**Std. Error**	**Beta**	**t**	**Sig.**
(Constant)	-8.920E-16	.091		.000	1.000
Standardized Predicted Value	.000	.092	.000	.000	1.000

a. Dependent Variable: Standardized Residual

The findings show that the p value was 1.000>0.05, an indication that there was no heteroscedasticity. This indicated that there was a relationship between Knowledge management and organization performance. This conclusion enabled the researcher to proceed into the inquiry of the nature of the relational between the variables.

4.5 Inferential Statistics

The researcher conducted inferential statistics and correlation analysis to establish the effect and relationship of knowledge management practices on organization performance in the selected state corporations in Kenya. The findings are indicated in the subsequent sections.

4.5.1 Correlation Analysis

The findings of correlation analysis are as shown in Table 4.12.

TABLE 4.12

Correlation Analysis

		Organizational performance	Knowledge Accumulation	Knowledge Utilization	Knowledge Sharing	Knowledge Ownership
Organizational performance	Pearson Correlation	1				
	Sig. (2-tailed)					
	N	117				
Knowledge Accumulation	Pearson Correlation	.238**	1			
	Sig. (2-tailed)	.010				
	N	117	117			
Knowledge Utilization	Pearson Correlation	.610**	.710**	1		
	Sig. (2-tailed)	.000	.000		.000	
	N	117	117	117	117	
Knowledge Sharing	Pearson Correlation	.366**	.885**	.627**	1	
	Sig. (2-tailed)	.000	.000	.000		
	N	117	117	117	117	
Knowledge Ownership	Pearson Correlation	.026	.817**	.691**	.682**	1
	Sig. (2-tailed)	.781	.000	.000	.000	
	N	117	117	117	117	117

**. Correlation is significant at the 0.01 level (2-tailed).

Huber (2004) states that in the interpretation of results for the linear relationships in the study, for a weak correlation, “r” ranges from ± 0.10 to± 0.29; in a moderate correlation, “r” ranges between ±0.30 and ±0.49; while in a strong correlation, “r” ranges from ±0.5 and ± 0.9.

The findings in Table 4.12 pointed out that knowledge accumulation had a Pearson Correlation to organization performance of 0.238 an indication of weak correlation, knowledge

utilization had a Pearson Correlation to organization performance of 0.610 an indication of strong correlation, knowledge sharing had a Pearson Correlation to organization performance of 0.366 an indication of moderate correlation and knowledge ownership had a Pearson Correlation to organization performance of 0.026 an indication of a weak correlation.

4.5.2 Regression Analysis

The researcher conducted regression analysis to establish the effect of knowledge management practices on organization performance in the selected state corporations in Kenya. The findings of Model Summary, ANOVA and Regression Coefficients are shown in the subsequent sections.

4.5.2.1 Model Summary. The findings of coefficient of correlation R and coefficient of adjusted determination R^2 is as shown in Table 4.13.

TABLE 4.13

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.866[a]	.749	.740	.98504

a. Predictors: (Constant), accumulation, ownership, sharing, utilization

b. Dependent Variable: performance

The findings show that that coefficient of correlation R was 0.866, an indication of a strong correlation between the variables. The coefficient of adjusted determination R^2 was 0.740 which translates to 74.0%, this shows changes in organizational performance can be explained by the four independent variables (accumulation, sharing, utilization and ownership,). The remaining 26% is explained by other factors beyond the scope of current study.

4.5.2.2 ANOVA. An ANOVA was carried out at 95% level of significance. The findings of $F_{Calculated}$ and $F_{Critical}$ are as shown in Table 4.14.

TABLE 4.14

ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	325.018	4	81.254	83.741	.000[b]
Residual	108.675	112	.970		
Total	433.692	116			

a. Predictors: (Constant), accumulation, ownership, sharing, utilization

b. Dependent Variable: performance

An F test was carried out in a bid to establish if the means of regression and residual were significantly different. This was done by comparing the findings of $F_{Calculated}$ as per the computed table above and the $F_{Critical}$ as informed by the F distribution table. The findings show that $F_{Calculated}$ 83.254 > $F_{Critical}$2.452. This served as an indication that the overall regression model was significant in predicting the effect of knowledge management practices on organization performance in the selected state corporations. This was further supported by significance result of 0.000. The p value was $0.00<0.05$, an indication that at least one variable significantly influenced organizational performance.

4.5.2.3 Regression Coefficients. The findings of regression coefficients are as distributed in Table 4.15.

TABLE 4.15

Regression Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients		
	B	**Std. Error**	**Beta**	**t**	**Sig.**
(Constant)	-2.239	1.140		-1.964	.052
Knowledge Utilization	-.119	.042	-.375	-2.820	.006
Knowledge Sharing	.587	.038	1.067	15.273	.000
Knowledge Ownership	.160	.029	.569	5.543	.000
Knowledge Accumulation	-.333	.036	-.792	-9.167	.000

a. Dependent Variable: performance

The regression analysis formula further indicated the extent to which the independent variables affected the dependent variable.

$$\mathbf{Y = \beta 0 + \beta 1X1 + \beta 2X2 + \beta 3X3 + \beta 4X4}$$

Where Y = Organizational Performance

X1 = Knowledge Utilization

X2= Knowledge Sharing

X3= Knowledge Ownership

X4= Knowledge Accumulation

$$\mathbf{Y = -2.239 - 0.119X_1 + 0.587X_2 + 0.160X_3 - 0.333\ X_4}$$

By holding other factors constant, organizational performance would be at -2.239. A unit decrease in knowledge utilization when holding other factors constant, organizational performance would be at 0.119. A unit increase in knowledge sharing while holding other factors constant, organization performance would be at 0.587. A unit increase in knowledge

ownership while holding other factors constant, organizational performance would be at 0.160. A unit decrease in knowledge accumulation while holding other factors constant, organization performance would be at 0.333.

Knowledge accumulation had a significant influence on organization performance. This agrees with Madeira, Vick and Nagano (2013) who stated that organizational leadership set research and development departments so as to acquire new knowledge that would improve their performance and gain competitiveness. Kinyua *et al.* (2015) revealed that knowledge conversion positively influences performance in banking and it is the first step to knowledge application.

The findings pointed out that knowledge utilization had a significant effect on organization performance. This agrees with Njagi (2017) who stated that experienced staff needed to apply available knowledge more effectively and apply the right skills and knowledge on the right task for the organization to attain organizational goals.

The findings pointed out that knowledge sharing had a significant influence on organization performance. This is supported by Matin and Sabagh (2015) who stated that knowledge sharing is an important part in the knowledge management and practices that yield higher returns in terms of productivity, effective operations and returns.

The findings show that knowledge ownership had a significant influence on organization performance. This is supported by Massingham (2014) who stated that generation and utilization of new knowledge that could add value to the individual performance as well the overall organizational output.

4.6 Hypothesis Testing

The study adopted null hypothesis where;

H_{01}: Knowledge accumulation has no significant effect on organization performance in selected state corporations in Kenya

H_{02}: Knowledge utilization has no significant effect on organization performance in selected state corporations in Kenya

H_{03}: Knowledge sharing has no significant effect on organization performance in selected state corporations in Kenya

H_{04}: Knowledge ownership has no significant effect on organization performance in selected state corporations in Kenya

The Shairo-Wilk test a carried out yet again in order to test the above null hypotheses.

TABLE 4.16

Shapiro-Wilk Test

	Shapiro-Wilk		
	Statistic	**df**	**Sig.**
Organization performance	.899	117	.000
Knowledge Utilization Practices	.914	117	.000
Knowledge Sharing Practices	.866	117	.000
Knowledge Ownership Practices	.947	117	.000
Knowledge Accumulation Practices	.952	117	.000

The significance level of all the independent variables (accumulation, utilization, sharing and ownership) were reported as 0.00 less than the 0.05 threshold. Thus, the null hypotheses were rejected.

A Regression Coefficient test run, further attested to the significant effect that the independent variables had on the dependent variable. The significant value of all the independent variables were 0.00<0.05 threshold as depicted in the table below. This was in support of the rejection of the null hypotheses. The null hypotheses were thus restated in support of the below findings

TABLE 4.16

Regression Coefficients

	Unstandardized Coefficients		Standardized Coefficients		
Model	**B**	**Std. Error**	**Beta**	**t**	**Sig.**
(Constant)	-2.239	1.140		-1.964	.052
Knowledge Utilization	-.119	.042	-.375	-2.820	.006
Knowledge Sharing	.587	.038	1.067	15.273	.000
Knowledge Ownership	.160	.029	.569	5.543	.000
Knowledge Accumulation	-.333	.036	-.792	-9.167	.000

The study pointed out knowledge accumulation significantly influenced organizational performance. We therefore reject the null hypothesis and fail to reject the alternative hypothesis that states that knowledge accumulation has a significant effect on organization performance in selected state corporations in Kenya.

The study established that knowledge utilization had a significant effect on organizational performance. Therefore, we reject the null hypothesis and fail to reject the alternative hypothesis that state that knowledge utilization has a significant effect on organization performance in selected state corporations in Kenya.

The study found out that knowledge sharing had a significant influence on organizational performance. This shows that we reject the null hypothesis and fail to reject the

alternative hypothesis that states that knowledge sharing has a significant effect on organization performance in selected state corporations in Kenya.

The study further showed that knowledge ownership had a significant influence on organizational performance of state corporations in Kenya. Therefore, we reject the null hypothesis and accept the alternative hypothesis that states that knowledge ownership has a significant effect on organization performance in selected state corporations in Kenya.

CHAPTER FIVE
SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 Introduction

This chapter presents the summary of the findings of this study. Conclusion and recommendations are drawn from the findings in chapter four. Suggestions for further studies have also being included herein.

5.2 Summary of the Findings

The main purpose of the study was to determine the effect of knowledge management practices on organization performance in the selected state corporations in Kenya. The study was guided by the following research questions; What is the effect of knowledge accumulation practices on organization performance of state corporations in Kenya? How do knowledge utilization practices affect organization performance of state corporations in Kenya? What is the effect of knowledge sharing practices on organization performance of state corporations in Kenya? What is the effect of knowledge ownership practices on organization performance of state corporations in Kenya?

The study adopted descriptive statistics to establish the effect of knowledge management practices on organization performance in the selected state corporations in Kenya. The target population of the study was 179 State Corporations in Kenya. The sample size of the study was 155 and the response rate was 117 giving a response rate of 75%. The study relied on primary data that was collected and coded into SPSS Version 23.0. The findings show that the coefficient of correlation R was 0.866, an indication of a strong correlation between the variables. The coefficient of adjusted determination R^2 was 0.740 which translates to

74.0%, this shows changes in organizational performance can be explained the independent variables.

5.2.1 Knowledge Accumulation Practices and Organization Performance

The study pointed out that states corporations engaged in research to generate new knowledge, organized forums with research institutions for exchange of knowledge and had diverse channels of collecting key information on its processes. This is supported by Van Long *et al.* (2014) who revealed that knowledge accumulation follows a cycle where it increases at the start within an organization, peaks and starts to fall over a certain time frame.

State corporations refined their internal processes in line with the strengths of its staff, conducted internal experiments to improve service delivery to its customers, collected customer feedback to inform its future decisions and used customer feedback to improve its processes. State corporations hired technically qualified consultants to work together with our staff in projects not performed by internal staff, trained its staff regularly, increased its knowledge by sponsoring staff to trade fairs and sponsored its staff to other parts of the world to benchmark their services. Kinyua *et al.* (2015) revealed that knowledge conversion positively influences performance in banking and it is the first step to knowledge application.

5.2.2 Knowledge Utilization Practices and Organization Performance

The study found out that state corporations utilized their knowledge to departmentalize the operations, reused knowledge to strengthen its operations, used knowledge to influence the kind of culture it wants to prevail and collaborated with other stakeholders in ensuring competitiveness. Madeira *et al.* (2013) revealed that knowledge is only useful when it changes

operational lines, improves the quality of products made and increasing the income earning of an enterprise.

The study further found out that state corporations used knowledge acquired in improving its internal processes, used the knowledge it possessed to predict the future, used knowledge it had to improve customer satisfaction and allocated right qualified persons to do specialized jobs. State corporations used extensive knowledge they have to develop policies to guide task performance and applied the knowledge in business processes. This agrees with Kinyua *et al.* (2015) who revealed that knowledge utilization positively influences performance in banking and it is the first step to knowledge application.

5.2.3 Knowledge Sharing Practices and Organization Performance

The study established that state corporations held sessions to share new developments, organized regular employee trainings, encouraged on the job training for its staff and mentorship of junior employees, had proper plans for conducting orientations and inductions, and organized seminars for its staff. Knowledge sharing is the mutual exchange of information and expertise across an organization (Wu & Lin, 2013). The study further found out that state corporations approved secondment of employees to other departments, encouraged teamwork among employees, held regular town hall meetings and organized regular internal trainings for its staff. State corporations had clear knowledge flow paths across all departments, had established a culture that promotes sharing of knowledge and had apprenticeship programs. This is supported by Masa'deh *et al.* (2016) who stated that leaders in an organization play a key role in enabling sharing of knowledge through inculcation of the right culture that promotes the spirit of knowledge sharing through mentorship programs, training, peer education programs and apprenticeships.

5.2.4 Knowledge Ownership Practices and Organization Performance

The study established that state corporations had patented their knowledge, the employees were bound by a signed agreement while still working and after they leave the organization and also signed disclosure agreements that prevented them from sharing key information on the organization. State Corporation had stored adequate stock of knowledge, had a clear audit trail of individuals accessing stored knowledge at all times and had classified access to its accumulated knowledge. The study further established that state corporation had several trademarks for their knowledge and had copyrights. This agrees with Rechberg and Syed (2013) who stated that the owner of the knowledge has the right to hoard or share the knowledge that they have. Similarly, Employees are bound by the agreement whether they work in that firm and even after they leave the firm. This action ensures that pertinent information is not shared with competition and others in the market (Nesheim & Gressgard, 2014).

5.3 Conclusion

On knowledge accumulation, the study concludes that knowledge accumulation significantly influenced performance. This was attributed to the following; organization had diverse channels of collecting key information on its processes, increased its knowledge by sponsoring staff to trade fairs and trained its staff regularly. State corporations used customer feedback to improve its processes, hired technically qualified consultants to work together with their staff in projects not performed by internal staff and engaged in research to generate new knowledge. State corporations conducted internal experiments to improve service delivery to its customers, refined its internal processes in line with the strengths of its staff and engaged in research to generate new knowledge that was useful in the organization.

In regard to knowledge utilization, the study concludes that significantly influenced organizational performance. This was attributed to the following factors; state corporation used extensive knowledge it had to develop policies to guide task performance, reused its knowledge to strengthen its operations, collaborated with other stakeholders in ensuring competitiveness and utilized its knowledge in optimizing its structure. State corporations applied the knowledge it had in business processes, allocated right qualified persons to do specialized jobs, used knowledge was acquired in improving its internal processes and customer satisfaction. State corporations used the knowledge it possessed to predict the future, utilized its knowledge to departmentalize its operations and used its knowledge to influence the kind of culture it wanted to prevail in.

In view to knowledge sharing, the study concludes that knowledge sharing had a significant influence on organizational performance. This was attributed to the following factors; state corporations held sessions to share new developments, encouraged teamwork among employees, established a culture that promoted sharing of knowledge and encouraged mentorship of junior employees. State corporations organized regular internal trainings for its staffs, encouraged on the job training and seminars for its staff, had proper plans for conduction orientations and inductions and approved secondment of employees to other departments. State corporations held regular town hall meetings, had clear knowledge flow paths across all departments and had apprenticeship programs.

In view to knowledge ownership practices, the study concludes that knowledge ownership positively influenced organizational performance. This was due to the following factors; state corporations had patented its knowledge, had several trademarks for its knowledge and had copyrights for its knowledge. State corporations' employees had signed disclosure agreements that prevented them from sharing key information on the organization,

employees were bound by the signed agreement while still working at state corporations and after they left the organization and the organization had classified access to its accumulated knowledge. State corporations had a clear audit trail of individuals accessing stored knowledge at all times and stored adequate stock of knowledge.

5.4 Recommendations

Following this research on the effect of knowledge management practices on organization performance of selected State Corporations, the following recommendations have been specified as avenues that State Corporations in Kenya can improve on their organization performance.

5.4.1 Knowledge Accumulation Practices and Organization Performance

The study recommends that state corporations ought to refine their internal processes in line with the strengths of the staff, as well as have diverse channels of collecting key information on its processes. State corporations also ought to hire technically qualified consultants to work together with their staff in projects not performed by internal staff, train their staff regularly, increase knowledge by sponsoring staff to trade fairs and also provide staff with exposure to other parts of the world in a bid to benchmark their services. States corporations ought to engage in research to generate new knowledge, organize forums with research institutions for exchange of knowledge as well as conduct internal experiments to improve service delivery to customers. State Corporations are also encouraged to collect customer feedback to inform future decisions and use customer feedback to improve their processes.

5.4.2 Knowledge Utilization Practices and Organization Performance

The study recommends that state corporations ought to use extensive knowledge they have to develop policies to guide task performance and apply the knowledge in business processes to predict the future. State corporations ought to use knowledge acquired in improving internal processes, to departmentalize operations, reuse knowledge to strengthen operations, allocate right qualified persons to do specialized jobs and use knowledge to influence the kind of culture they want to prevail and collaborate with other stakeholders in ensuring competitiveness. State corporations ought to use knowledge they have to improve customer satisfaction and.

5.4.3 Knowledge Sharing Practices and Organization Performance

The study further recommends that state corporations ought to have clear knowledge flow paths across all departments, establish a culture that promotes sharing of knowledge and encourage teamwork among employees, as well as share new developments. The state corporations also need to have proper plans for conduction orientations and inductions to ensure effective onboarding of new personnel. State corporations ought to hold regular sessions for; on and off the job employee trainings, and seminars for its staff. State Corporations should also need to have apprenticeship programs, mentorship of junior employees and approve secondment of employees to other departments. Regular town hall meetings should also be organized.

5.4.4 Knowledge Ownership Practices and Organization Performance

The study recommends that state corporation ought to store adequate stock of knowledge, have a clear audit trail of individuals accessing stored knowledge at all times and have classified access to its accumulated knowledge. State Corporations ought to have several trademarks for their knowledge and have copyrights and patents for their knowledge. Employees at state

corporations ought to be bound by the signed agreement while still working and after they leave the organization. The employees also ought to sign disclosure agreements that prevent them from sharing key information on the organization.

5.5 Suggestions for Further Studies

The current study was to determine the effect of knowledge management practices on organization performance in selected state corporations in Kenya, similar studies should be carried out Kenya County Governments, Safaricom Dealers among others. The current study relied on primary data, future studies should be carried out by use of both primary and secondary data. Current study established coefficient of determination of 74%, the remaining 26% presents other factors not carried out in the current study that future scholars may focus on.

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APPENDICES

APPENDIX 1: QUESTIONNAIRE

Dear Respondent,

My name is Susan Mullei a Master of Arts student studying corporate management from the KCA University. I am undertaking a research as part of my course work on the topic: **effects of knowledge management practices on organization performance of selected state corporations in Kenya.** Kindly provide responses to the questions to the full of your knowledge. The information you provide will be held in strict confidence.

Do not write your name or any identification mark.

Section A: General Information

1) Kindly indicate the Name of your organization

_____

2) How many years have you worked in this state department?

   Below 3 years [ ] 4-6 years [ ] 7-10 years [ ]

   More than 10 years [ ]

3) How many years have you served in the public service?

   Below 3 years [ ] 4-6 years [ ] 7-10 years [ ]

   More than 10 years [ ]

4) What is your highest level of education?

   Certificate [ ] Diploma [ ] first Degree [ ]

   Masters [ ] PhD [ ]

SECTION B: KNOWLEDGE ACCUMULATION PRACTICES AND ORGANIZATION PERFORMANCE

5) Listed below are a number of statements on the relationship between Knowledge Accumulation on Organization Performance. Kindly indicate the level of your agreement with each in as far as your organization is concerned. Use a scale of 10-5 where 1 - Strongly disagree; 2 -Disagree; 3 - Moderate extent; 4 - Agree; 5 - Strongly Agree

Statements	**1**	**2**	**3**	**4**	**5**
Our organization has diverse channels of collecting key information on its processes					
Our organization refines its internal processes in line with the strengths of its staff					
Our organization conducts internal experiments to improve service delivery to its customers					
Our organization collects customer feedback to inform its future decisions					
Our organization uses customer feedback to improve its processes					
Our organization hires technically qualified consultants to work together with our staff in projects not performed by internal staff					
Our organization trains its staff regularly					
Our organization hires external experts to train our staff					

Our organization increases its knowledge by sponsoring staff to trade fairs					
Our firm sponsors its staff to other parts of the world to benchmark our services					
Our organizations organize forums with research institutions for exchange of knowledge					
Our organization engages in research to generate new knowledge					

SECTION C: KNOWLEDGE UTILIZATION PRACTICES AND ORGANIZATION PERFORMANCE

6) Listed below are various statements on the influence of Knowledge Utilization on Organization Performance. Kindly indicate the level of your agreement with each in as far as your organization is concerned. Use a scale of 10-5 where 1 - Strongly disagree; 2 - Disagree; 3 - Moderate extent; 4 - Agree; 5 - Strongly Agree

Statements	**1**	**2**	**3**	**4**	**5**
Our organization uses knowledge acquired in improving its internal processes					
Our organization uses the knowledge it possesses to predict the future					
Our organization uses knowledge it has to improve customer satisfaction					

Our organization allocates right qualified persons to do specialized jobs					
Our organization has used extensive knowledge it has to develop policies to guide task performance					
Our organization applies the knowledge it has in business processes					
Our organization has utilized its knowledge in optimizing its structure					
Our organization has utilized its knowledge to departmentalize its operations					
Our organization reuses its knowledge to strengthen its operations					
Our organization uses its knowledge to influence the kind of culture it wants to prevail					
Our organization collaborates with other stakeholders in ensuring competitiveness					

SECTION D: KNOWLEDGE SHARING PRACTICES AND ORGANIZATION PERFORMANCE

7) Listed below are various statements on the influence of Knowledge Sharing on Organization Performance. Kindly indicate the level of your agreement with each in as far as your organization is concerned. Use a scale of 10-5 where 1 - Strongly disagree; 2 - Disagree; 3 - Moderate extent; 4 - Agree; 5 - Strongly Agree

Statements	**1**	**2**	**3**	**4**	**5**
Our organization holds sessions to share new developments					
Our organization organizes regular employee trainings					
Our organizations encourage on the job training for its staff					
Our organization encourages mentorship of junior employees					
Our organizations has proper plans for conduction orientations and inductions					
Our organization organizes seminars for its staff					
Our organization approves secondment of employees to other departments					
Our organization encourages teamwork among employees					

Our organization holds regular town hall meetings					
Our organization organizes regular internal trainings for its staff					
Our organization has clear knowledge flow paths across all departments					
Our organization has established a culture that promotes sharing of knowledge					
Our organization has apprenticeship programs					

SECTION F: KNOWLEDGE OWNERSHIP PRACTICES AND ORGANIZATION PERFORMANCE

8) Listed below are various statements on the influence of Knowledge ownership on Organization Performance. Kindly indicate the level of your agreement with each in as far as your organization is concerned. Use a scale of 10-5 where 1 - Strongly disagree; 2 - Disagree; 3 - Moderate extent; 4 - Agree; 5 - Strongly Agree

Statements	**1**	**2**	**3**	**4**	**5**
Our organization has patented its knowledge					
Our organization has copyrights for its knowledge					
Our organization has several trademarks for its knowledge					
Our organization has classified access to its accumulated knowledge					

Our organization has a clear audit trail of individuals accessing stored knowledge at all times					
Our organization has stored adequate stock of knowledge					
Our employees have signed disclosure agreements that prevent them from sharing key information on the organization					
Employees are bound by the signed agreement while still working here and after they leave the organization					

SECTION G: ORGANIZATION PERFORMANCE

9) Below are several statements on aspects of organizational performance. Kindly indicate the extent to which you agree with each of them in reference to your organization. Use a scale of 10-5 where 1 - Strongly disagree; 2 -Disagree; 3 - Moderate extent; 4 - Agree; 5 - Strongly Agree

Statements	**1**	**2**	**3**	**4**	**5**
Our organization has continuously improved service delivery over the last five years					
Our organization has delivered quality products / services to customers					
Our organization has realized improved returns on its investment					

Our organization has registered improved customer satisfaction					

THE END

THANK YOU FOR TAKING PART IN THE STUDY

APPENDIX II: LIST OF STATE CORPORATIONS

1. Ajira Digital Programme
2. Anti-Counterfeit Agency
3. Anti-money Laundering Advisory Board
4. Athi Water Services Board
5. Betting Control & Licensing Board
6. Bomas Of Kenya Limited
7. Brand Kenya
8. Capital Markets Authority
9. Catering & Tourism Development Levy Trustees
10. Centre for Mathematics Science and Technology in Africa
11. Chemelil Sugar Company
12. Coast Water Services Board
13. Commission for Higher Education (CHE) Kenya
14. Commission on Revenue Allocation
15. Communication Appeals Tribunal
16. Communications Commission of Kenya
17. Competition Authority of Kenya
18. Consolidated Bank of Kenya
19. Council for Higher Education (CHE) in Kenya
20. Deposit Protection Fund
21. East African Portland Cement Company
22. East African Safari Air Ltd
23. Energy Regulatory Commission

24. Engineers Board of Kenya
25. Environmental Management and Co-ordination
26. Ewaso Ng'iro South Development Authority
27. Export Processing Zones Authority
28. The Financial Reporting Center
29. Government Press Kenya
30. Higher Education Loans Board
31. Independent Electoral & Boundaries Commission
32. Independent Policing Oversight Authority
33. Industrial Development Bank
34. Insurance Regulatory Authority
35. Jomo Kenyatta Foundation – JKF
36. Jomo Kenyatta University of Agriculture and Technology
37. Kenya Accountants and Secretaries National Examination Board
38. Kenya Accreditation Service
39. Kenya Airports Authority – KAA
40. Kenya Airways – KQ
41. Kenya Animal Genetics Resource Center
42. Kenya Anti-corruption Authority
43. Kenya Broadcasting Corporation
44. Kenya Building Research Centre
45. Kenya Bureau of Standards
46. Kenya Civil Aviation Authority
47. Kenya Coconut Development Authority
48. Kenya College of Communication and Technology

49. Kenya Cultural Centre
50. Kenya Education Management Institute – KEMI
51. Kenya Education Staff Institute – KESI
52. Kenya Electricity Generating Company – KenGen
53. Kenya Energy Regulatory Commission – ERC
54. Kenya Ferry Service – KFS
55. Kenya Film Classification Board
56. Kenya Film Commission
57. Kenya Forest Service – KFS
58. Kenya Forestry Research Institute
59. Kenya Geothermal Development Corporation
60. Kenya ICT Board – KICTB
61. Kenya Industrial Estates
62. Kenya Industrial Property Institute
63. Kenya Industrial Research and Development Institute
64. Kenya Institute of Curriculum Development – KICD
65. Kenya Institute of Education - KIE
66. Kenya Institute of Mass Communication
67. Kenya Institute of Public Policy Research and Analysis
68. Kenya Institute of Special Education
69. Kenya International Convention Centre - KICC
70. Kenya Investment Authority
71. Kenya Literature Bureau – KLB
72. Kenya Marine and Fisheries Research Institute
73. Kenya Maritime Authority – KMA

74. Kenya Medical Research Institute
75. Kenya Medical Supplies Agency
76. Kenya National Assurance Company
77. Kenya National Examinations Council
78. Kenya National Highways Authority
79. Kenya National Library Service
80. Kenya National Shipping Line
81. Kenya National Youth Service – NYS Kenya
82. Kenya News Agency
83. Kenya Nuclear Electricity Board
84. Kenya Ordnance Factories Corporation
85. Kenya Petroleum Refineries – KPRL
86. Kenya Pipeline Company – KPC
87. Kenya Plant Health Inspectorate Services (KEPHIS)
88. Kenya Ports Authority
89. Kenya Post Office Saving Bank
90. Kenya Power
91. Kenya Reinsurance Corporation
92. Kenya Revenue Authority
93. Kenya Roads Board
94. Kenya Rural Electrification Authority
95. Kenya Rural Roads Authority
96. Kenya Safari Lodges & Hotels
97. Kenya School of Government – KSG
98. Kenya Tea Development Agency

99. Kenya Tourist Board

100. Kenya Tourist Development Corporation (KTDC)

101. Kenya Trade Network Agency Board

102. Kenya Urban Roads Authority Contacts

103. Kenya Utalii College

104. Kenya Water Towers Agency

105. Kenya Wildlife Service

106. Kenya Wine Agencies

107. Kenya Yearbook Editorial Board

108. Kenyatta National Hospital

109. Kerio Valley Development Authority

110. Konza Technopolies development Authority

111. LAPSSET Corridor Development Authority

112. Local Authority Provident Fund

113. Maseno University

114. Media Council of Kenya

115. Micro and Small Enterprises Authority

116. Moi University

117. National AIDS Control Council

118. National Bank of Kenya

119. National Campaign Against Drug Abuse Authority

120. National Cereals and Produce Board

121. National Commission for Science, Technology and Innovation

122. National Construction Authority

123. National Co-ordinating Agency for Population and Development- NCPD

124. National Council for Children's Services
125. National Council for Persons with Disabilities
126. National Council for Population & Development
127. National Development Fund For Persons With Disabilities
128. National Environment Tribunal
129. National Environmental Management Authority
130. National Hospital Insurance Fund
131. National Housing Corporation
132. National Industrial Training Authority
133. National Irrigation Board, Kenya
134. National Land Commission in Kenya
135. National Museums of Kenya
136. National Social Security Fund
137. National Sports Academy
138. National Sports Fund
139. National Transport Highways Authority
140. National Water Conservation and Pipeline Corporation
141. New Kenya Creameries Cooperative
142. NGOs Co-ordination Board
143. Numerical Machining Complex Limited
144. Nzoia Sugar Company Limited
145. Pest Control Products Board
146. Petroleum Institute of East Africa
147. Policyholders Compensation Fund
148. Postal Corporation of Kenya

149. Privatization Commission
150. Productivity Centre for Kenya
151. Public Procurement Oversight Authority
152. Pyrethrum Board of Kenya
153. Radiation Protection Board
154. Renewable Energy Portal
155. Retirement Benefits Authority
156. Rift Valley Water Services Board
157. Rural Electrification Authority
158. Sacco Societies Regulatory authority
159. Schools Equipment Production Unit
160. Settlement Fund Trustees
161. Social Protection Secretariat
162. State Corporations Appeals Tribunal
163. South Nyanza Sugar Company
164. Sports Kenya
165. Tana & Athi Rivers Development Authority
166. Tana Water Services Board
167. Teachers Service Commission (TSC) – Kenya
168. The Kenya Medical Supplies Agency
169. The Kenya Medical Training College
170. The Kenya Railways Corporation
171. The National Intelligence Service (NIS)
172. The National Oil Corporation of Kenya – Nock
173. Tourism Fund

174. Tourism Regulatory Authority

175. Transition Authority

176. University of Nairobi Enterprises & Services Ltd

177. Uwezo Fund

178. Water Services Regulatory Board

179. Water Services Trust Fund

Source: (Kenya Gazette Notice)

APPNDIX III: F DISTRIBUTION TABLE

Upper 5% points

ν_2 \ ν_1	1	2	3	4	5	6	7	8	9	10	12	15	20	24	30	40	60	120	∞
1	161·4	199·5	215·7	224·6	230·2	234·0	236·8	238·9	240·5	241·9	243·9	245·9	248·0	249·1	250·1	251·1	252·2	253·3	254·3
2	18·51	19·00	19·16	19·25	19·30	19·33	19·35	19·37	19·38	19·40	19·41	19·43	19·45	19·45	19·46	19·47	19·48	19·49	19·50
3	10·13	9·55	9·28	9·12	9·01	8·94	8·89	8·85	8·81	8·79	8·74	8·70	8·66	8·64	8·62	8·59	8·57	8·55	8·53
4	7·71	6·94	6·59	6·39	6·26	6·16	6·09	6·04	6·00	5·96	5·91	5·86	5·80	5·77	5·75	5·72	5·69	5·66	5·63
5	6·61	5·79	5·41	5·19	5·05	4·95	4·88	4·82	4·77	4·74	4·68	4·62	4·56	4·53	4·50	4·46	4·43	4·40	4·36
6	5·99	5·14	4·76	4·53	4·39	4·28	4·21	4·15	4·10	4·06	4·00	3·94	3·87	3·84	3·81	3·77	3·74	3·70	3·67
7	5·59	4·74	4·35	4·12	3·97	3·87	3·79	3·73	3·68	3·64	3·57	3·51	3·44	3·41	3·38	3·34	3·30	3·27	3·23
8	5·32	4·46	4·07	3·84	3·69	3·58	3·50	3·44	3·39	3·35	3·28	3·22	3·15	3·12	3·08	3·04	3·01	2·97	2·93
9	5·12	4·26	3·86	3·63	3·48	3·37	3·29	3·23	3·18	3·14	3·07	3·01	2·94	2·90	2·86	2·83	2·79	2·75	2·71
10	4·96	4·10	3·71	3·48	3·33	3·22	3·14	3·07	3·02	2·98	2·91	2·85	2·77	2·74	2·70	2·66	2·62	2·58	2·54
11	4·84	3·98	3·59	3·36	3·20	3·09	3·01	2·95	2·90	2·85	2·79	2·72	2·65	2·61	2·57	2·53	2·49	2·45	2·40
12	4·75	3·89	3·49	3·26	3·11	3·00	2·91	2·85	2·80	2·75	2·69	2·62	2·54	2·51	2·47	2·43	2·38	2·34	2·30
13	4·67	3·81	3·41	3·18	3·03	2·92	2·83	2·77	2·71	2·67	2·60	2·53	2·46	2·42	2·38	2·34	2·30	2·25	2·21
14	4·60	3·74	3·34	3·11	2·96	2·85	2·76	2·70	2·65	2·60	2·53	2·46	2·39	2·35	2·31	2·27	2·22	2·18	2·13
15	4·54	3·68	3·29	3·06	2·90	2·79	2·71	2·64	2·59	2·54	2·48	2·40	2·33	2·29	2·25	2·20	2·16	2·11	2·07
16	4·49	3·63	3·24	3·01	2·85	2·74	2·66	2·59	2·54	2·49	2·42	2·35	2·28	2·24	2·19	2·15	2·11	2·06	2·01
17	4·45	3·59	3·20	2·96	2·81	2·70	2·61	2·55	2·49	2·45	2·38	2·31	2·23	2·19	2·15	2·10	2·06	2·01	1·96
18	4·41	3·55	3·16	2·93	2·77	2·66	2·58	2·51	2·46	2·41	2·34	2·27	2·19	2·15	2·11	2·06	2·02	1·97	1·92
19	4·38	3·52	3·13	2·90	2·74	2·63	2·54	2·48	2·42	2·38	2·31	2·23	2·16	2·11	2·07	2·03	1·98	1·93	1·88
20	4·35	3·49	3·10	2·87	2·71	2·60	2·51	2·45	2·39	2·35	2·28	2·20	2·12	2·08	2·04	1·99	1·95	1·90	1·84
21	4·32	3·47	3·07	2·84	2·68	2·57	2·49	2·42	2·37	2·32	2·25	2·18	2·10	2·05	2·01	1·96	1·92	1·87	1·81
22	4·30	3·44	3·05	2·82	2·66	2·55	2·46	2·40	2·34	2·30	2·23	2·15	2·07	2·03	1·98	1·94	1·89	1·84	1·78
23	4·28	3·42	3·03	2·80	2·64	2·53	2·44	2·37	2·32	2·27	2·20	2·13	2·05	2·01	1·96	1·91	1·86	1·81	1·76
24	4·26	3·40	3·01	2·78	2·62	2·51	2·42	2·36	2·30	2·25	2·18	2·11	2·03	1·98	1·94	1·89	1·84	1·79	1·73
25	4·24	3·39	2·99	2·76	2·60	2·49	2·40	2·34	2·28	2·24	2·16	2·09	2·01	1·96	1·92	1·87	1·82	1·77	1·71
26	4·23	3·37	2·98	2·74	2·59	2·47	2·39	2·32	2·27	2·22	2·15	2·07	1·99	1·95	1·90	1·85	1·80	1·75	1·69
27	4·21	3·35	2·96	2·73	2·57	2·46	2·37	2·31	2·25	2·20	2·13	2·06	1·97	1·93	1·88	1·84	1·79	1·73	1·67
28	4·20	3·34	2·95	2·71	2·56	2·45	2·36	2·29	2·24	2·19	2·12	2·04	1·96	1·91	1·87	1·82	1·77	1·71	1·65
29	4·18	3·33	2·93	2·70	2·55	2·43	2·35	2·28	2·22	2·18	2·10	2·03	1·94	1·90	1·85	1·81	1·75	1·70	1·64
30	4·17	3·32	2·92	2·69	2·53	2·42	2·33	2·27	2·21	2·16	2·09	2·01	1·93	1·89	1·84	1·79	1·74	1·68	1·62
40	4·08	3·23	2·84	2·61	2·45	2·34	2·25	2·18	2·12	2·08	2·00	1·92	1·84	1·79	1·74	1·69	1·64	1·58	1·51
60	4·00	3·15	2·76	2·53	2·37	2·25	2·17	2·10	2·04	1·99	1·92	1·84	1·75	1·70	1·65	1·59	1·53	1·47	1·39
120	3·92	3·07	2·68	2·45	2·29	2·17	2·09	2·02	1·96	1·91	1·83	1·75	1·66	1·61	1·55	1·50	1·43	1·35	1·25
∞	3·84	3·00	2·60	2·37	2·21	2·10	2·01	1·94	1·88	1·83	1·75	1·67	1·57	1·52	1·46	1·39	1·32	1·22	1·00

$F = \frac{s_1^2}{s_2^2} = \frac{S_1}{\nu_1} \Big/ \frac{S_2}{\nu_2}$, where $s_1^2 = S_1/\nu_1$ and $s_2^2 = S_2/\nu_2$ are independent mean squares estimating a common variance σ^2 and based on ν_1 and ν_2 degrees of freedom, respectively.

(Source: http://www.socr.ucla.edu/applets.dir/f_table.html)