KNOWLEDGE MANAGEMENT PROCESSES AT ST. PAUL'S UNIVERSITY LIBRARY IN KENYA

by

EMILY SIROREI

STUDENT NUMBER: 37151134

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DECLARATION

Student number: **37151134**

I declare that: "**Knowledge Management Processes at St. Paul's University Library in Kenya**" is my own work and all the sources that I have or quoted have been indicated and acknowledged by means of complete references.

17TH MAY 2017

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SIGNATURE **DATE**

(Mrs. Sirorei EC)

DEDICATION

I dedicate this research work to my parents; it is through your love and care that I am who I am today. To my loving husband John, thank you for being my pillar of strength throughout my studies, and in particular the duration of this dissertation, without your encouragement I would not have achieved this much. To my children Lawrence and Ethan, who provided a conducive environment for my studies. This also goes to my brothers, sisters and friends for their love, encouragement, support and understanding which was immeasurable. You are an amazing part of my life.

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I take this opportunity to thank the Almighty God for his love and strength upon my life. Indeed I can do all things through Christ who gives me strength (Philippians 4:13). I would never have accomplished this challenging task without His faithfulness and favor upon my life.

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ABSTRACT

Knowledge management (KM) has become a vital process in all types of institutions in our society, institutions that also include academic libraries. Furthermore, academic libraries have become an integral part of the knowledge system. These institutions and academic libraries contribute to knowledge development in the current digital age. This study sought to investigate knowledge management processes at St Paul's University library and to suggest ways by which these processes may be enhanced in order to promote efficiency and effectiveness in knowledge management. The study was based on knowledge management processes that include knowledge capture, knowledge acquisition, knowledge organisation, knowledge creation, knowledge retention and knowledge sharing as advanced in existing literature. The context of this study was St. Paul's University Library, the academic library of St. Paul's University. St. Paul's University is an academic institution of higher learning based in Limuru Kenya. St. Paul's University Library was found to be encountering challenges in the implementation and adoption of formal knowledge management processes such as knowledge creation, knowledge application, knowledge retention, knowledge acquisition, knowledge organisation and knowledge sharing. These challenges affect the library's ability to manage and disseminate knowledge to its different stakeholders. This research thus set out to address these challenges. This was a case study of St. Paul's University library which involved the collection of qualitative data from study participants through the use of interview guides. In the study, interviews were used to collect data from 10 library management committee members, 20 faculty staff and 20 library staff. These three groups of study participant were purposively selected as the target population for the study because they play a key role in knowledge management enhancement at St. Paul's University library. Interviews were conducted for all categories of participants separately through face-to-face interview method based on their pre-determined availability. Out of 50 interviewees, only 32 were successfully interviewed**.** Qualitative data collected were analysed using content analysis. Findings of this study were then deduced from analysis done. From the study, it emerged that all the knowledge management processes under study were utilised albeit to varied degrees. From the study, varied gaps were noted on the various knowledge management processes and the use of ICT in knowledge management. The study recommends that St. Paul's University Library should fully incorporate all the knowledge management processes and ensure appropriate policies be in place to support knowledge management and also increase effectiveness and efficiency in the library. The study further recommends a survey study on academic libraries to be undertaken on knowledge management processes in Kenya.

Keywords: Knowledge; Knowledge management; Knowledge management processes,

Academic libraries; Information communication technologies (ICT); St. Paul's University.

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LIST OF ABBREVIATIONS AND ACRONYMS

ACK:	Anglican Church of Kenya
AMREF:	African Medical and Research Foundation
BOM:	Bishop Okullu Memorial Library)
CALA:	Christian Association of Librarians in Africa
COPs:	Communities of Practice
DIKW:	Data, Information, Knowledge and Wisdom
DSS:	Decision Support Systems
EDMS:	Electronic Document Management System
EPSS:	Electronic Performance Systems
GDNet	Global Development Network
HR:	Human Resources
HTML:	Hypertext Markup Language
ICTs:	Information and Communication Technologies
INASP:	International Network for the Availability of Scientific Publications
IR:	Information Repository
IT:	Information Technology
KLA:	Kenya Library Association
KLISC:	Kenya Library and Information Services Consortium
KMA	Knowledge Management Africa
KMAT:	Knowledge Management Assessment Tool
KM:	Knowledge Management
KMP:	Knowledge Management Processes
KO:	Knowledge Organisation

LC:	Library of Congress
LIS:	Library and Information Science
MCK:	Methodist Church of Kenya
MCNY:	Metropolitan College of New York
NCCK:	National Council of Churches of Kenya
OPAC:	Online Public Access Catalogue
PCEA:	Presbyterian Church of East Africa
PERI:	Program for the Enhancement of Research Information
RCEA:	Reformed Church of East Africa
SA:	South Africa
SMS:	Short Message Service
SPU:	St. Paul's University
UNHABITAT:	United Nations Human Settlements Programme
UN:	United Nations
UNISA:	University of South Africa
UNZA:	University of Zambia
VOIP:	Voice and Voice-Over-Internet Protocol
WB:	World Bank
WWW:	World Wide Web

CHAPTER ONE: INTRODUCTION

1.1 Introduction to the study

Knowledge management according to Schmitz, Rebelo, Gracia and Thomas (2014) became of interest in academic and management fields in the 1990s. Saha (2015) posits that, the application of knowledge management has increased to other organisations including government agencies, research and development departments, universities and others. According to Wen (2005) and Thanuskodi (2010) knowledge management in academic libraries is a viable means which is considered as one of the most useful solutions that can be adopted in order to improve services to become relevant for their parent institutions in the competitive and challenging environment. Kaane (2009) appropriately portrayed the importance of knowledge management in academic libraries as that of improving services through knowledge management. She presents that this service improvement happens through; creation of an organisational culture that supports the sharing of knowledge and expertise, changing their values, focusing on creating and using intellectual assets (tacit, explicit and potential knowledge), restructuring their functions and expanding their roles and responsibilities.

Gandhi (2004:373) posits that, academic library services have significantly developed and are applying some knowledge management practices in the provision of library services. This is done in order to meet and anticipate new needs as well as create new ideas that result from new information environment (Griffiths and Pantry 2003:106;Rowley 2001 and Singh 2007:170). Libraries are also faced with budget and personnel cuts, constant changes in user needs, expectations and increased competition in today's environment making knowledge management a necessity for the organisations (Koloniari, Vraimaki, Fassoulis, Zenelaj and Kourniotis 2015).

Knowledge is now recognised as an organisation's most valuable asset, and it must be managed in a different way unlike other resources. Skyrme and Amidon (1997:23) define knowledge management as the ability to utilise available knowledge resources effectively and in a timely manner for the benefit of the organisation. It is the systematic and effective utilisation of essential information and unlocking the potential knowledge for the success of the organisation. The changing information environment in the 21st century has challenged academic libraries to embrace knowledge management in their institutions. Leuven and Oosterlink (2002:45) have pointed out that universities have a major role to play in the era of knowledge society and

knowledge economy. According to Reid (2000:1) traditionally, universities have been the sites of knowledge production, storage, dissemination and authorisation.

With the evolution of knowledge, all organisations and academic libraries are resorting to knowledge management. Academic libraries have long enjoyed their status as the 'heart of the university'. They are established to support teaching, learning, research activities and development of a culture of sharing and imparting knowledge to fulfil the mission and objectives of their parent institutions. Jantz (2001:35) stated that the basic goal of knowledge management within academic libraries is to improve library effectiveness and productivity. Knowledge management can help transform the academic libraries into efficient, knowledge sharing organisations. Earl (1997:215-233) pointed out that knowledge management enables academic libraries to generate organisational knowledge for institutions of higher learning. This study will investigate the application of knowledge management processes at St. Paul's University library in Kenya.

Knowledge management within libraries will leverage the available knowledge that may help academic professionals to carry out their tasks more efficiently and effectively (Townley 2001:47). Knowledge management is also aimed at extending the role of professionals to manage all types of information and tacit knowledge for the benefit of the library. According to Hamid and Nayan (2005:14) the aim of knowledge management in academic libraries is to promote relationship between academic libraries and users in order to strengthen knowledge networking and to quicken its flow. Knowledge management is viewed as a key component of academic library work. Academic library activities are linked to knowledge acquisition because through knowledge acquisition, people are empowered to be creative.

According to Mavodza and Ngulube (2011:31) knowledge management has become increasingly significant in academic libraries due to the rapid technological changes; that have altered the way in which academic library services are provided. Less emphasis is on ownership and on physical collections (Van, Schijndel 2012). This can be attributed to digitalisation and new communication technologies including social media (Mavodza and Ngulube 2011:33). Sarrafzadeh Martin and Hazeri (2010:198) cited Sarrafzadeh (2005:97) who noted that a technological influence on the academic library environment has facilitated them to be engaged in knowledge management through digitising academic library resources. This move towards

digital libraries, provision of remote access to internet-based knowledge resources, and providing 24 hours a day and seven days a week reference services through the web, are potentially important steps toward knowledge management implementation in academic libraries. Academic libraries are pulling together information resources and operate as "knowledge gateways" (Ravi 2008 cited in (Mavodza and Ngulube 2011:33).

Academic libraries have changed the way they operate in today's environment and the way people search and access information has changed due to rapid developments in information and communication technologies (ICTs). The development of internet, the world-wide web, user friendly databases and search engines have made an impact on the structure and the way academic libraries functions. This has also challenged the status of academic libraries as the only provider of information because of the alternatives such as Google Scholar, that are available for people to locate and access scholarly literature from commercial publishers. Sarrafzadeh *et al*., (2010:199) argue that technological changes, along with external pressure of market forces, push academic libraries to transform their structures and implement new managerial processes.

Ondari and Minishi-Majanja (2007) assert that African is termed as a "Knowledge Society". In Africa, knowledge management is making milestones in development. An electronic network has been created to foster connections across varying boundaries to create a knowledge bank that links expertise with demand. Among these knowledge banks are Knowledge Management Africa (KMA) and Global Development Network (GDNet) which according to Benhenyi (2007) has become knowledge engines that drive appropriate development solutions for Africa. Mosoti and Masheka (2010:111) states that for African countries to compete internationally, they require access to the latest knowledge and information similar to those of countries they compete with. In the past 20 years, Africa (and other developing countries), have experience challenges in regards to massive accumulation of explicit knowledge and information in human history (Mchombu 2007:29). Digital information and communication technologies, and new ways of thinking on knowledge management have revolutionised the ways in which knowledge technical knowhow move around the world. Mchombu (2007:30) notes that the local African content is also very low, due to lack of capacity to produce, transfer, and disseminate information. This situation could partly be attributed to lack of financial resources and lack of awareness of the

critical and strategic importance of information and knowledge to country's competitiveness and development.

In the Kenyan context, international organisations such as African Medical and Research Foundation (AMREF), World Bank and United Nations (UN) have made efforts to manage knowledge. According to Mosoti and Masheka (2010:112) AMREF Kenya operate programs in 7 African countries such as Uganda, Ethiopia, Somalia, Tanzania, South Sudan and South Africa with its headquarters in Nairobi, Kenya which recognises knowledge as a valuable resource that deserves to be consciously captured and managed. AMREF recognises knowledge as a valuable resource that deserves to be consciously captured and managed to facilitate sharing of experiences and lessons learned from different programs both internally and externally. Therefore, if this can only be implemented in Africa, it will be considered as an advanced big step to the second generation of knowledge management whereby knowledge must not only be capture and shared but also be produced. The World Bank Kenya has its collective digital resources freely available to the public. United Nations Human Settlements Programme (UNHABITAT) has a knowledge management unit which is responsible for managing the organisations knowledge.

Kenyan Universities which are considered to be the core of knowledge creation are still lagging behind in regards to knowledge management. Most Universities in Kenya are yet to acknowledge knowledge management as a key task. The study carried out by Mosoti and Masheka (2010:129) on "Knowledge Management: The case for Kenya", investigated the extent to which knowledge management practices are in place in organisations in Nairobi. They found out that the use of knowledge management practices in Nairobi had increased knowledge sharing across departments and functional business units. Though, one of the major challenges they identified was on how to create and implement knowledge management practices as part of the organisational culture, strategy and leadership. They recommended that organisations should become learning centers and provide facilities for knowledge management and they should reinforce the creation of knowledge by integrating effective leadership, strategy and culture. According to Wiig (1999:13) advances in knowledge management practices will continue to modify the workplace sometimes drastically. He furthers says that visible changes will be evident by increased application of and reliance on technology for cognitive support compared to the information focus of the 1980s and 1990s.

Existing literature therefore strongly suggests knowledge management and its associated processes in academic libraries as a necessity for organisation's effectiveness, efficiency, competitive posture reinforcement and organisation's survival. Also revealed from existing literature, it is clear that insufficient adoption and utilisation of knowledge management processes impair on the effectiveness and efficiency of knowledge management processes in academic libraries in delivering on their mandate. It is for this reason that the researcher draws motivation to investigate on knowledge management processes at an academic library.

1.2 St. Paul's university academic library and knowledge management

St. Paul's University is a Christian Chartered University based in Kenya. It is an academic institution consisting of a student population of approximately 6000, 400 full time staff members that include administrative and academic staff and 300 adjunct lectures. St. Paul's University library is located in Limuru, Kenya 30 kms away from Kenya's capital city, Nairobi, a serene environment that provides a conducive atmosphere for learning. The university also has additional other campuses within Nairobi city, Nakuru town, and Machakos town.

St. Paul's University offers Phd programs such as; Doctor of Philosophy in Theology, Doctor of Philosophy in Development Studies and Doctor of Philosophy in Business Administration. It also offers Masters Degree programs such as; Master in Business Administration, Masters in Development Studies, Masters in Theology, Masters in Pastoral Community Care and HIV/AIDS, Masters in Islamic and Christian-Muslim Relations (ICMR), Masters of Arts in Transformational Urban Leadership and Master of Education (Early Childhood Studies). It also offers numerous Degree, Diploma and Certificate level programs.

The origin of St. Paul's University Library dates back to the early years of missionary work in East Africa. It was started by a partnership of churches that include; Anglican Church of Kenya, (ACK), Presbyterian Church of East Africa (PCEA), Methodist Church of Kenya (MCK), Reformed Church of East Africa (RCEA) and National Council of Churches of Kenya (NCCK). St. Paul's University was however awarded a charter to operate as a university by the Kenyan Commission of Higher Education on September 14th 2007.

St. Paul's University is a Christian Ecumenical Community Dedicated to the promotion of knowledge and Christian spiritual formation for the Good of Humanity and to the Glory of God. The

university is focused on producing highly qualified and trained students who will make a difference in Kenya and the outside world by imparting Christian values and principles. As a Christian institution of higher learning St. Paul's University Mission it to develop Servant Leaders by Imparting Knowledge, Skills and Values through Creative methods of Education, Research and Christian Spiritual Formation. As an institution of higher learning, the PHDs, Masters and Degree programs entail tuition and research work. This therefore means that knowledge gets created through learning, teaching and research activities. It is therefore imperative that, St. Paul's University needs to implement and perfect its knowledge management processes and adoption. It also becomes important to ensure full operationalisation of its institutional repository for knowledge creation and retention within the University so as to ensure that vital information is retained and is available for sharing in a timely manner.

According to the University's policy document, the library's major aim is to embrace new technologies and global changes in Information Communication Technology (ICT) to keep update with the recent developments and support University mandate of teaching, learning and research and to enhance its role in the university's efforts in realising its vision, fulfillment of its mission and institutional values (SPU 2014:1). The main library (Bishop Okullu Memorial Library) at Limuru campus oversees all the library activities in all the other campuses. The library offers all types of library services and makes available electronic databases of e-journals, e-books, and dissertation and other formats under the umbrella of the KLISC, INASP and PERI, which offers a huge number of electronic resources. The library's e-resource section is a gateway to a world of rich content and valuable electronic information resources such as Emerald, EBSCO-Host, Caliber, Liebert Online, Taylor & Francis Group, Annual Reviews, The World Bank, American Institute of Physics (AIP) Wiley, E-brary etc. It also has a unique digital collection of digitised information resources that represent an outstanding academic, spiritual, historical and contemporary account of St. Paul's University.

St. Paul's university library strives to be the best department through aggressive research efforts, building of information systems and strengthening of its position in the university. The results of these efforts, involves generation of information and new knowledge, retention of knowledge, storage and sharing of such information and knowledge. However, St. Paul's University library has not been able to fully achieve this goal due to insufficient formal knowledge management

processes such as knowledge creation, application, retention, acquisition, organisation and sharing. These challenges affect its ability to manage and disseminate knowledge to different stakeholders. Librarians also seem to be overwhelmed by the inflow of students and the rapidly changing technology. They face the challenge of sharing knowledge to the large student population. In some cases, librarians are unsure of the techniques to use to create and acquire tacit, explicit and embedded knowledge. The ability to solve these challenges will improve knowledge management in the library. Jantz (2001:34) points out that knowledge management in not a concept that is commonly used in libraries because of the assumption that is relates to business value in terms of profits. Jantz (2001:35 further states that most academic libraries lack a systematic approach to capture, organise, store and share all forms of organisational knowledge. It is argued that service delivery could be significantly improved if librarians were to apply knowledge management practices and processes to not only create, acquire, organise, store and disseminate information, but also to share tacit knowledge that resides within individuals. This would better enable them to render a relevant, meaningful and effective service to their communities (Sarrafzadeh 2005:95).

1.3 Statement of the problem

Knowledge management processes according to Fahey and Prusak (1998:265) involve the acquisition, creation, dissemination and application or reuse of knowledge. The basic goal of knowledge management within libraries is to leverage on the available knowledge that may help academic librarians to carry out their tasks more efficiently and effectively. According to Townley (2001) academic libraries have vast amount of organisational knowledge about their users, processes, products and services as well as knowledge of their employees as key knowledge assets. He further states, that librarians are reluctant to consider organisational knowledge as a resource similar to their library collections and facilities. Traditionally, librarian functions were mainly confined to the identification and acquisition of information for satisfying information needs of the academic community (Townley 2001)

Although St. Paul's University (SPU) is an institution of higher learning, the level of knowledge management processes adoption in the academic library is still low. The major challenge faced by the academic library is the lack of formal structures that provide for an appropriate framework for these Knowledge Management processes that should ensure maximum utilisation of library resources. Based on the various scenarios encountered at St. Paul's University, the practice of

knowledge sharing was not pronounced. Preliminary investigative study that leads to the determination of the need to undertake this study revealed that the culture of knowledge sharing and retention was lacking or was not pronounced in the organisation. One of the major concerns was the lack of strategies or systems to capture the experts' knowledge.

The absence of retention strategies is a clear indication that management has not realised or recognised the importance of retaining critical knowledge in the University library for future use. Levy (2011:582) asserts that knowledge retention is an issue of contention and a main challenge in many countries as knowledge becomes a major organisational asset. This is because knowledge should be retained at all costs to avoid loss of valuable knowledge that might maintain organisations in the market place. He further points out that, organisations that do not embrace knowledge retentions as a major Knowledge Management initiative may end up with losses of valuable knowledge as noted by Probst, Raub and Romhardt (2000:226) that, "organisations often suffer permanent loss of valuable knowledge through dismissals, redundancies, retirement and death". The sentiments are held by Martins and Meyers (2011:77) that, "knowledge loss has become a critical factor that could make organisations vulnerable in difficult economic times as well as during thriving economic growth periods when competition is rife."

There is limited knowledge sharing and transfer because the library staffs are ignorant of the processes and techniques that are available in the library. Consequently, students do not know what books have arrived in the library. In organisations, knowledge sharing is considered important because as knowledge is shared, other employees benefit from it and ensures widening of knowledge bases in an organisation (Quinn *et.al.*, 1996:277). There are no formalised structures for knowledge creation therefore, the library staff are not able to develop new skill, new products, come up with better ideas and processes that are more efficient for knowledge management. ICT systems such as, the internet connectivity is inadequate and hampers the acquisition and sharing of knowledge for retention purposes.

In summary, it may be argued that lack of proper knowledge management processes framework is an impediment to the growth of St. Paul's university library since it is not able to efficiently and effectively tap and share knowledge for the improvement of the individuals and the institution at large. Moreover, not much research work has been published on knowledge

management processes at St. Paul's University library in Kenya. Therefore, this study, sought to investigate Knowledge Management processes at St. Paul's University library in Kenya.

1.4 Aim of the study

The main purpose of this study was to investigate the types of processes involved in knowledge management practices at St Paul's University library and suggest ways by which these processes may be enhanced in order to promote efficiency and effectiveness in knowledge management.

1.5 Objectives of the study

The study was guided by the following objectives:

1. To find out the understanding of knowledge management awareness at St. Paul's University library?
2. To establish how knowledge is created at St Paul's University library.
3. To discover how knowledge is acquired at St. Paul's University library.
4. To determine how knowledge is organised at St. Paul's University library.
5. To establish how knowledge is shared at St. Paul's University library
6. To ascertain how knowledge is retained at St. Paul's University library.
7. To find out the different ICT instruments used for knowledge management at St Paul's University library.
8. To investigate knowledge management challenges and how knowledge management can be enhanced at St Paul's University library.

1.6 Research questions

1. What is the understanding of knowledge management awareness at St Paul's University?
2. How is knowledge created at St Paul's University library?
3. How is knowledge acquired at St Paul's University library?
4. How is knowledge organised at St Paul's University library?
5. How is knowledge shared at St Paul's University library?
6. How is knowledge retained at St Paul's University library?
7. What are the different ICT instruments used for knowledge management at St Paul's library

8. What are the knowledge management challenges and how can knowledge management be enhanced at St. Pauls University library?

Table 1. 1: Objectives, research questions and data collection tools

Objectives	Research questions	Data collection tools
To find out the understanding of knowledge management awareness at St. Paul's University library?	What is the understanding of knowledge management awareness at St Paul's University?	Interviews
To discover how knowledge is created at St Paul's University library.	How is knowledge created at St Paul's University library?	Interviews
To establish how knowledge is acquired at St. Paul's University library.	How is knowledge acquired at St Paul's University library?	Interviews
To determine how knowledge is organised at St. Paul's University library.	How is knowledge organised at St Paul's University library?	Interviews
To establish how knowledge is transferred or shared at St. Paul's University library	How is knowledge shared at St Paul's University library?	Interviews
To ascertain how knowledge is retained at St. Paul's University library.	How is knowledge retained at St Paul's University library?	Interviews
To find out the different ICT instruments used for knowledge management at St Paul's University library.	What are the different ICT instruments used for knowledge management at St Paul's library	Interviews
To investigate knowledge management challenges and how knowledge management can be enhanced at St Paul's University library.	What are the knowledge management challenges and how can knowledge management be enhanced at St. Pauls University library?	Interviews

1.7 Significance of the study

This study had the objective of establishing whether librarians at St. Paul's University library understood knowledge management. It will highlight ways, through which they create, acquire,

share, retain, transfer and organise knowledge in the library. Therefore, the study will be significant to the research because it will establish the knowledge management processes applied in the library, their weaknesses and ways of improvement. The study will be significant to St Paul's University at large because it will discover knowledge management processes that will be well understood by the librarians, including ICT techniques applied in the library. It will also be significant to the students at St Paul's University because, through successful knowledge management implementation in the library, students would benefit with improved library services**.** Apart from these, the findings will be used by other institutions of higher learning in Kenya to improve their academic library services. The model can also be adapted by information professionals in various organisations to enable them to harness knowledge management. Lastly, the study will further contributed to the body of knowledge in the field of information and knowledge management and pave the way for further investigations in the field.

1.8 Justification of the study

The success of academic libraries depends on their ability to utilise information and knowledge of its staff to better serve the needs of the academic community. Lee (2000:1) points out that knowledge and experience of library staff are intellectual assets of any library and should be valued and shared. Academic libraries have the responsibility of recognising their valuable knowledge assets in order to avoid putting themselves in situations where they will fail to figure out how to manage knowledge and its applications in their organisations (Sharma and Cowdhury 2007:13). Librarians need to have the expertise and skills on how to handle knowledge management processes in their libraries in order to become knowledge management practitioners. Academic librarians can benefit from integrating knowledge management into library processes by use of technology because they enable tapping of knowledge in their libraries. They can also benefit from having collaborations among involved parties and ensuring they complement the creation of knowledge management programs in their libraries.

The motivations for this research on knowledge management processes at St. Paul's University library is that the modern environment is changing in regards to knowledge management and therefore, librarians have to know how and be ready to operate in the knowledge economy. The information and knowledge world keeps changing. Therefore there is need for librarians to embrace the new technology. Listening and taking action upon the needs of students and faculty,

effective communication, information sharing and knowledge retention are the critical success factors of knowledge management initiatives.

1.9 Scope and limitation of the study

The primary focus of this study was on knowledge management processes at the St. Paul's University library where the point of investigation was on how knowledge was created, acquired, organised, transferred/shared, retained, knowledge management tools at the university and the challenges of knowledge management and enhancement of knowledge management in the library. The study was therefore limited to St. Paul's University library's main campus (Bishop Okullu Memorial Library) due to the limited period of the study involved and logistical challenges of involving more cases.

1.10 Definitions of key terms

The definitions of key concepts are essential because it enables specific contexts to be described and explained in a manner that pertains to the study. This will enable the reading audience to understand the concepts of the study.

1.10.1 Academic libraries

Carey, Justh and Williams (2003:4) define academic library as an entity in academic institution that provides a wide range of information services. The academic libraries employ a number of staff such as academic libraries. Therefore, the study uses the term academic libraries to mean units within academic institutions that support research and education by providing timely information through efforts of academic librarians.

1.10.2 Knowledge

Davenport and Prusak (1998:265) defined knowledge "as a fluid mix" of framed experience, values, contextual information, and expert insight that provides a framework for evaluating and incorporating new experiences and information. It originates and is applied in the minds of knowers. In organisations, it is embedded not only in document or repositories but also in organisational routines, processes, practices, and norms.

1.10.3 Knowledge management

Knowledge management is the effective management of the creation, retention, and sharing of information, involving the use of management techniques to optimize acquisition, dissemination, and utilization of knowledge (Awad and Ghaziri 2007).

1.10.4 Knowledge management processes/practices

Yahya and Goh (2002:459) defined knowledge management process as knowledge acquisition, knowledge documentation, knowledge transfer, knowledge creation and knowledge application.

1.10.5 Knowledge acquisition

Mills and Smith (2011:156) indicate the term ‘‘acquisition’’ refers to a firm’s ability to identify, acquire and accumulate knowledge (whether internal or external) that is essential to its operations.

1.10.6 Knowledge retention

Levy (2011:583) defined knowledge retention as a field that deals with issues relating to experts’ knowledge becoming a valuable organisational asset whereby experts are expected to pass on what they know to avoid knowledge loss. Therefore, for this study, knowledge retention is perceives as an effort geared at sharing knowledge from experienced employees so that such knowledge can be reused by other employees.

1.10.7 Knowledge transfer

Kumar and Ganesh (2009:163) defined knowledge transfer “as a process of exchange of explicit or tacit knowledge between two individuals, agents, a team or an organisation during which one agent, or individual, or organisation purposefully receives and uses the knowledge provided by another’’. Knowledge sharing involves gathering and disseminating internal as well as external knowledge within an organisation. Consequently, employees' participation in decision making process can also help an organisation to improve its performance in terms of meeting the goals in an efficient way (Danish *et al*., 2013:1340). In this study, knowledge sharing and knowledge transfer are used interchangeably.

1.10.8 Knowledge creation

Knowledge creation is the outcome of an interactive process that involves a number of individuals who are brought together in a project team or some other collaborative arrangement (Newell *et al.*, 2002:48).

1.10.9 Knowledge organisation

Knowledge organisation is defined as the analysis of information gathered from internal and external sources to create new knowledge or new knowledge products. Some of these knowledge products include lecturers' profile, database of experts, users profile and so on (Todd and Southon 2001).

1.10.10 Information and communication technology (ICT)

Rajaram (2003:1) defines information technology as "the technology which is used to acquire, store, organise, and process data to a form which is usable in specified applications, and disseminate the processed data". Information technology in simple terms means the application of hardware and software in the management and manipulation of data and information.

1.11 Chapter outline

The researcher compiled five chapters of the research report as summarised below.

Chapter one: Introduction and aim of the research.

This is the introduction chapter for the research study. The chapter introduces the research problem. The chapter further provides a background to the study and a formulation of the research aim and objectives. A conceptual framework is provided in this chapter in order to explain the relationship between the variables in the study. A brief account of the methodology adopted in the study is given as well as the research limitations. Other areas covered include the significance of the study, justification of the study, scope and limitation of the study and definitions of key terms as well as division of the chapters.

Chapter two: Literature review

This chapter outlines the literature review that supports the study of knowledge management processes in academic libraries. An overview of knowledge management is given starting with the concept of knowledge before delving into the following topics: The concept of knowledge;

Data, information and knowledge that include the knowledge hierarchy and the types of knowledge; Knowledge management; Perspectives of knowledge management, Knowledge management processes in academic libraries, Knowledge management in academic libraries; Studies related to knowledge management processes and practices in academic libraries; Information communication technology as an instrument for knowledge management processes. The chapter then ends with a summary of chapter two.

Chapter three: Methodology

This chapter covers the detailed methodology adopted for the study. The areas covered under this chapter are: research design, population of the study, sampling; data collection methods; data collection instruments; trustworthiness of the study, data analysis and presentation; ethical considerations; challenges and limitation of the study and summary.

Chapter four: Presentation and discussions of findings

This chapter presents and discusses key findings of the study. The findings were obtained using the research collection methods and instruments which are discussed in chapter three. The presentation of findings was done in accordance to the research problems which the discussions of the finding were in relation to the related literature.

Chapter five: Summary of findings, conclusions and recommendations

This chapter is the last chapter of the research report and it presents the summary of major findings, conclusions about major findings, recommendations for addressing key factors that limit application of knowledge management process in academic libraries. This chapter provides an insight into areas for further research.

1.12 Summary

This chapter has introduced the research problem upon which all the other chapters are based. The research is supported by the research problem that guides the study. A background to the study is provided to support the research problem. The other areas that were explored in this chapter were the aim of the study and objectives of the study which were derived from the research problem. The research further discussed the conceptual framework, methodology,

research limitations, scope of the study, significance of the study, definition of key terms, and division of chapters in this chapter. Finally, the chapter provides an insight of other chapters that constitute the research study. The next chapter reviews literature on knowledge management in general, and knowledge management processes in academic institutions.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter outlines the literature review that supports the study of knowledge management processes in academic libraries. An overview of knowledge management is given starting with the concept of knowledge before delving into the following topics: The concept of knowledge; data, information and knowledge that include the knowledge hierarchy and the types of knowledge; knowledge management; perspectives of knowledge management, knowledge management processes in academic libraries, knowledge management in academic libraries; Studies related to knowledge management processes and practices in academic libraries; Information communication technology as an instrument for knowledge management processes. The chapter then ends with a summary of chapter two.

This chapter reviews literature on the subject of knowledge management and knowledge management processes/practices in an organisation, particularly in university academy libraries. Literature review is an important step in any research, because it places a study in the context of what others have written (Mouton 2008; Newman 2006). While the aim of a literature review is to support one's argument, it also summarises and synthesises the ideas what others have already put forward. It discovers the gaps which have not yet been covered by previous research helps and refine and share the direction of the investigation (Wilkinson 2000). The reasons for conduction a literature review, is to account of what has been published on a topic by accredited scholars and researchers. Bless and Higson-Smith (1995:23) stated that the purpose of a literature review is to sharpen and deepen the theoretical framework; to familiarize the researcher with the latest developments in the area of research; and to identify gaps in knowledge and weaknesses.

2.2 The concept of knowledge

Without having the right understanding of the concept of knowledge, it becomes impossible to fully comprehend the concept of knowledge management. In this regard therefore the concept of knowledge is explained through its evolving flow of definitions. According to Evans, Dalkir and Bidian (2014:88) building knowledge is described as "activities which include obtaining, analyzing, reconstruction (synthesizing), codifying and organising knowledge"

On the other hand, Dretske (1981:12) posit that knowledge is that which people believe and value, on the basis of meaningful and organised accumulation of information through

experiences, communication or inference. From the researcher's perspective, this definition explains what knowledge is from its perceived origin and therefore making the definition foundational. As if picking up from where (Dretske 1981:12) left, Drucker (1989) defines knowledge from the perspective of its usability toward the attainment of a defined goal. He defines knowledge as information that changes something or somebody either by becoming grounds for action, or by making an individual (or an institution) capable of different or more effective action. Huber (1991:88) and Nonaka (1994:14) further emphasises on knowledge as being a justified belief that increases an entity's capacity for effective action.

Davenport and Prusak (1998:265) defined knowledge as a fluid mix of framed experience, values, contextual information, and expert insight that provides a framework for evaluating and incorporating new experiences and information. It originates and is applied in the minds of knowers. In organisations, it is embedded not only in document or repositories but also in organisational routines, processes, practices, and norms. This definition appears to borrow from the definition of (Dretske 1981:12) while further refining what qualifies to be the source of knowledge and its purpose. In line with previous definitions, Awad and Ghaziri (2007) defined knowledge as the understanding gained through experience or study. It is the know-how or a familiarity with how to do something that enables a person to perform a specialised task.

From the above definitions, it is evident that there is no consensus on the definition of what knowledge is, instead it provide a diverse perspective of the concept of knowledge.

2.2.1 Data, information and knowledge

In many occasions, people tend to use data and information interchangeably and yet these two terms have totally different meanings. According to (Zack 1999:88) data is a set of discrete, objective facts about events, usually stored in structured records. Data by itself has no meaning and too much data can cause confusion. On the other hand, information is an understanding of the relationship between pieces of data and relates to description, definition or perspective and answers questions like what, who, when and where (Zack 1998:88).

Information plays a key role in the functioning of today's economy and society. Information has become a commodity to be processed, exchanged and internalised into knowledge by a social system which has continually increased its information metabolism. Lastly, knowledge is broader than data and information and requires understanding of information. It is not only

contained in information, but also in the relationships among information items, their classification, and metadata, information about information, such as who created the information (Rus and Lindvall 2002:29).

According to Abraham (1999:185-189) there is a difference between information and knowledge, in that information is a tangible representation of data, usually in some end-user-oriented product like a car, book, or article, while knowledge is information in context of an individual's role, learning behavior or experience. Furthermore, knowledge differs from information because it can be put into action while information is given to end-users who transform it into knowledge through actions. Unlike knowledge, information can be stored and retrieved easily.

According to Babagheiby (2011) knowledge is a concept that is beyond information. On the other hand, information is the result of organising data in a meaningful way. However, knowledge is a result of interpretation of information based on personal understanding that is influenced by character and personality of the owner. Further, Floyde, Lawson *et al*., (2013) refers knowledge as information that is justified and personalised through the system of information adoption. Knowledge is the combination of information and thinking which a personal interpretation of information based on experiences, skills and personal capabilities (Davarpanah 2005).

Furthermore, Drucker (1995 and 1999) asserts that in the knowledge economy, the economy depends on knowledge for growth, provision of superior and differentiated services, highly educated, trained people and knowledge. Walsh and Ungson (1997:57) reiterates that organisational knowledge is stored in individuals and other repositories for present and future use, a phenomenon they refer to as organisational memory.

Holbeche and Smith (2005) are of the view that information is shared through a variety of media such as departmental meetings and conferences. Unlike information, knowledge (tacit) is not easy to share. The introduction of new technology, has paved way to interactive communication channels (such as WhatsApp, Facebook, Twitter, E-mail and LinkedIn). This media of communication has rapidly transformed the information communication landscape. Parties using any of the above communication channels receive massive volumes of information which they store and easily retrieve when the need arises.

Boom and Pimentel (2009) asserts that the main difference between knowledge and information is that knowledge is connected to the bearer while information can be disconnected from the bearer. Organisational knowledge is both explicit and tacit, and organisations must focus on knowledge because it is the most important resource for the business. Organisations should as well focus on how they can capture and use the knowledge to their advantage (Stafford and Mearns 2009). To clarify the relationship of the concepts of data, information and knowledge, a number of authors have used the knowledge hierarchy depicted in figure 2.1.

2.2.2 The knowledge hierarchy

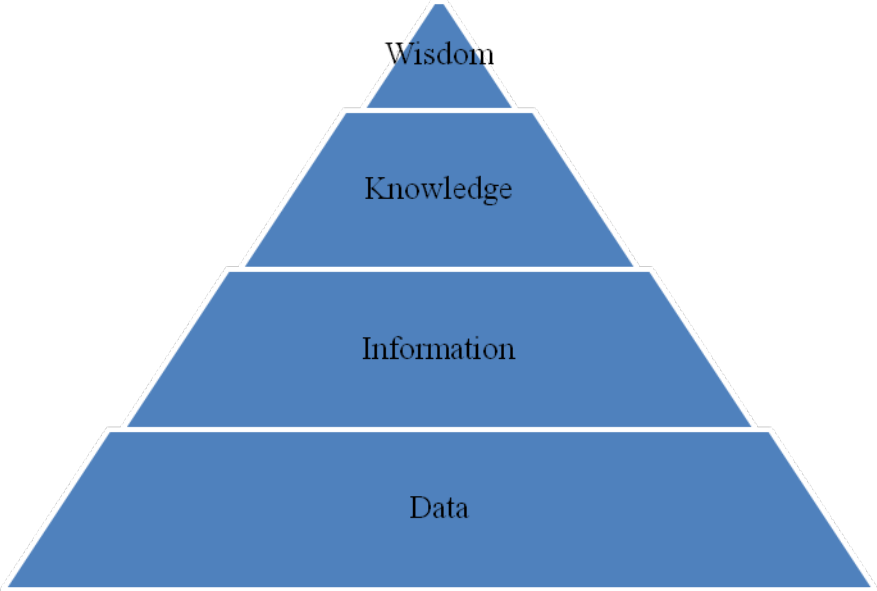

Figure 2.1 *DIKW hierarchy* Source: Pijpers (2009:7)

The knowledge hierarchy is commonly known as the DIKW (Data, Information, Knowledge, and Wisdom) hierarchy. At the bottom of the hierarchy is data which when interpreted and given meanings becomes information. According to Pijpers (2009:7) information is data that is in context. When information is applied to situations it becomes knowledge. Knowledge enables reasoning, explaining situations, and attaching meaning to situations. Some scholars include the concept of understanding or intelligence in the hierarchy as a level before attaining wisdom. The wisdom level involves using knowledge in new ways and applying it to different situations (Pijpers 2009:8). Beyond wisdom is enlightenment also referred to as insight.

2.3 Types of knowledge

The literature provides different types of knowledge, namely tacit and explicit knowledge. Polanyi (1967) and Choo (1998) have introduced "cultural knowledge" as the third type of knowledge which organisations need to manage. This research however, focused on explicit and tacit knowledge that is covered by most literature.

2.3.1 Explicit and tacit knowledge

Explicit knowledge is the first category of knowledge described by Polanyi (1966:167) and Saint-Onge (1996:10-16) where they explain that explicit knowledge is also known as "hard" knowledge, can be expressed in numbers and words and shared formally and systematically in the form of data, specifications, and manuals. It is part of everyday professional life, exemplified by manuals, books and articles. This type of knowledge can therefore easily be captured and then shared with others either through taught courses or through books for self-reading. Nonaka and Takeuchi (1995:13) regard explicit knowledge as information that is outside the mind of an individual.

According to Tiwana (2008) explicit knowledge is captured in the form of records, databases, websites and charts and this knowledge can easily be expressed in words, numbers and symbols. He further asserts that, explicit knowledge can be communicated and shared or transferred to others by the use of information technology. Technology use in the dissemination of explicit knowledge has rapidly transformed communication landscape, and has led many people to perceive and assume in their minds that knowledge resides within information technology (Tiwana 2008). From the above assertion, it is clear that information technology is a facilitator or enabler of the transmission of explicit knowledge itself (Magnier-Watanabe, Benton and Senoo 2011:91). Therefore, Jain (2009:10); Jacobs and Roodt (2007:230) asserts that explicit knowledge can be documented, shared or articulated into formal language.

Tacit knowledge is defined by Burger (2010:3) as "a cumulative store of the experience, mental maps, insights, expertise, know-how, trade secrets, skills, understanding and learning that exist in an organisation". Burger (2010:3) went further to indicate that it is included in the organisational culture that had been embedded in the past and present experiences of the organisations' people, processes and values. It is mainly within the brains of individuals or embedded in a particular group within the organisation.

Tacit knowledge is described by Nonaka (1994:16) as being deeply rooted in action, commitment, and involvement in a specific context. Tacit knowledge is also known as "soft" knowledge and includes insights, intuitions, and hunches, which can be difficult to express and formalise, and is, therefore difficult to share. It includes skills and "know how" that we have inside each of us and cannot be shared easily. It is embedded in practices of the people of an organisation. This kind of knowledge is acquired over several years. Nonaka *et al*., (1995:13) observes that the dimension of tacit knowledge that has been taken-for-granted is the dimension that consists of schemata, mental models, beliefs and perceptions deeply ingrained into our psyche and that is not only shared but is also taken as given. Irick (2007:6) defines tacit knowledge as personal, internal or interior knowledge deeply rooted in an individual's experiences, ideas, norms and values and emotions. Tacit knowledge is difficult to put into words because it is highly personal and hard to communicate or share with others (Jain 2009:12). One important aspect of tacit knowledge is that expertise rests on it, which makes tacit knowledge a competitive advantage.

According to Jain (2011:14) tacit knowledge can be achieved through face-to-face meetings, teleconferencing and electronic discussions, while Nonaka and Takeuchi (1995:13) think that tacit knowledge can be transmitted through social interactions between individuals – that is, through the socialisation component of the SECI model. Through dialogues, discussions, experience-sharing and observation, tacit knowledge is amplified at the group or organisational level.

Fombad (2009) states that tacit knowledge is more important and of a higher value than explicit knowledge because it is changing in nature very fast, therefore determining the extent of competition of companies in a turbulent market. In the literature, there is an agreement among renowned researchers that proves that tacit knowledge is the most important type of knowledge that exists in organisations because it can be put to action and used in innovation and creative practices, therefore adding value to goods and services (Tiwana 2008; Nonaka and Takeuchi 1995; McAdam and McCreedy 1999:101). Li and Zhu (2009:291); Jacobs and Roodt (2011:6) assert that tacit knowledge represents knowledge based on individuals competences, experiences and skills of employees. Organisations need both tacit and explicit knowledge as competitive advantages, but the creation, sharing, capturing and retention of knowledge is greatly influenced by the prevailing knowledge management practices in the organisation (Li and Zhu 2009:293).

2.4 Knowledge management

Undoubtedly, knowledge management has been said to be a valuable concept for almost two decades. Although it emerged originally in the world of business, the practice of knowledge management has now spread to the domain of non-profit and public sector organisations, including libraries. According to Kahreh, Shirmohammadi and Kahreh (2014) as cited by Mohammad, Yashar and Mahmood (2015) assert that, knowledge management is difficult to define. Further, Terzieva (2014) assert that knowledge management programs are typically tied to unpredictable objectives and results of an organsiation. According to Abzari and Barzaki (2011) they posit that, knowledge is the most important competitive resources which has been repetitively emphasised in the literature of knowledge management.

Awad and Ghaziri (2007) posit that knowledge management can be defined as "the effective management of sharing and retention of information in an organisation; the use of management techniques to fully optimize the acquisition, dissemination and use of knowledge". Schiuma and Carlucci (2012) further defined knowledge management as the process of managing corporate knowledge through an organizationally-specified and systematic process for organising, acquiring, sharing, applying and sustaining knowledge within the organisation. This process therefore, enables an organisation to utilise its information and knowledge resources, which aids in attaining high performance through increased efficiency, employee productivity, and organisational responsiveness (Wentland 2009).

Bryant as cited in Srikantaiah (2000:3) defines knowledge management as 'a discipline that promotes an integrated approach to identifying, capturing, evaluating, retrieving and sharing all of an enterprise's information assets. These assets may include databases, documents, policies, procedures, and previously uncaptured expertise and experience in the individual workers. Skyme (2001) on the other hand has defined knowledge management as a "process or practice of creating, acquiring, capturing, sharing and using knowledge, wherever it resides, to enhance learning and performance in organisations". Along the same vein, Bhatt (2001:68) defines knowledge management as "a process of knowledge creation, validation, presentation, distribution and application". Davenport and Prusak (1998:212) defined knowledge management

as process that include knowledge generation, knowledge acquisition, knowledge organisation, knowledge storage, knowledge transfer , sharing and knowledge retention.

According to Lee and Choi (2003:183) knowledge management is the process of transforming information and intellectual assets into enduring value. It connects people with the knowledge that they need to take action, when they need it. Graff and Jones (2003:183) on the other hand define knowledge management as the tools, techniques and strategies to retain, analyse, organise, improve and share business expertise. Additionally, Trivedi (2007) views knowledge management as the utilisation of strategies, tools, human resources to identify, manage and distribute knowledge in an organisation.

Von Krogh (1998:79) argues that knowledge management refers to identifying and leveraging the collective knowledge in an organisation to help the organisation compete. Munn (2001:160) further summarises several definitions of knowledge management that point towards the "idea that an organisation sees to identify, capture, disseminate and exploit the knowledge it possess for the benefit of its staff, employers and users. With knowledge management approaches, companies and organisations are creating competitive advantages through continuous learning and formulation of different types of knowledge (Ignacio and Rodrı´guez-Ruiz 2008:133). Onwurah and Chiaha (2008:134) have indicated that knowledge management is much more than data collection, processing and exchange of information which ties together activities that are connected to knowledge capital, knowledge economy, knowledge workers and learning.

Knowledge management is therefore the creation of relevant knowledge and the use of such knowledge positively towards attaining organisational goals. Knowledge management that is either tacit or explicit is therefore critical to organisations workforce in ensuring the delivery of organisational goals. Furthermore, the use of knowledge management suggests the appropriate production and use of the much needed highly skilled manpower. However the complicated nature of knowledge has made it difficult to demonstrate the value of knowledge management (Wen 2005:481).

Marque´s and Simon (2006:149) argue that, from a practical perspective, knowledge management can be seen as an organisational innovation involving changes in strategy and management practices of firms. Knowledge management is an elusive term as far as its definition

is concerned. Sutton (2007:9) observes that explaining knowledge management is a challenge and attributes it to a number of reasons. Those involved in the emerging field of knowledge management still today lack a single, comprehensive definition, an authoritative body of knowledge, proven theories, and generalised conceptual framework. Academics and practitioners have not been able to stabilise the phenomenon of knowledge management enough to make sense of what it is and what it comprises (Sutton 2007:8). Despite this lack of understanding of the concept, knowledge management is increasingly becoming popular worldwide and in a variety of disciplines such as business administration, computer science, library and information science and institutions or organisations like the universities, business enterprises and governments (Grossman 2007:38).

From the discussions on definitions of knowledge management, scholars have defined knowledge management from a variety of views. They include viewing knowledge management as a discipline, as a process or as tools, techniques and strategy. The process view of defining knowledge management was however found to be the most dominant and overriding view. Additionally, the content of knowledge management's sub-processes or activities that include; knowledge generation, knowledge acquisition, knowledge organisation, knowledge storage, knowledge transfer, sharing and knowledge retention were universally agreed upon. As examples, the definitions of Bhatt (2001:58); Skyrme (2001); Davenport and Prusak (1998:212) illustrates the agreement.

To elaborate on the above agreement on the content of knowledge management, Bhatt (2001:58) defined knowledge management as "a process of knowledge creation, validation, presentation, distribution, and application. Skyrme (2001) defined knowledge management as a "process or practice of creating, acquiring, capturing, sharing, and using knowledge, wherever it resides, to enhance learning and performance in organisations". Lastly, Davenport and Prusak (1998:212) defined knowledge management as processes that include knowledge generation, knowledge acquisition, knowledge organisation, knowledge storage, knowledge transfer, sharing and knowledge retention. Along the same vein, this study will therefore adopt the process definition of knowledge management. This study will therefore research on knowledge management processes that include knowledge generation, knowledge acquisition, knowledge organisation,

knowledge storage, knowledge transfer, knowledge creation, knowledge retention and knowledge sharing as advanced in existing literature.

2.5 Perspectives of knowledge management

There are several perspectives of knowledge management mentioned in this study namely, social-based, organisational-based, technology-based, cultural-based, and people-based and lastly the processes-based perspectives which were the areas of focus in this study.

2.5.1 Social-based perspective

According to Hlupic, PouIoudi and Rzevski (2002:90) social approach, recognises that the effective management of knowledge involves more than simply exploiting the data held on information systems. Therefore, knowledge management requires more attention to the human, orgnisational and cultural aspects. Knowledge is personal in nature meaning that knowledge resides primarily in the heads of individuals, and in the social interactions of these individuals (Grundstein 2008:415). Social based knowledge management emphasises knowledge that can be acquired and shared through a socially interactive process (e.g., through experienced and skilled people, trust, and reciprocal relationships among employees) to support knowledge management activities (Yang and Chen 2009:303).

According to Mason and Pauleen (2003:38), social approach to knowledge management includes the management of people and processes. On the other hand, Grant and Shahsavarani (2006) asserts that social approach is more concerned with nature of learning, the organisational culture and structure, and harnessing tacit forms of knowledge as an organisational resource. Therefore, a social approach to knowledge management integrates mostly “intangible” elements. However, Prieto and Revilla (2003) state, that the compatibility between both (technological and social) approaches is the key to satisfy customer needs and to improve the competitive position of the organisation.

2.5.2 The organisational-based perspective

Myers (2006) gives a broader perspective of organisational knowledge. He views it as information that is embedded in routine and process which enable relevant action. It is an innately human quality that resides in the living mind because a person should identify, interpret and internalise knowledge. This means a person should act more intelligently because of the prevalence of knowledge. According to Fombad (2008) organisational perspective is drawn

from the data, information and knowledge perspective, the personal perspective and the social perspective to present a deeper understanding of knowledge formed through unique patterns of interactions between technologies, processes, techniques, and people, which is shaped by the organisation's unique history and culture.

Ackoff (1989:3); Berger and Luckman (1996) mention that from the organisational perspective, knowledge is based on knowledge systems that consist of a series of knowledge processes such as knowledge creation, storage, transfer and application with data, information, knowledge and wisdom as important factors. They further mention that wisdom is acquired as organisational knowledge that accumulates over time, enabling firms to attain deeper levels of understanding and knowledge through the transformation of collective experiences and expertise. New knowledge is introduced in the knowledge system through learning. The ability for a knowledge system to acquire knowledge on its own is known as intelligence.

2.5.3 Technology-based perspective

Technology-based perspective of knowledge management is nowadays associated with various technological information systems. These information intelligence systems are those that can actually be associated with knowledge creation and sharing within the enterprise or an organisational network (Alavi and Leidner 1999:1). Davenport and Prusak (2000) throughout their book assert that knowledge management is more than technology, but is clearly a part of knowledge management. They also state that knowledge is derived from minds at work, successful knowledge transfer involves neither computers nor documents but rather interactions between people. According to Tiwana (2000:78) the important role of technology in knowledge management is to make it broad and reachable in order to enhance the speed of knowledge transfer. Technology supports digital capture, storage, retrieval and distribution of an organisation's explicit knowledge.

Syeiby (2001) asserts that the first categorisation of knowledge management is the management of information. He further says that technology approach views knowledge as objects that can be handled by information management systems. The key goal of this approach is to increase access to information through enhanced methods of access and reuse of documents through, hypertext linking, databases, and full-text search. Networking technology in general especially intranets and groupware in particular, are key solutions. This approach is based on the idea that

technology harnessed to a great volume of information will make knowledge management work (Sveiby 2001).

Choi and Lee (2002:173) refer to the technological approach as a system strategy. They argue that the main features of this strategy are three fold. Firstly, there is the emphasis on codified knowledge in knowledge management processes. Secondly there is the focus on codifying and storing knowledge via information technology and thirdly, there is the attempt to share knowledge formally. Although it is obvious that information and communication technologies are the key element in knowledge management, information and communication technologies are not dominant aspects of knowledge management. Coakes (2002:14) stresses effective knowledge management is more than managing the technology. Interestingly, Cong and Pandya (2003:25) points out that, although technology is a crucial enabler that helps to connect people with information and people with each other, it is not a solution to knowledge management.

2.5.4 Culture-based perspective

Culture-based perspective is associated with learning and communication. It is derived from the perception of the organisational environment and the combination of individuals who are workers collaborating in this environment. According to Alavi and Leidner (1999) the culture-based perspective carries the greatest weight for managers and the organisational environment thus affecting knowledge creation and sharing. A positive organisational culture will empower employees to interact more often therefore making workers to be more willing to share their knowledge and experience (Cross, Parker, Prusak and Borgatti 2001:100). For effective knowledge management, organisational culture is a very important factor. Organisation culture has a stimulation role that provides a suitable environment for knowledge exchange and thereby supporting knowledge activities (Janz and Prasamphanich 2003:352).

Robbin (2004) defines organisational culture as a set of values, beliefs, norms, meanings and procedures shared by members in an organisation. Syed-Ikhsan and Rowland (2004:102) also define organisational culture as shared values, beliefs and practices of people in an organisation. They argue that culture is a key factor that determines the outcome of other elements such as technology and management technique. Past researchers findings show that collaboration, trust and incentives are the three major dimensions of organisational culture (DeTienne 2004:26).

An organisation must have a powerful culture in which values, trust, openness and sociability stimulate people's interaction and knowledge sharing (Ngoc 2005). Alavi, Kayworth and Leidner (2005) argues that organisational culture affects knowledge management by influencing values of members of the organisation and their individual behaviors in dealing with the collective behaviors. Organisational culture also affects knowledge transfer. Individuals are assumed as knowledge owners who are responsible to do the knowledge sharing. When individuals get involved in the knowledge management process they reflect their values within their organisation. In the course of time, knowledge management turns into a segment of the organisational culture (Alavi *et al.*, 2005). Additionally, organisational culture can prevent efforts made to bring about organisational changes that are supposed to be implemented based on knowledge management plans (Yeh 2005).

2.5.5 The people/human resource-based perspective

People-based perspective refers to the entire human resources of an organisation that should be motivated and rewarded for creating, sharing and using knowledge in an organisation (Brun 2005). According to Kim and Seonghee (2000:8) people associated with knowledge management are of three types. They include technology experts, knowledge professionals and Library Information Science (LIS) professionals. Technology experts are concerned with design and development of tools and services for knowledge discovery. They build applications, databases, networks that allow the organisation to do their work with accuracy, reliability and speed (Kim and Seonghee 2000:4).

Knowledge professionals on the other hand are individuals in an organisation that have the skills, training and know-how to organise information and knowledge into systems and structures that facilitate effective use of knowledge resources (Kim and Seonghee 2000:6). He further asserts that Library Information Science (LIS) professionals have long been working as information managers. They differ from knowledge managers because information managers are concerned with public domain knowledge, while knowledge managers are oriented towards institutional implicit/tacit knowledge. Furthermore knowledge managers are the groups of people, who focus on the achievement of organisational goals. Knowledge managers identify present needs and problems, initiating practical and manageable activities to achieve set organisational goals (Kim and Seonghee 2000:8).

Ahmed, Lim and Loh (2002) points the most important feature of knowledge management is the motivation of staff to contribute and share their knowledge. A large portion of the knowledge possessed by any organisation is tacit in nature. Such tacit knowledge is embedded within individual experiences, judgments and intuition (Ahmed, Lim and Loh 2002). Some staff may have difficulty in expressing and communicating such knowledge. They may not want to share their knowledge for fear that once they share such knowledge, they no longer get valued. Additionally, some of them may fail to share their knowledge for free, because there are free riders who take advantage of others' knowledge and never share their own (Susarla, Liu and Whinston 2003:129).

According to Syed-Ikhsan and Rowland (2004:103) human resources are an enabler of knowledge management in the academic institutions. This great enabler is however affected by staffing issues, training concerns and staff turnover. In relation to staffing, it is important to note that employees bring to an organisation prior education, experience, knowledge and skills and thereby adding value to the organisation subject to the right jobs placement. Employees should also be given constant training in order to keep themselves up to date with new developments. This also helps in improving on the knowledge that employees had already gained. The additional knowledge gained by employees through training further enables them to convert their knowledge into the organisation's routines, competencies, job descriptions, business processes, plans, strategies and cultures. This then enable the creation of new knowledge in an organisation. Some departments are constantly affected by staff turnover. This results in knowledge workers leaving the organisation without having left the knowledge they gained over time behind for the organisation's use. Knowledge management ensures that organisations will have proper mechanisms in place to counter the challenge presented by staff turnover.

2.5.6 Process-based perspective

In process-base perspective Nonaka (1991:96) views knowledge management processes as turning data into information and transforming information into knowledge in a cyclic process that involves various activities such as knowledge creation, knowledge codification, knowledge transfer, and knowledge application. Davenport (1993:405) has identified knowledge management process to consist of knowledge acquisition; which includes finding existing knowledge, understanding requirements and searching among multiple sources, knowledge

creation which involves research activities, creative processes in advertising, writing books or articles, making movies, and so on, packaging: which involves publishing, editing, design work, applying or using existing knowledge: Auditing, medical diagnosis, and re-use of knowledge for new purpose: Leveraging knowledge in product development processes, software development.

Skyme (2007) and Wiig (1993) assert that the processes of creating, storing, sharing, using and re-using knowledge have been identified as being fundamental to good knowledge management practice and necessary for organisations and individuals to act intelligently. By engaging in these activities, organisations show that they are aware of the importance of tapping into the intangible assets of the organisations.

According to Branin (2003:56); Davenport and Prusak (1998); Jain (2007:377); Lee (2005); Mavodza (2010); Nonaka and Takeuchi (1995:70) noted that practices refers to the way ideas are translated into action in the process of accomplishing job functions. Knowledge management practices include the understanding of knowledge management: knowledge generation, knowledge acquisition, knowledge organisation, knowledge storage, transfer, knowledge sharing, and knowledge retention. Galagan (1997:26) proposed knowledge management process that include: gathering new knowledge, accessing knowledge from external sources, representing knowledge in documents, databases, software, embedding knowledge processes, products or services, transferring existing knowledge around an organisation, using accessible knowledge in decision-making, facilitating knowledge growth through culture and incentives; and measuring the value of knowledge management.

Townley (2001:54) discusses four knowledge management processes that include the creation of knowledge repository, improve knowledge access, enhancing knowledge environment and managing knowledge as an asset. He then maintains that, ‘‘knowledge management is based on assumptions of strategic planning’’. On the other hand, Tiwana (2002) classifies knowledge management into three different processes, knowledge acquisition, and knowledge sharing and knowledge utilisation. He describes Knowledge acquisition as being the process of development and creation of insights, skills, and relationships. For knowledge sharing he describes as the act of disseminating and making available knowledge that is already known. He lastly describes knowledge utilisation as being learning that is integrated into the organisation.

Seleim and Khalil (2007:37) classify knowledge management processes into five dimensions that include knowledge acquisition, knowledge creation, knowledge transfer, knowledge organisation and knowledge application. Processes refer to the internal processes in the organisation that are to be structured and organised for successful knowledge management (Brun and Caroline 2005). According to Basaruddin, Nawi, Rhami and Shukor (2009:735) knowledge management processes refer to a systematic approach to the identification, capturing, organisation and dissemination of the intellectual assets that are critical to the organisation's long term performance. Knowledge management processes help in turning an organisation's intellectual property (recorded or expert of its members) into a greater productivity, new values and increased competitiveness. Sallis and Jones (2012:87) points that the term "processes" is used, as a way to emphasise that these processes are essential and should work together to improve the performance of an organisation. However, knowledge management without certain key processes is expected to yield little in the way of real benefits.

The process oriented perspective is most clearly exemplified by Ikujiro Nonaka's research where knowledge is perceived as a "dynamic human process of justifying personal beliefs as a part of an aspiration for the 'truth'' (Nonaka 1994:15; Takeuchi 1995:70). An essential point is that focus is on the process in which knowledge is created and not on the documents or the rules, which are based on the process. This implies that continuous and dynamic adaptation to 'real life' takes place. From the process-oriented epistemology knowledge creation and sharing is considered as a continuous process where knowledge is transformed between tacit and explicit knowledge and between people and technology. The point of departure is here the so-called SECI model (Nonaka and Takeuchi 1995:70) which consists of four types of processes, which they identify as central in relation to knowledge management: Socialisation, Externalisation, Combination and Internalisation. According to Nonaka and Takeuchi (1995:71) the development of organisational knowledge are continuous and dynamic interactions between tacit and explicit knowledge. A concept that best explains the process perspective is the SECI Model.

2.5.6.1 The SECI Model

In their study, Takeuchi and Nonaka (2004:59) described the process of knowledge conversion through their SECI model. They divided a typical organisation into three entities, capable of creating knowledge and identified them as the individual, the group and the organisation.

Nonaka (1991:96) defined knowledge management processes as the whole range of activities that support the conversion of tacit to explicit knowledge and vice versa. Nonaka went further to identify these knowledge management processes as consisting of combination, externalisation, internalisation and socialisation. These are also called knowledge conversion processes because they are used to convert from one form of knowledge to another. The modes of knowledge conversion are summarised below:

- Socialisation: Individual to individual; tacit to tacit
- Externalisation: individual to group; tacit to explicit
- Combination: group to organisation; explicit to explicit
- Internalisation: organisation to individual; explicit to tacit

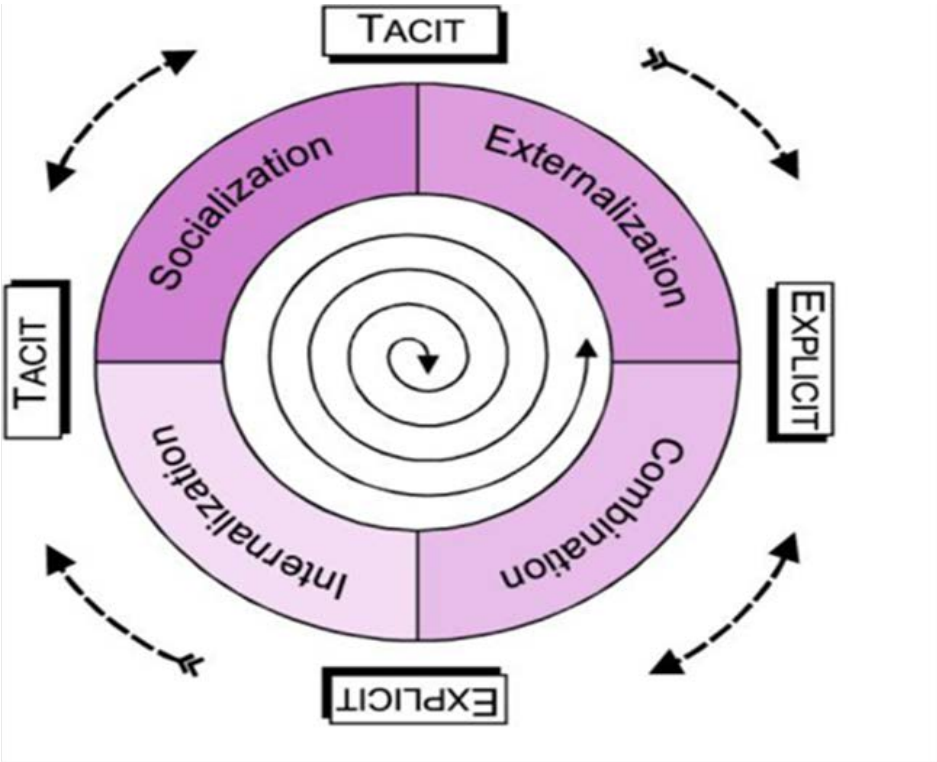

Figure 2.2 SECI model Source: Nonaka (2007:17)

2.5.6.1.1 Socialisation

According to Takeuchi and Nonaka (2004:60) knowledge creation always begins from individual level by sharing and creating tacit knowledge through direct contact. Harsh and Nold (2009) assert that socialisation describes an environment where individuals or groups of individuals share personal experiences, mental modes, beliefs, perspectives and tacit knowledge through individual direct contact. During socialisation, individuals share their experiences thereby creating tacit knowledge such as mental models and technical skills. According to Harsh and Nold (2009) in organisations employees share their experiences, mental models, beliefs and perspectives therefore enabling the experienced and senior employees to share tacit knowledge with their juniors. They further points out that, when employees exit the organisation through various methods, knowledge can still be located in other employees' heads. New employees, who may have greater knowledge of ICTs, for instance, have something to offer. According to this model, individuals may acquire knowledge through observation, imitation and practice without using language. Nonaka and Takeuchi (1995:63) argue that "apprentices work with their masters and learn craftsmanship not through language but through observation, imitation and practice".

2.5.6.1.2 Externalisation

According to Nonaka and Takeuchi (1995:64) "Externalisation is a process of articulating tacit knowledge into explicit concepts'. Through externalisation, tacit knowledge becomes explicit knowledge, "taking the shape of metaphors, analogies, concepts, hypotheses or models" (Nonaka and Takeuchi 1995:64). Externalisation describes a process whereby tacit knowledge is converted into a form that is capable of being transmitted to others outside of the immediate group, through the creation of procedures, e-mails, and any other forms of media that transmit knowledge to a wider sphere (Nold 2009:10). Nord (2009:10) gives examples of externalising knowledge through speaking to an individual, writing, drawing a diagram, giving a presentation or even conducting a lecture. Externalisation ensures that tacit knowledge is transferred and codified into explicit knowledge that can be easily shared with other employees, thus allowing knowledge to remain in the organisation even if the experienced retire or leave the organisation. Codified knowledge is easily stored in computers and other forms, so knowledge is preserved and retained in the organisation.

2.5.6.1.3 Combination

Combination is the conversion of explicit knowledge to explicit knowledge in order to create new explicit knowledge. According to Nord (2009:9) combination describes a process whereby individuals who are outside of the immediate group of personal contact receive knowledge that has been shared through some common media to combine the shared knowledge with existing tacit knowledge. Nonaka and Takeuchi (1995:67) refer to combination mode as the process of combining new knowledge from existing explicit knowledge. In their analysis, the "networking" of newly created knowledge and existing knowledge from other sections of the organisation triggers combination. The mechanisms for creating and sharing explicit knowledge in knowledge combination mode include sorting, adding, and combining, categorising, sharing or exchanging explicit knowledge through documents, meetings, and communication networks.

2.5.6.1.4 Internalisation

Internalisation is the process of converting explicit knowledge into tacit knowledge. Individuals or groups process newly received knowledge with their own tacit knowledge and by merging knowledge from internal and external sources create an entirely new nugget of knowledge (Nold 2009:9). Nonaka and Takeuchi (1995:69) argue that experiences through socialisation, externalisation and combination become valuable assets when they are internalised into individuals‟ tacit knowledge bases in the form of shared mental models or technical know-how. Documentation helps individuals internalise their experiences, thus enriching their tacit knowledge. According to Jennex (2007:11) manuals facilitate the transfer of explicit knowledge to other people, thus helping them experience the experiences of others indirectly. Knowledge transfer and retention occurs when people exchange tacit and explicit knowledge (Jennex 2007:8). These four modes of Nonaka and Takeuchi's (1995:69) SECI model show that knowledge can be transferred from one employee to another and from the heads of employees to documents/databases through knowledge conversion, thus retaining knowledge in the organisation. The explicit knowledge converted into tacit knowledge can only be retained and prevented from loss by sharing it with colleagues.

In the middle is the spiral line which represents a continuous movement between different modes of knowledge creation and the increase in the spiral radius shows the movement and diffusion of knowledge through organisational levels. According to Nonaka (1994:14) knowledge conversion

processes within the context of large organisations can be seen as a way to create knowledge through continuous dialogue on tacit and explicit knowledge. This could limit the value of these processes to the measurement of knowledge creation which is seen by other researchers as one of the main knowledge management processes. The SECI model enables better understanding of knowledge management processes. In this regard therefore, this study will adopt and rely on the SECI model.

2.6 Theoretical framework

Nifco (2005) posits that, knowledge management practices are based primarily on conceptual frameworks that are responsible for the design and development of methodologies and technologies that can provide some common ground in the way people use and manage knowledge in an organisation. Past literature in knowledge management models have focused on knowledge management processes. Knowledge management (KM) is regarded as a process that involves various activities. There are many variations of knowledge processes that have been explained in the literature, which have further been divided into many sub activities. These processes enable organisations to learn, reflect, unlearn, relearn and are usually considered essential for building, maintaining and replenishing core-competencies.

Regardless of the nature and number of knowledge management processes that have been proposed in the previous studies, a more comprehensive and systematic classification is needed for these processes to enable handling of all aspects relating to the Knowledge Management discipline. For this study, the Oluic-Vukovic process model (2001) has been adopted with appropriate enhancements as presented below in figure 3.1. The reason for the choice of Oluic-Vukovic process model (2001) is that it has been described in the literature as one model that covers completely the range of activities carried out in a university library (Bouthillier and Shearer 2002). Based on this modified Oluic-Vukovic process model (2001) knowledge management process dimensions that have been selected for this study consisted of knowledge creation, knowledge acquisition, knowledge capture, knowledge sharing, knowledge organisation and knowledge retention. The modification of the model is as shown in the figure 1.3 below

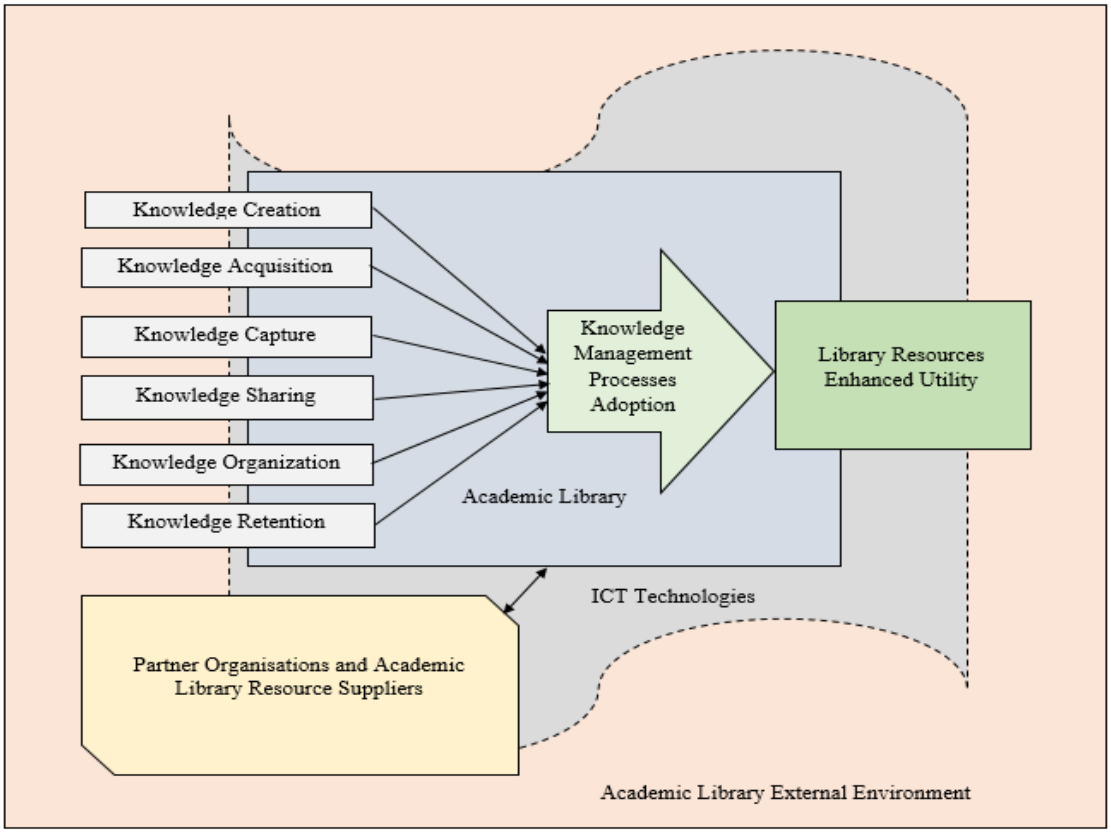

Figure 2.6 Theoretical framework of knowledge management processes in an academic library Source: Modified from Oluic-Vukovic process model (2001)

Karadsheh, *et al*,.(2009) points out that many of the models are broad enough to provide a complete analysis of the knowledge flow in an organisation. He further mentiontions that, all the six knowledge management processes need to be linked with knowledge management practices to perceive whether it has a significant impact in University libraries. Nevertheless, these processes need to be in place or cultivated strongly for the implementation of Knowledge management practices to be a success (Al-Hawamdeh 2002).

2.7 Knowledge management processes in academic libraries

The evolving technological environment in the 21st century and beyond influences our collections, services, user's staff and organisations. Therefore, the application of knowledge management process is evitable in academic libraries. According to Koeing (2000:193) Knowledge management (KM) is a process of creating, storing, sharing and re-using organisational knowledge (know-how) to enable an organisation to achieve its goals and

objectives of creating knowledgeable professionals and workforce. Although knowledge management processes seems to have been defined differently by different authors, these definitions are basically similar.

According to Salis and Jones (2002) knowledge management in an organisation begins with the systematic blending of the knowledge management processes with the organisation's normal work processes. This means that the knowledge management processes must be appropriate for the organisation. A number of models now exist that can help organisations to identify appropriate knowledge management processes. In other words, applying knowledge management processes successfully in academic libraries requires a model for the identification of knowledge management processes that must completely cover the range of activities in a given area of library services. The success of knowledge management in academic libraries also requires a combination of organisational factors. However, knowledge management without certain key processes is expected to yield little in the way of real benefits (Salis and Jones 2002). Knowledge management process has been defined differently by authors.

According to Maponya (2004) knowledge management process in academic libraries involves the capturing, sharing or dissemination and utilisation of knowledge. Maponya further identified specific knowledge management activities in academic libraries as participation in the teaching and research activities of the university (knowledge identification), collating internal profiles of academic librarians (knowledge creation), establishing knowledge link or contacts (knowledge acquisition) and using both internal and external media to disseminate knowledge.

According to Mosoti and Masheka (2010) knowledge management as a process is about the knowledge life cycle from identification of knowledge to improving organisational performance. According to Martin (2000:17) knowledge management processes should meet the following five organisational objectives, connect people with other knowledge people, connect people with information, enable the conversion of information to knowledge, encapsulate knowledge, making it easier to be transferred, and disseminate knowledge around the organisation. The term organisation in the study also refers to academic libraries. From the library perspective, the following knowledge processes are being proposed for knowledge management application in libraries:

2.7.1 Knowledge identification

Knowledge in the context of an academic library can be created through identification or anticipation of the needs of the users. This will enable university libraries provide value –added services to their users (Maponya 2004). Librarians must embark on knowledge need analysis of users so as to provide quality or user – centered services. It has been found that librarians can achieve this through a careful study of the university curricula, linking library services with the university's academic programmes, participating in the teaching and research activities in the University, and finally through participating more in user's reading (Maponya 2004). Therefore, knowledge identification refers to the knowledge activities aimed at identifying users' needs and requirements for the purpose of providing them with a variety of quality services. It is the first step in the knowledge processing chain.

2.7.2 Knowledge acquisition

This is the second step in the knowledge processing chain in any organisation such as libraries. According to Mills and Smith (2011:156) the term ''acquisition'' refers to a firm's ability to identify, acquire and accumulate knowledge (whether internal or external) that is essential to its operations. Pacharapha and Ractham (2012) defined knowledge acquisition as the process of development and creation of insight, skill and relationships. On the other hand, Gupta and Govindarajan 2000; Ragsdell 2009) mentioned that for knowledge to be acquired, there should be willingness and ability of a recipient to acquire and use knowledge which is a crucial elements. Therefore, during the process of knowledge acquisition, it is important that both the source and recipient should be willing to share.

Maponya (2004) further asserts that in order, to capture internal knowledge, academic libraries should devise systems to identify people's expertise and develop ways of sharing it. This requires a formal process, which includes collating internal profiles of academic librarians and also standardising routine information. Another approach is to begin to develop innovative ideas to add value to services. For instance, the type of enquiries that are most commonly received at the reference desk should be captured and placed within easy reach to better serve users. This can be achieved by creating a folder of frequently asked questions (FAQ). Apart from the fact that this will help librarians to provide in –depth customised reference service, it will also help them to become knowledgeable about handling different enquiries (Maponya 2004).

Wong and Aspinwall (2004:44) assert that, the external sources for an organisation to acquire knowledge could be through hiring people possessing the required knowledge or by purchasing knowledge assets such as patents, research documents or other intelligence. Maponya (2004) suggested that knowledge in academic libraries can be acquired through establishing links or networking with other libraries and with institutions of all kind, attending training programs, conferences, seminars and workshops, and buying knowledge products or resources in the form of manuals, blueprints, and research reports.

According to Probst, Raub and Romhardt (2000:226) "capturing and acquiring knowledge is crucial to the success and development of a knowledge-based organisation". They claim that organisations often suffer permanent loss of valuable experts through dismissals, redundancies, retirement and death. The reason for this is that much knowledge is stored in the heads of the people and it is often lost if not captured elsewhere. Once the needed knowledge has been indentified, it has to be acquired in order to be utilised. Bouthillier and Shearer (2002:1) Mohammad, Hamdeh and Sabri (2010:463) assert that, acquisition process is oriented to obtain needed knowledge from both internal and external sources, thus requiring access to knowledge in knowledge-based resources to capture the new knowledge, and exploiting the available knowledge.

Lee and Yang (2000:783) have identified two activities through which organisation acquires knowledge, which are; searching and organisation learning. They assert that knowledge acquisition through searching can be achieved via three means such as scanning focused research and performance monitoring. Meanwhile, organisation learning takes a fundamental part in knowledge acquisition since there is a need for organisation to enhance its performance constantly. This further stresses how significant it is for organisations to determine the best practices to be adopted in order to achieve excellent performance (McKeen *et al*., 2006; Asoh *et al.*, 2007:30; Liao and Wu 2009:76). According to Hayes-Roth, Waterman and Lenat (1983:129) knowledge acquisition can be considered as the transfer and transformation of potential problem solving expertise from some knowledge source to a program. The knowledge acquisition involves elicitation, collection, and analysis of knowledge. Experts have vast amounts of knowledge and thus it is important to consider their knowledge when considering knowledge acquisition (Roa 2005 and Burton 1999).

In order to obtain this kind of knowledge, Srikantaiah and Koenig (2000) suggested using knowledge ―expert systems" that will allow having knowledge not only from textbooks but also from human experts. Mchombu (2007:42) asserts that the use of ICT in a knowledge management approach is vital. According to (Wen 2005:1205) knowledge management managers need to look inside and outside their organisation or libraries and check if there is any new developments in the organisational structures, services, or technologies, which can be used to improve the performance of the organisation.

In addition, the interaction between people helps managing the knowledge effectively (Bhatt 2001:68). Knowledge acquisition can be done from different sources like experts, specialists, competitors, databases, and the organisation's archives. Knowledge can be acquired through different ways such as attending conferences, workshops, and from experts. However, knowledge may be acquired and understood in varying way from organisation to another, thus affect differently on the stored knowledge. Therefore, organisational memory is affected by the organisational culture (Huber 1991:88 and White 2000).

2.7.3 Knowledge organisation

This step ensures that knowledge captured is organised into easily accessible formats. The convenience of the user is usually considered in organising knowledge /information for their use. This process usually results in creation of knowledge products and services targeted at satisfying the escalating needs of users, or helping them to get the right information at the right time (Holm 2001). Knowledge organisation is defined as the analysis of information gathered from internal and external sources to create new knowledge or new knowledge products. Some of these knowledge products include lecturers' profile, database of experts, users profile and so on (Todd and Southon 2001).

Knowledge organisation can be seen when an organisation uses the knowledge and regards it as an asset (Rowley 2001:328 and Schein 1985:493). The organisation has to make an effort to increase the knowledge awareness and have it within its values and culture (Jantz 2001:39). Knowledge organisation indicates that the knowledge must be accessible and available at any time needed (Crowley 2005:121 and Hatch 2012:77). According to Hjørland (2008:80) knowledge Organisation (KO) is about activities such as document description, indexing and classification performed in libraries, bibliographical databases, archives and other kinds of

"memory intuitions" by librarians, archivists, information specialists, subject specialists, as well as by computer algorithms and laymen". Knowledge classification and codification are important for information retrieval and usage. They encourage the access and use of knowledge thus encourages the creation of new knowledge (Baskerville and Dulipovici 2006:105).

2.7.4 Knowledge dissemination

This is the fourth and last step in the model and it ensures that knowledge resources in the library are made available to users. This can be achieved through established system of communication between university libraries and their users. Knowledge dissemination refers to the knowledge activities aimed at making knowledge resources and services accessible to users. Kim (2004) noted that librarians should be able to extract, filter and disseminate external knowledge. Choo (2000) stated that, in libraries and information centers, knowledge can be disseminated through a variety of knowledge assets such as library alert system, library mailing lists and so on. It can also be disseminated through the use of new technologies such as groupware, internet/intranet and other discussion support systems (Rufai and Seliaman 2004). The other steps include;

2.7.5 Knowledge creation

Knowledge creation is the process of discovering new knowledge; this knowledge might be explicit or implicit, discovered from data or information, or by working on previous knowledge. This is done through blending and collecting explicit knowledge's available data or information to become new set, more complex than the present knowledge (Jaradat *et al*., 2011:134).

Knowledge creation, when defined as a process, refers to the initiatives and activities undertaken towards the generation of new ideas or objects (Mitchell and Boyle 2010:67). It is organisation's ability to develop new ideas and solutions regarding different aspects of organisational activities, from managerial practices to products to technological processes. On the other hand, Newell *et.al*, (2002:48) pointed out that "knowledge creation is typically the outcome of an interactive process that will involve a number of individuals who are brought together in a project team or some other collaborative arrangement". Knowledge creation is a particularly important process of knowledge management. It focuses on the development of new skills, new products, better ideas and more efficient processes (Probst, Raub and Romhardt 2000:224). Once knowledge has been shared, applied or used by the staff and partners, and have internalised it, the outcome

should be creation of new knowledge. Knowledge creation plays an important role in knowledge management.

According to Baskerville and Dulipovici (2006:83) the knowledge creation process can be seen as spiraling processes that involves a dynamic interaction that occur at different levels. They assert that, knowledge creation performance is based on the organisational culture. Barquin (2001:127); Bakar, Hamid, Nayan and Norman (2007) give an example of knowledge creation being supported by organisational policies such as using rewards as motivation for individuals. Knowledge creation can result from process that involves communication between individuals who are working or collaborating together (Maponya 2004:14). Knowledge can be created in different ways by focusing on finding, innovation, and gaining of knowledge. Creative thinking enhances the ability of individuals to solve problems, and having an effective organisation infrastructure are the most important elements in knowledge creation (Mavodza 2010).

From the library's perspective, knowledge creation involves more on the participation of user's reading and studying by identifying information needs (Tang 1998). In order for the academic library services to succeed, it must be linked with the university's academic program or curricula. Academic librarians can become part of the knowledge creation process through participating in the teaching and research activities of the university. Knowledge creation therefore should involve all the management effort through which the academic library consciously strives to acquire competencies that it does not have both internally and externally (Tang 1998).

2.7.6 Knowledge retention

According to Kim (2005) and Dan (2008) knowledge retention is the capture of critical knowledge and expertise that is at risk of loss when employee leaves and organisation. Gupta *et al.*, (2000:13), posit that, the major aim of knowledge retention strategy is to maintain knowledge base of the organisation. They acknowledge that knowledge is vital to the present performance of the organisation and so it must be maintained at the point of exploitation (Clarke and Rollow 2001:210). Tiwana (2008:103) suggest that, in order to make better use of tacit knowledge, a way must be found for it to be transferred directly to one another, making it explicit so that it can be shared throughout the organisation. According to Nonaka and Takeuchi (1995) individuals

who are rich in tacit knowledge (experience employees, retirees and other talented experts) constitute a wealth of intangible assets for the organisation.

Levy (2011:582) asserts that knowledge retention entails the fundamental concept that knowledge is an asset that is leveraged to deliver that value by capturing, adapting and transferring knowledge. He further explains, for an organisation to maintain an edge over its competitors, it needs to manage its knowledge and such issues as knowledge retention must be taken into consideration. The selection, storage and communication of knowledge are knowledge retention practices which imply that the organisational knowledge is being kept and preserved in the organisation (Levy 2011:600).

Wamundila (2009:19) points that knowledge retention is "A subset of knowledge management and is a process whereby an organisation uses its collective intelligence to accomplish its objectives by managing the social, cultural, and technological environment where information, expertise and insight converge learn from others through systematic, enterprise-wide approaches, exploiting ways to share and re-use existing knowledge, exploring ways to recombine knowledge to discover best practices and innovate better practices and transforming knowledge among tacit, implicit, and explicit forms".

According to Conrad and Newman (2000) knowledge retention is important as academic libraries or organisations are at greater risk due to the possibility of losing knowledge held by individuals or a group that interacts within an organisation or when they are about to leave the organisation. Knowledge retention aims at maintaining organisation's available knowledge and preserve new introduced knowledge. It involves all operations that include storage, maintenance, search, access, retrieval, and location of knowledge. Thus, we can assist the essential role of organisational memory through knowledge retention. According to Ozdemir (2010:108) organisations have to store what they did before and learn how to acquire, retain, and retrieve knowledge and experiences from current and previous projects to improve its performance. Thus organisational memory plays an important role in this context. E-mails, reports, and work processes are examples of information which might be saved in the organisational memory (Inmon, O'Neil and Fryman 2008).

According to Wamundila; Ngulube and Levy (2011) they established that knowledge retention could be achieved through documentation and integrating knowledge back into the organisation with special emphasis on retaining best practices. In order to safeguard against loss of knowledge, organisations should devise ways of retaining employees' know-how and best practices so that knowledge can be passed on to future workers, and replacements who should regain the on-the-job knowledge that ex-employees spent years accumulating (Thilmany 2008). Wamundila and Ngulube (2011) further posit that, knowledge can be retained in an organisation through various strategies that may involve education, training, establishing communities of practice and professional networks, documenting the processes and using advanced technology to capture work processes. Therefore this knowledge has to be captured and stored in databases, documents, software and processes, products and services.

2.7.7 Knowledge storage

Knowledge storage is the process of storing the organised knowledge in organisational repositories for preservation as well as multiple uses through the application of a number of retrieval tools and techniques. It is generally believed that if knowledge is valuable, then storing such valuable assets should be given an utmost concern. After obtaining the required knowledge, it is expected to be coded and recorded to enable easy access to such knowledge (Kiessling *et al.*, 2009:421). Kiessling *et al.*, (2009:430) believe that if knowledge is valuable, then storing such valuable assets should be given an utmost concern. After obtaining the required knowledge, it is expected to be coded and recorded to enable easy access to such knowledge. From competitive advantage perspective, there is no way one can talk about knowledge storage without mentioning special kind of database that is called the Knowledge Base, which allows collection, organisation and retrieval of knowledge to be carried out in a computerized manner. Knowledge base can be categorised into two major types: The Machine-readable and the Manual knowledge base (Kiessling *et al*., 2009:433; Asoh *et al*., 2007:29; Liao and Wu 2009:64).

2.7.8 Knowledge sharing/transfer

Kumar and Ganesh (2009:163) define knowledge transfer "as a process of exchange of explicit or tacit knowledge between two individuals, agents, a team or an organisation during which one agent, or individual, or organisation purposefully receives and uses the knowledge provided by another''. Knowledge sharing or transfer involves the exchange of information and knowledge

from one source to another through a person, group or organisation (Fugate, Theodore and Mentzer 2009:249; Lee *et al.*, 2005:481; Liao and Wu 2009:65). The general problem in knowledge management is that most of the large organisations are not conscious of the valuable of the knowledge they have (Kiessling *et al.*, 2009:422). With effective knowledge management processes, hidden knowledge can easily be discovered, and such a discovery is mostly facilitated via sharing. According to Liao and Wu (2009:67) knowledge sharing plays an intermediate role to support knowledge exchange in the organisation and aids the achievement and sustenance of their competitive advantage.

According to Kumar and Ganesh (2009:164) knowledge transfer enables the exploitation and application of existing knowledge for the organisation's purposes. Knowledge sharing comprises a set of shared understandings related to providing employees access to relevant information, building and using knowledge networks within organisations. The goal is to distribute the right knowledge to the right people at the right time. The sharing and distribution of knowledge are very essential for turning isolated information or expertise into something that is valuable to the organisation as a whole. Knowledge sharing is based on the experiences gained internally and externally in the organisation. Making this knowhow available to other organisational members will eliminate or reduce duplication of efforts and form the basis for problem solving and decision making (Branin 2003:41).

From academic libraries perspective, it is noted that a great deal of knowledge sharing is entirely uncoordinated and any sharing of information and knowledge has been on an informal basis and usually based on conversation. Although knowledge has always been present in organisations, and to some extent shared, this has been very much on an *ad hoc* basis, until recently it was certainly not overtly managed or promoted as the key to organisational success (Webb 1998). More emphasis is placed on formalising knowledge sharing.

On the other hand, (Von Krogh, Ichijo and Nonaka 2000; Bornemann *et al.*, 2003) argue that, knowledge logistics deal with knowledge requirements, knowledge availability, and knowledge transfer. Knowledge requirements represent the first step in the direction of influence of knowledge management processes. The company's knowledge holders represent the available knowledge. According to (Wenger 2004:7) "Knowledge is power and one may well wonder why anyone would want to share it. However, he noted that hoarding knowledge is not necessarily the

best way to benefit from its power. In a knowledge economy, reputation is a crucial asset, and sharing knowledge is therefore also a source of power, providing that one's community serves as a platform to build a reputation". Therefore, in higher-education context, knowledge sharing as a vital pillar of knowledge management and is critical to academic performance (Daud, Abdul and Hamid 2006). It is clear that knowledge sharing is greatly supported to improve academic performance.

According to Al-hawari (2007:3) technology plays the role of enabler by facilitating the information dissemination process, connecting people and systems and enhancing access to large depositories of information. There are many examples of ICT tools that can facilitate the distribution of information and in the process enhance knowledge transfer. E-mail, online discussion forums, video-conferencing, and collaboration tools enable knowledge sharing within the organisation. However, there are other issues that one should consider to achieve successful knowledge sharing. For example, any factor which can impede, complicate and harm knowledge internalization must also be considered. Another example, individual attributes and skills may affect the knowledge sharing environment and managers who determine the employee positive and negative emotion at work are responsible for supporting the organisational knowledge sharing capabilities (Al-hawari 2007:3).

Finally, the knowledge transfer is the procedures of linking the available knowledge and the knowledge requirements. The knowledge can be transferred via human networks or via information and communication technologies. An example of knowledge transfer via human networks is personal communication, which is considered as the most valuable form but at the same time the most time consuming forms. Telephones and videos conferencing are examples of knowledge transfer via telecommunication and communication across geographical boundaries (Bornemann *et al.,* 2003). Therefore, Information Communication Technology (ICT) tools are helpful in supporting the knowledge management processes (Hayes 2007:226).

The existing literature reviewed for the purpose of this study showed that knowledge management processes differ slightly but in most cases, they range from three to five key activities (Alavi and Leidner 2001:107; Yahya and Goh 2002:457; Dalkir 2005; Soliman and Spooner 2000:337). Alavi and Leidner (2001) postulated a four knowledge management process consisting of creation, storage /retrieval, transfer and application. Yahya and Goh (2002:459) on

their part postulated a five knowledge management process consisting of knowledge acquisition, knowledge documentation, knowledge transfer, knowledge creation and knowledge application. Dalkir (2005) on his part summarised the knowledge management process into three activities of knowledge capture and/or creation, knowledge sharing and dissemination, and knowledge acquisition and application.

Maponya (2004:12) posit that, libraries have been identified as one of the service-oriented organisations where knowledge management can be applied. He asserts that academic University libraries in the world are applying knowledge management to provide better services for their users. It is, therefore, important to examine the organisational variables known as knowledge management enablers that could facilitate the process of knowledge management processes application in libraries.

2.8 Knowledge management in academic libraries

Knowledge management in academic libraries has been defined as "not managing or organising books or journals, searching the internet for clients or arranging the circulation of materials (Trivedi 2007). However, the mentioned activities can in some way be part of the knowledge management spectrum and process. Knowledge management is about enhancing the use of organisational knowledge through sound practices of knowledge management and organisational learning. Gaveli (2016) posit that, knowledge management is libraries should be focused on effective research and development of knowledge, creation of knowledge bases, exchange and sharing of knowledge between library staff, training of the library staff, speeding up explicit processing of the implicit knowledge and realizing of its sharing. Knowledge in academic libraries can be acquired through establishing knowledge links or networking with other libraries and other institutions of all kinds. Knowledge acquisition can also be gained through attending training programs, conferences, seminars and workshops, buying knowledge products or resources in the form of manuals, blueprints, reports and research reports (Shanhong 2001)

Maponya (2004:12) on the other hand holds the view that the basic goal of knowledge management within academic libraries is to leverage the available knowledge that may help academic librarians to carry out their tasks more efficiently and effectively. According to Maponya (2004:13) Academic libraries can become part of the knowledge creation process through participating in the teaching and research activities of the University. He further asserts

that, knowledge creation in this context should involve all the management effort through which the academic library consciously strives to acquire competencies that do not have both internally and externally Capturing and acquiring knowledge is critical to the success and development of a knowledge-based organisation. Organisations often suffer permanent loss of valuable personnel to dismissals, retirement and death. The reason for this is that much knowledge is stored in the heads of the people and is often lost if not captured elsewhere. Knowledge management is also aimed at extending the role of the librarians to manage all types of information and tacit knowledge for the benefit of the library (Maponya 2004:13).

According to Levinge (2005:68) there are scarce initiatives to apply knowledge management practices in libraries. He asserts that librarians are experts in information management (IM), yet libraries lack the infrastructure to foster effective knowledge management within their own walls. Therefore, according to Lee (2005:469) the new roles of the libraries should be that of a learning and knowledge center for their users. It should also serve as intellectual for their respective community where people and ideas interact in both the real and virtual environments to expand learning and facilitate the creation of new knowledge.

Sarrafzadeh, Maryam and Hazeri (2009) cite Sarrafzadeh (2005:92) that the influence of technology in the library environment has facilitated libraries to be engaged in knowledge management through digitisation of library resources. This move towards digital libraries, provision of remote access to internet-based knowledge resources, and providing 24 hours a day and seven days a week reference services through the web, are potentially important steps toward knowledge management implementation in libraries.

Parirokh, Daneshgar and Rahmatollah (2009:2) argue that libraries are knowledge creation enterprises where large amount of knowledge is created in various knowledge related activities. Library staffs thereby become a major source of knowledge. In this regard therefore, the success of university libraries and information centers in support of the mission of their parent institutions lies in key knowledge management roles. These knowledge management roles include generation of knowledge and equipping of people with knowledge that enables them serves the society. Its resultant effect becomes advancement of the well-being of mankind that is dependent on a library's ability to utilise the knowledge of its staff to serve its user community.

Libraries can only realise such a goal by planning to apply and applying knowledge management (Aswath and Gupta 2009).

Kumar (2010) points out that the main function of all the academic libraries is to support the objectives, mission, and vision of the parent institutions. In order to realise this function, academic libraries should have to evolve as their parent institutions' mission, vision and information needs change. According to Mavodza and Ngulube (2011:15) knowledge management has become increasingly significant in libraries due to the rapid technological changes that alter the way in which library services are provided. This can be attributed to digitalisation and new communication technologies that also include social media (Mavodza and Ngulube, 2011:15). On the role of academic libraries in knowledge management, Ongwen (2012) stressed that while charged by the mission to expand access of knowledge for their users; academic libraries should set high knowledge management goals. An organisational culture which emphasises cooperation, sharing, and innovation can only be established by strong leadership and commitment from its library director and a shared vision by its library staff becomes of paramount importance.

According to Xin (2011:932) the services of a university library are very important. It is a determinant for service improvement and increased competitiveness relative to other university libraries. Knowledge management enables such organisations to share new ideas, insights, and discover new things across the board. In this new era of knowledge economy and with its emphasis in knowledge sharing and service delivery, academic libraries benefit greatly from adopting knowledge management processes in their operations. To survive and flourish, organisations including academic libraries need to respond to many new pressures to generate the best outcomes from the resources they have at their disposal. It is therefore common to find academic libraries pulling together information resources and operating as "knowledge gateways" (Ravi 2008:2 cited by (Mavodza and Ngulube 2011:15). Knowledge sharing is an important aspect in knowledge management. It allows knowledge exchange among colleagues and enable participative decision making. Knowledge sharing involves gathering and disseminating internal as well as external knowledge within an organisation. Consequently, employees' participation in decision making process can also help an organisation to improve its performance in terms of meeting the goals in an efficient way (Danish *et al.*, 2013:1340).

In recent studies, there is an indication that intranets and advanced web applications have provided an excellent platform to share knowledge within and outside of academic libraries. Increasingly, academic libraries are using blogs, wikis, RSS, social media and other Web applications for knowledge sharing purposes (Bejune 2007:35; Chu Kai-Wah 2009:170; Kim and Abbas 2010:211; Tripathi and Kumar 2010). Kim and Abbas (2010:218) examined 230 randomly-selected academic library Web sites and found that RSS and blogs have been widely adopted by academic libraries. Academic library as an organisation may want to look outside of its own boundaries to acquire knowledge. It therefore becomes important to have access to external information made available in academic libraries. Librarians have been dealing with building and searching online databases for a long time. This kind of experience can be very helpful in building knowledge and repositories. Knowledge management as a subject has also been debated, discussed and adopted in the university world.

In a study of knowledge management practices in East and Southern Africa academic libraries, Jain's (2007:377) found out that only a small number of libraries have incorporated a knowledge management strategy component in their library strategies. He further noted that even though all University Librarians that were targeted for the study and responded professed that their libraries were learning organisations, half of them admitted to not having a culture of knowledge sharing in their libraries. Parirokh (2008:119) agrees with Jain (2007:377) that academic libraries do not generally have specific knowledge management policies and strategies in place.

Similarly in a study conducted by Maponya (2004:23) at the University of KwaZulu-Natal library, it was noted that even though staff indicated that there was some sharing of knowledge, there was a lack of systems that encouraged this activity. Moreover the library had no written policies or a strategy pertaining to knowledge management activities. For knowledge management practices to be effective, understanding of knowledge management concepts is critical. The understanding of knowledge management processes would greatly contribute to the level of knowledge management practices.

Knowledge management is therefore a discipline that would enable individuals, teams and entire organisations to collect and identify knowledge that is vital to them, capture, improve, organise and use it. Knowledge management subsequently enables an organisation make knowledge

considered vital available in the most efficient manner to those who need it so that they can exploit it creatively to add value and achieve their goals (Maponya 2004: 23).

2.9 Studies related to knowledge management processes and practices in academic libraries

According to (Salis and Jones 2002) the concept of knowledge management is generally described based on a number of key processes of knowledge management. They assert that the processes have several interpretations, whereby the term processes is sometimes referred to as activities or practices and therefore, they refer to the same thing which is the dimensions of knowledge management.

The findings of Parirokh, Daneshgar and Fattahi (2008:122) in their study on the existing state of practices in tacit knowledge sharing in university libraries, indicates, that intranets, telephone lines and traditional face to face communication methods have been used by most of the librarians. Knowledge sharing initiatives had however not been institutionalised in a majority of the libraries that participated in the study.

A case study by Mavodza (2010) focused on knowledge management principles and practices and the possibility of applying knowledge management in the provision of library services. He investigated the possibility of using knowledge management practices and tools to improve the quality of service of Metropolitan College of New York (MCNY) library. His objectives of the study were; firstly, to investigate information provisioning practices at MCNY. Secondly, to determine the concept of knowledge management was well understood at MCNY. Thirdly, was to determine the need for knowledge management practices in MCNY library. Fourthly, to determine and assess what knowledge generation, knowledge sharing or transfer, knowledge retention and use of policies by MCNY and the library were in place. Fifthly, to determine the extent which MCNY encourages information flow and use of modern technologies. Lastly, to enable him make recommendations on implementation of knowledge management practices that would enhance the value of library service at MCNY, enhance performance and improve the quality of service of MCNY library.

Kimile (2011) did a study that investigated knowledge management practices at Moi University, a university located in Kenya. The case study relied on a qualitative research methodology where

he utilised Author Andersons (1995) Knowledge Management Assessment Tool (KMAT). The study data was collected using semi-structured interview schedules. The participants for this study included deans, heads of academic departments and key informants drawn from the top management including senior librarians, ICT and non-teaching staff. According to Kimile (2011) study findings established that Moi University lacks integrated knowledge management strategies that enable a knowledge sharing culture, and that the technology available did not adequately address Knowledge Management. There was also lack of institutional repository and the existing organisational culture did not encourage knowledge sharing. Kimile (2011) recommended that Moi University develops an Institutional Repository, provides knowledge management technology and tools, formulates a knowledge management strategy and addresses the barriers that impended knowledge management. Kimile (2011) also recommended further research on the adaption and utilisation of COP's as a tool for knowledge sharing. This study generally focused on knowledge sharing.

In his case study, (Maponya 2004:24) asserts that academic libraries may have a suitable environment for knowledge management practices and yet fail to put knowledge management processes in place. He gives an example of the University of Natal, Pietermaritzburg libraries, in 2004, where it did not have knowledge management practices in use because of lack of a knowledge management policy and strategies; lack of leadership in knowledge management activities, and the lack of knowledge capturing and acquisition.

A case study by (Jain 2007: 385) was done on knowledge-sharing in East and Southern African libraries, which included Botswana, Zimbabwe, Namibia, South Africa (SA), Swaziland, Tanzania, Uganda, Zambia and Kenya. About 50% of all participants acknowledged that their library staff had a strong culture of knowledge-sharing. They believed that through professional discussion and other exchange programs they could share their knowledge internally, regionally and globally, hence facilitating better service delivery to their customers. Jain (2007: 385) states that lack of knowledge sharing in libraries will result to the failure of knowledge practices. Knowledge-sharing is very important, because once a person leaves an organisation; he or she takes this acquired knowledge with him or her. Libraries that participated in this study all agreed that knowledge-sharing can take place through e-mails, intranets and meetings. Although the libraries did not really make use of Nonaka and Takeuchi's theory, the SECI model is indeed

applicable. Knowledge sharing was done through the distribution of externalised explicit knowledge as well as exchange programmes to the broader organisation. A strong partnership with other libraries and the sharing of knowledge with each other was found to exist at the East and Southern African libraries.

Another case study was conducted by Wamundila (2008) on how to enhance knowledge retention at the University of Zambia (UNZA). The study used mixed research methodology in case study design and data was collected using interviews and questionnaires. The sample of 205 responded, which included the registrar, the staff development officers, the deputy registrar, deans of schools and university librarian. The findings of the study indicated that UNZA lacked knowledge retention practices that could enable relevant knowledge retention in the university. Wamundila (2008) recommended a framework that could be considered by the university to develop retention policy. He further proposed that future studies be done to enhance knowledge harnessing and retention, with an approach that address aspects of technology infrastructure, oranisational culture and management. Though the study was expansive, it mainly focused on knowledge retention.

The above reviews of related studies showed that these studies focused on knowledge management in different academic libraries looking at approaches and implementations that have been taken by academic libraries on knowledge management. An overall assessment of the progress of knowledge management projects in libraries indicates that knowledge sharing, knowledge retention, knowledge management strategies and knowledge management practices in general were the major area of specialisation because of their competencies in the areas. There is therefore a knowledge gap on the study of knowledge management processes in academic libraries in Kenya and more so in the context of St Paul's University library. Furthermore, to realise their mandates, academic libraries should concentrate on improving knowledge management processes and implementation of knowledge management strategies, knowledge management policies and supporting Information Communication Technologies. Through the processes of knowledge management, an organisation should focus on the systematic exploitation and reuse of knowledge. Additionally, from the above studies, there is a knowledge gap on knowledge management process that encompasses knowledge creation, identification, acquisition, retention, storage and sharing. This study intends to fill this gap. This study will

therefore be based on all the knowledge management processes such as, knowledge creation, acquisition, organisation, transfer, sharing and retention, in the context of an academic library at St. Paul's University libraries in Kenya.

2.10 ICT as an instrument for knowledge management processes

In the 21st century, Information and Communication Technology (ICT) has changed the world, by influencing the life of humans in all directions. According to Olivera (2000:817) technology serves a variety of functions such as storing large amounts of information, making information accessible to individuals, providing means for communication, generating records of interactions and transactions, and automating processes. Further, Gholami *et al.*, (2013) posit that information technology focuses on meeting the needs of the users through integration, creation, selection and administration of information and data. Adoption of Information Communication Technology (ICT) in organisations has offered increased opportunities for managing knowledge management processes in libraries and enhanced traditional knowledge management methods and sources through new models and methods such as Digital library, Internet, Library Consortia and Expert Systems. Its success depends critically on successful knowledge management. The key to knowledge management is capturing the knowledge practices and how information centres get their work done and how various elements of information are connected to it.

Bray and Konsynki (2015) in the study of knowledge management and its impact on organisational performance emphasises the importance of IT knowledge diffusion in the entire organsiation. The authors emphasises that improvement on performance is obtained best when IT knowledge and skills are imparted on all employees across the board (Burtonshaw-Gunn and Salameh 2009). Abell and Oxbrow (2001:54) points that information technology has improved the ability to store, access, manipulate and use information in a variety of ways by providing us with the ability to improve communication between people and encourage collaborations. Technology cannot mandate human collaboration, "if used effectively, it will streamline work operations and improve communications between people".

Figallo Rhine (2002) argues that Knowledge management is a techno activity and justified their argument by showing that without the involvement of humans and their social concerns in all stages of the knowledge management process technology alone can achieve little in the advancement and dissemination of knowledge in organisations. Likewise without appropriate

information technology many opportunities and conveniences for sharing and generating new knowledge would be lost. Information technology is one of the most important tools in knowledge management processes that enable dissemination of information to users and patrons in academic libraries. Technology plays an important role in knowledge management, although knowledge management is not about technology (Al-Hawamdeh 2002:143). Flynn (2004) argued that one characteristic of successful knowledge management initiative is the existence of appropriate technology to support the knowledge management process. Indeed she advocated that, not only should appropriate technology be in place but employees should be trained to use it and regular widespread use be encouraged.

Kondo (2006:1) further says that, to accomplish viable knowledge management acquisitions and especially in this time and age when knowledge changes with each passing day, use of information technology is vital because it becomes possible and easy to link closely knowledge sources and knowledge workers by computer networks and thus constructing knowledge networks in libraries based on realisation of single- point information. Information technology also assists in the storage of the accumulated and conveyed knowledge, in retrieval, in sorting and in dissemination. Information technology can support knowledge management by providing the means to organise, store, retrieve, disseminate and share explicit knowledge and information rapidly around the organisation and the world and by connecting people with people through collaborative tools to capture and share tacit knowledge (Jain 2007:377). Dalkir (2005) cited by (Parirokh *et al.*, 2009) noted that information technology components, such as intranet, emails, databases, websites, alerting services, bulletin boards, chat facilities facilitates knowledge acquisition, organisation, dissemination, access and application.

University libraries should adopt knowledge management system so that they can be able to share knowledge expertise held by people and users that are displaced by geographical locations. A knowledge management system is a computerised system designed to support the creation, storage, and dissemination of information. Debowski (2006) noted that such a system contains a repository that is central and well-structured, effective and easy to use search tools that users can use to find answers to questions quickly. The academic libraries need to invest in technological tools that make the exchange, capture and application of knowledge effective and efficient. The internet is most one of the most significant enabling technologies in knowledge management,

and is the biggest depositories of information. Getting the relevant information to the relevant people at the appropriate time is crucial for meeting the expectations of users. According to Ghani (2009:33) knowledge management provides a wide range of information technology tools to create, codify, and share knowledge, such as, web 2.0 technologies, decision support and knowledge management systems.

According to Vaccaro *et al.,* (2009:1278) information technology (IT) tools are used to capture, codify, store and distribute knowledge throughout the organisation. They include; tools such as Internet, Intranet, Extranet, Email, Electronic Data Management Systems (EDMS), Decision Support Systems, Expert Systems, Groupware, Wikis, Weblogs, and other shared networked and net-based technologies that are used to leverage knowledge management processes in the organisation. Information Technology (IT) provides a platform of communication among members in an organisation and to get access to the right information at the right time for the right purpose. Therefore, there must be a balance between knowledge management initiatives and engagement of information technology tools and infrastructure in order to exploit the benefits of knowledge management to the fullest. By focusing on information technology as the most integral component of knowledge management, one may jeopardise the potential benefits from knowledge management activities and may lead to failure of knowledge management implementation. Vaccaro *et al.,* (2009:1278) identifies all the information communication tools (ICT) which are useful in knowledge management, and categorises them by their applications in knowledge management processes. According to Raja *et al.,* (2009:702); Sahasrabudhe (2001:270) knowledge management enabling tools include the following:

2.10.1 Internet and extranets

According to Laudon and Laudon (2007) the internet is now the world's public communication system due to its availability in most part of the world linking individual people worldwide. It is a huge network of computers in a global scale that is connected via telecommunication links, for the sake of sharing information. The World Wide Web is the worldwide collection of documents linked together. The internet provides extensive pathways for sharing knowledge because of its simplicity and ubiquitous presence (Saharabudhe, 2001:271). Echezona and Ugwuanyi (2010:421) point that the internet is an indispensable tool for teaching, learning and supports research in the present global world. It is the main medium for the knowledge economy (Oye, *et al.,* 2011). Clients use the internet to request information from a particular Web server and the

server sends the requested information back to the client over the internet (Laudon and Laudon, 2007). This gives academic libraries leverage to acquire more information from other sites. Organisations set up web sites to assist people access knowledge through the internet. Aswarth and Gupta (2009) asserted that internet is an infrastructure that is referred to the organisational and management infrastructure that creates, manage and is used to share content.

On the other hand Ghosh and Avasia (2002:641) assert that, an extranet is a set of content shared by a well-defined group, but one that crosses enterprise boundaries. Internets and extranets provide gateways to organisations knowledge depositories. Besides acting as a platform for the distribution of information and publications, intranets provide the backbone platform for pushing technology to deliver information to user's desktops (Ghosh and Avasia, 2002:643). They further assert that HTML or other tools are used to design and set up such web sites. Knowledge can be accessed on the web site or over the internet using appropriate browser software on the computer and through a connection of an internet service provider. Examples of browser software include FireFox, Chrome and Internet.

2.10.2 Intranet

The intranet technology is a common feature in many organisations where employees access data, information and knowledge from within an organisation while those from outside are restricted (Laudon and Laudon 2007; Saharabudhe 2001). According to Skyrme (1998:3) the first knowledge management initiative for many organisations is to install or improve the already existing organisational intranet. The intranet is protected from visits by outsiders. As observed by Debowski (2006) intranets provide the technological platform for recording organisational knowledge. Averweg (2008) further argues that intranets are integral to an organisation as it enhances an organisation's knowledge sharing activities, supports the distribution, connectivity and publishing of information.

2.10.3 E-mails

An E-mail is a short term, which means an Electronic Mail. It is the same as a letter, only that it is exchanged in a different way. Computers use the TCP/IP protocol suit to send e-mail messages in the form of packets. The first thing we need to send and receive e-mails is an e-mail address. When we create an account with an Internet Service Provider, we are usually given an email address that we used to send and receive e-mails. Freeman (2009:1) defines e-mail as an

electronic mailing system, a method of exchanging digital messages across Internet or other computer networks. E-mail is transmitted directly from one user to another by use of a computer connected to the internet. This requires both computers to be online at the same time. An e-mail message consists of two components, the message header, and the message body, which is the e-mail's content.

Taylor (2005:15) notes that an email saves a lot of time in delivering information to users. They are short to the point and may be deleted after few days or kept longer depending on their importance or printed as hardcopy for filing. Emails can be used as they are fast, efficient, easy to update, reaches a wide and target audience. However, it depends on the technology and skills and not all users might be able to access information delivered via emails. Users can be sent information through Listservs (e-mail discussion groups), electronic alerts and dissemination/ interactive websites. Email system comprises of sending and receiving messages electronically over a computer network, as between personal computer devices. Increasing access to email via the Internet has rendered boarders irrelevant. Email can be a very effective tool for transferring tacit knowledge, but as Sahasrabudhe (2001: 274) indicates it may become too impersonal if there are no occasions for the individuals of the community to get to know each other.

2.10.4 Video-Conferencing and Teleconferencing

Video-conferencing may be one of the fastest-growing segments of the computer industry. It enables participants to share knowledge and have visual contact with each other. Point-to-point as well as multipoint conferences are possible irrespective of location and distance. Sahasrabudhe (2001: 274) highlights the need for sufficiently high-speed connections in order for knowledge sharing to be effective via video –conferencing. Sahasrabudhe (2001: 275) states the effectiveness of communication depends upon the bandwidth of the network.

Laudon and Laudon (2007) posit the internet telephony enables organisations to use internet technology for telephone voice transmission over the internet or private networks. Linked to telephony technology is the use of cellphones to share and retain information. Mobile phones enable people to communicate and access internet where conventional telephone or internet service is expensive or unavailable (Laudon and Laudon 2007). Through short message service (SMS) individuals receive and send data and alphanumeric messages that can be forwarded, stored and later retrieved. The technological advancements such as the third generation (3G) are

powerful enough to transmit voice, video, graphics and other rich media (Laudon and Laudon 2007). This shows that cellphones can be utilised to share and retain information that can be put into action.

2.10.5 Electronic document management

Knowledge is generally found in documents. The most valuable assets in the library are the documents. Knowledge has been known to contain knowledge in text form, such as in reports, books and working papers. Knowledge is embedded within documents in different media, such as text, graphics, audio and video. This includes production of text documents using word processors, keeping an electronic copy of the documents for search and access, and then printing and distributing as required. According to Sahasrabudhe (2001:271) document management systems support production, storage, search of, and retrieval of mixed-media documents and can be integrated together with other technologies, such as workflow. This enables workflow to be the defining factor in forwarding documents.

2.10.6 Performance support system

According to Desrosiers and Harmon they quote McGraw (1994:90) in defining performance support systems as that which supports the user of a complex system by providing embedded assistance. Performance support systems are software products aimed at providing users with information, guidance and learning experiences where ever and whenever the user needs it and helps in assisting individuals or groups in carrying out specific tasks and is intended for quick assistance without requiring special training on how to use the systems (Sahasrabudhe 2001: 271).

In this era of increase in availability and capabilities of computers at the workplaces, the electronic performance systems (EPSSs) are considered to be the appropriate means in addressing several performance problems and opportunities in workplaces. These systems involve a set of computer-based components (e.g., performance support, reference, instruction, and collaboration tools) that enable employees to perform job-related tasks effectively and efficiently (Gery 1991; 2002:464; McKay and Wager 2007:150).

According to Carr (1992:32) these systems deliver help to a performer when doing the job, at the right time and just in the right form that he or she needs it. Laffey (1995:31) and Raybould

(1995:8) points these systems also contain infrastructures that capture, store, and distribute knowledge throughout an organisation, which enables learning. EPSSs essentially include any combination of task structuring, knowledge, data, tools, and communication components to perform four supportive functions that include; learning, doing, referencing, and collaboration (Gery 2002:464). According to Nguyen (2010:325; 2012:147) the advantages of using an EPSS include improved performance, improved attitudes, reduced costs, memory support, updated information, and access to a wider range of support content.

2.10.7 Decision support systems

Oxford Dictionary of English (2008) defines Decision support systems (DSSs) as a set of related computer programs and the data that is required to assist with analysis and decision making within an organisation. According to Sahasrabudhe (2001:271) Decision Support Systems are computerized information systems which support business and organisational decision-making activities. DSSs help users analyse multiple data sets to find meaningful relationships and answer collection management questions in more timely and efficient ways. The interactive software-based systems are supposed to help in making decisions on compilation of useful information from raw data, documents, personal knowledge, and/or business models to identify and solve problems and make decisions. The system should be tailored to unique tasks environment and individual preferences of a particular manager. Such systems extend the decision-making capabilities of a manager by supplementing judgment and experience with computer technology. In academic library setting, it may enable a manager to retrieve profiles of user productivity, resource utilization, and resource availability Sahasrabudhe (2001:271). The need for the application of information technology (IT) in the management of libraries has been emphasised by Adeyemi (2002:22).

2.10.8 Data mining

Data mining refers to extraction or mining of knowledge from large amount of data (Han and Kamber 2002). Data mining provides knowledge by availing valuable information that can be used for various purposes in different areas of applications. Sahasrabudhe (2001: 273) refers to data mining as the use of sophisticated data search capabilities which utilises statistical formulae to discover patterns and correlation of large data sets. Prakash, *et.al*. (2004) defines data mining as an information extraction activity whose goal is to discover hidden facts contained in

databases. Using a combination of machine learning, statistical analysis, modeling techniques and database technology, data mining finds patterns and subtle relationships in data and infers rules that allow the prediction of future results.

Chen, *et al.,* (1996:866); and Pujari (2002) assert that Data mining techniques are employed to find hidden, unknown, and hard but potentially useful information or pattern from the data stored in large databases. Knowledge discovery in databases refers to the overall process of turning low-level data into high-level knowledge. An important step in the knowledge discovery in databases process is data mining. Groth (2000) points out that data mining is the process of finding trends and patterns in data. The objective of this process is to sort large quantities of data and discover new information. The benefit of data mining is to turn this new knowledge into actionable results, such as increasing a customer's likelihood to buy, or decreasing the number of fraudulent claims (Groth 2000).

According to Sahasrabudhe (2001:273) academic libraries can utilise data mining to obtain information about users, circulation history, resources in the collection, and search patterns. Libraries can further utilise this data as a way to improve customer service, manage acquisition budgets, or influence strategic decision-making about uses of information in the library and university. Data mining analyses data and summarises it into useful information. Association rules, decision trees, and cross tabulation are various techniques of data mining which aids in the discovery of unused information.

2.10.9 Data warehousing

According to Chen, *et al.,* (1996:868) a data warehouse is a system that stores and consolidates data periodically from the source systems into a dimensional or normalized data store. It usually keeps years of historical data and can be mined for pattern discovery for business intelligence or other analytical activities. A data warehouse is typically updated in batches, not every time when a transaction happens in the source system. Han and Kamber (2002) argue that a Data warehouse is maintained separately from an organisation's operational databases which allows for the integration of a variety of application systems.

According to Sahasrabudhe (2001:273) large amounts of data are spread across different databases in most organisations. The term data warehousing generally refers to the combination

of many different databases across an entire enterprise. Data warehouses merge data to enable easy extraction of information (Sahasrabudhe 2001:273). Data warehouse systems provide managers flexible access to even the smallest bits of data which may be important to meeting the goals of the organisation.

2.10.10 Social media tools

Levy (2009:120); Yates and Paquette (2011:8) point out that Social media have recently emerged as one of the recent technology that supports knowledge management (KM). Alexander (2006:44) defines social networking as websites or tools that encompass almost all collaborative environments employing Web 2.0 technologies. Chu and Kennedy (2011:989); Chu, *et al*., (2011:989); Glassman and Kang (2011:93) assert that the promise of Web 2.0 technologies foster collaboration among users, which generates new thinking and strategies to meet the demands of the changing society. On the other hand, Barsky and Purdon (2006:65) emphasised that social networking websites collect data about members, store and share user profiles. The web 2.0 and various social networking tools are increasingly used by individuals of all ages such as young people and college students who display a high usage. These websites are free and allow users to easily create personal pages filled with content in the form of images, music and videos. Such websites function as a social network because members are able to share web pages with friends and search for new friends who have similar interests. Barsky and Purdon (2006:67).

Casey and Savastinuk (2006:40) argue that the emergence of Web 2.0 and social media tools has changed the relationship between the library and their users. These tools are used by the libraries for personalised outreach services. The application of these technologies also helps the libraries to offer their resources and services to their users in a proactive manner. The use of these tools enables users to participate in activities that are the sole purpose of the library, such as cataloging via folksonomy, or providing comments on books via blogging. According to Kaplan and Haenlein (2010:61) social media applications are powerful technological tools for communication loosely summed up as technologies used for interacting, creating and sharing information that are built on the ideological and technological foundations of Web 2.0. Buroughs (2010) asserts that social networking websites allow users to share interests and communicate with others.

According to Churchill (2007:29) these tools includes, blogs, wikis, Facebook, RSS (Really Simple Syndication), podcasting, Twitter, Blogs, social bookmarking and Google Utilities among others. A social media tool provides the channel and means for people to share their knowledge, insight and experience on their terms. It also provides a way for the individual to see and evaluate knowledge based on the judgment of others. In particular, social networking websites allow users to share interests and communicate with others (Buroughs 2010). According to Dickson and Holly (2010:3) many academic information specialists advocate using these new social Web platforms to reach out to student population.

2.11 Summary of chapter two

The literature review was conceptualised based on the title of the study and was guided by research objectives. The literature reviewed shed light on the following: The concept of knowledge, categories of knowledge, knowledge management, perspectives of knowledge management, knowledge management processes in academic libraries, knowledge management in academic libraries, studies related to knowledge management processes and knowledge management practices in academic libraries and ICT instruments for knowledge management processes. The next chapter examines and justifies the research methodology utilised in the study.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

Research methodology is a systematic way to solve a research problem scientifically and "encompasses research methods as well as the logic behind the chosen methods of the study" (Kothari 2004:8). Major methods used in studies are qualitative method, quantitative method and mixed research method. This study employed qualitative method to answer questions about "existing relationships among measured variables with the purpose of explaining, predicting, and controlling phenomenon" (Leedy and Ormrod 2010:99). Qualitative research is mainly concerned with systematically asking a large number of individuals the same questions and recording their responses" (Neuman 2006:43). The strength of qualitative research lies in the fact that it stresses the significance of studying the variables in their own setting and the state in which they are located. Detailed information is collected through instruments that use open-ended questions and the researcher or interviewer is part and parcel of the study, in what is commonly referred to as participant observation. Qualitative research puts a lot of emphasis on process and practice instead of outcomes.

3.2 Research design

The study utilised a case study design of St. Paul University library in Limuru, Kenya. The case study was characterised by placing emphasis on a single study object; although a possibility of investigating multiple units exist. The case study was convenient for the study, as it provided meaningful face value credibility for the study findings. As defined by Yin (2003: 13) a case study is "an empirical enquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident." The suitability of the case for the study was because it covered contextual conditions that were significant to the research phenomenon, knowledge management.

The contextual conditions, in this case mainly comprised of organisational environment which was examined in relation to development of knowledge management processes which is appropriate for the environment. Therefore, the strategy of a case enhances a practical and appropriate output during the implementation of knowledge management. A case study is a research design that provides a detailed story of the study case (Hancock 2002:11; Johnson and

Christensen 2004:211; Myers 2007:35). There has been an increase in the usage of the case study approach, which has been attributed to the fact that it allows for in-depth investigation of a problem. A case study research was suitable for this research since it enhanced practical and appropriate output strategy during the implementation of knowledge management. Moreover, it covered contextual conditions were significant to the research phenomenon. In this case, contextual conditions are environmental conditions in the university's library in relation to its implementation of knowledge management processes. Convenient and meaningful technique that provides face value credibility and is seen to provide evidence or illustrations that some readers can readily identify. Therefore, the case in question was the St. Paul's University library.

3.3 Population

Population is defined by Mugenda and Mugenda (2012) as a group or set of elements. On the other hand, Bless and Higson-Smith (1995: 85) defined population "as the entire set of objects and events, or groups of people, which is the object of research and about which the researcher wants to determine some characteristic".The population of this study consisted of 50 participants (10 library management committee members, 20 faculty staff and 20 library staff).

3.4 Sample frame and sample size

Sampling frame as defined by Barbie (2007:198) is the list of elements from which the probability sample is selected. The sample frame is the list of elements composing the study population. He emphasized that for the sample to be representative, the sample frame must include all members of the population. This is a case study and due to the small sample size, the study was a census of all the population consisting of all librarians, faculty staff and library committee members at the St. Paul's University. The researcher obtained a list of library committee members from the university's human resource office. The list comprised of 10 library management committee staffs and all the 20 lecturers at St Paul's University in Limuru. Another sample frame with a list of 20 librarians was obtained from the University Librarian's office. Sampling is the collection of a small number of units or elements taken from a larger population or collection. There are two widely used sampling procedures or techniques in research, namely probability and non-probability Sampling.

According to Denscombe (2007:14) probability sampling includes the following types of sampling: simple random sampling; interval or systematic sampling; stratified sampling, as well

as cluster or multi-stage sampling. Non-probability sampling on the other hand includes the following types of sampling: accidental or availability sampling, purposive or judgment sampling and quota sampling (Denscombe 2007: 14).

According to Neuman (2003:213) purposive sampling is used when a researcher wants to identify specific type of participants who are able to provide a deeper understanding and insights into the issue being investigated. The researcher purposively sampled the whole population because of the small size of the case study. In addition; the size of the sample was manageable (Newman 2006: 219).The sample population is presented in table 3.1.

Library management Committee members	10
Library staff	20
Faculty staff (Lecturers)	20
Total Sample Size	50

Table 3.1: Population of library management committee staffs, lecturers and librarians

3.5 Data collection methods

According to Kombo and Tromp (2006:213) the following factors guide the choice of a research instrument: the clarity of objectives of the study, the characteristics of the population sample for example the literacy level, geographical distribution and nature of the questions to be asked. In view of these factors interviews were used for data collection. The research instruments used in the study included interviews and interview guides.

3.5.1 Interview method

The researcher used interviews as the tool for data collection. According to Collis and Hussey (2009) interviews are means for data collection which interviewees are chosen and asked a number of questions to determine what they do and how they think or feel. Additionally, Pickard (2007:172) posit that interviews can be used for reconstruction of events, descriptions and feelings about current events and predictions for future developments. Interviews are an important part of any research project as they provide the opportunity for the researcher to investigate further, to solve problems and to gather data which was not obtained in other ways

(Cunningham 1993:314). Interviews allow researchers to collect data that cannot be directly observed and also allow probing and verification thus increasing the accuracy of responses.

Face-to-face interviews entail structured conversations, between the interviewer and the interviewee, based on a pre-determined set of questions (Babbie and Mouton 2003: 249). This method was used for data collection. In addition, where structured interviews are open-ended, they offer the ability to "gather, spoken ideas, information, and opinions from participants" and is best suited for small samples of participants (Monroe 2007:4). Thus, this study used structured open-ended interviews to ensure consistency in the data collected. The interview method provides the best way to clarify ambiguities in questions and responses as any misunderstandings are corrected immediately.

Data was collected from the library management committee, library staffs and lectures using semi structured interview guides and subsequent actual interviews. Interviews were conducted for all categories of participants that included; library management committee members, faculty staff and library staff. Each participant was interviewed separately through fact-to-face method based on their pre-determined availability. The interview questions were broken down into themes based on the objectives of the study. Interviewing the participants was a good method to obtain reliable and valid measures in the form of verbal responses from more than one participant. In addition, the interview method was used to allow the researcher to gather information from various participants based on their knowledge, ability and experience in regards to knowledge management processes at St. Paul's University library. The researcher made appointments before the interviews to enable the interviewees to prepare adequately for the interviews. The minimum duration of the interview sessions was about 20-30 minutes. The deliberations of the interview sessions were recorded by means of taking notes. The role of the researcher as St. Paul's library was to ensure the participants understood the questions and provide clarity where necessary. Collings and Hussey (2009) posit that the researcher should bear in mind that recent events may affect the interviewee's responses, for example, he/she may have recently received news of a salary increase, a cut in hours, or misfortune for a member of the family. In addition, interviewees might not be familiar with the subject, or they might give an unreliable or inaccurate response.

3.5.1.1 Advantages of the interview method

There are various advantages in interviewing participants as explained below:

- The Interviews enables the interviewer to compare views and permits flexibility to include important information that may arise from the interviews (Dawson 2002:17).
- Additionally, the interview method can be used if the researcher is "interested in understand the perceptions of participants or learning how participants come to attach certain meanings to phenomena or events, interviewing provides a useful means of access" (Taylor and Bogdan 1998:98). Therefore, using and interview is fundamental in providing an in-depth understanding of the subjects being studied.
- Furthermore, interviews can be used by the researcher to obtain information that may not be obtained from other methods such as observation and questionnaires, because face to face interaction between the interviewer and the interviewee allows for probing questions that may lead to a whole new area of information (Creswell 2009:179).

3.5.1.2 Disadvantages of the interview method

However, it is important to know that interview method has some disadvantages as mentioned below:

- There is difficulty in coding of the responses whereby indirect information may be provided by the interviewees (Creswell 2009:179; Tayie 2005:99).
- Articulation among the participants involved may be a problem leading to misunderstanding of the information revealed (Creswell 2009:179).
- It is time consuming and often involves issues of confidentiality (Tayie 2005:99).
- The place of the interview may be designated rather than having a natural setting thus may not reflect the actual phenomenon under the study (Creswell 2009:179).

3.5.2 Interview guides

An interview guide was created where questions relating to the study objectives were raised. The advantages of using an interview guide as suggested by Nguyen, Smyth and Gable (2004:21) include, study reliability while the freedom to pursue unexpected themes capitalises on the strengths of the case study. Furthermore, Yin (2009:9) posits that in constructing an interview guide in a case study approach, there is need to ensure that in-depth data will be collected from

the interviewees free from bias. The questions used in the interview guide were open-ended which allowed collection of detailed information relevant to the study. It also enabled the researcher to have flexibility in data collection where one question led to formulation of the next question.

3.6 Trustworthiness

Trustworthiness is the appropriate term and instrument used in qualitative research to communicate the measure of the quality of research in qualitative research. It is the extent to which data collected, data analysis and outcome of the analysis are believable and trustworthy. Guba and Lincoln (1981:91); Krefting (1991:214) and Creswell (1998:51) suggest that the trustworthiness of qualitative research can be established by using four strategies: credibility, transferability, dependability and conformability. These strategies are constructed parallel to the analogous quantitative criteria of internal and external validity, reliability and neutrality. Each strategy in turn uses criteria like reflexivity, triangulation and dense descriptions.

Furthermore, Opie (2004: 21) highlights several strategies that can enhance the credibility of case study research. Firstly, data gathering procedures are explained, data is presented in a transparent manner and in ways that enable easy re-analysis. Secondly, negative aspects are reported, biases acknowledged and fieldwork analyses explained. Thirdly, the relationship between claims and supporting evidence are expressed clearly, primary data (the researcher's own data) are distinguished from secondary data (other people's data). Finally, an interpretation is distinguished from a description whereby a diary or a log book is used to track the events that took place during the study, while procedures are in place to check the quality of the data. Furthermore, Opie (2004: 21) asserts that trustworthiness of the research outcomes should result in readers of the research "believing what the researcher has reported," adding, "this implies that readers should have sufficient confidence in the researcher's conduct of the investigation and in the results of the research in order to consider the outcome as reliable.

Dependability, credibility, transferability and confirmability are important in ensuring that the rigour of qualitative findings prevail (Guba 1981; Schwandt, Lincoln and Guba 2007) as cited in (Anney 2014). The researcher takes cognisance of these arguments and has been duly guided by trustworthiness tenets in this qualitative research. This research was therefore designed for and executed to deliver this trustworthiness standard.

3.6.1 Credibility

Credibility is defined as the confidence that can be placed in the truth of any research findings (Holloway and Wheeler 2002:255; Macnee and McCabe 2008:272). Credibility is analogous to internal validity in quantitative research, that is, how research findings match reality. However, according to the philosophy underlying qualitative research, reality is relative to the meaning that people construct within their social contexts. It is concerned with the debate between several possible accounts of an aspect of social reality and the one presented by the researcher. In order to have credibility a study must present an account of social reality that is acceptable by others and to do so it must (i) be conducted according to good methodological practices and (ii) be assessed by those who were studied. This is also called respondent validation (Bryman and Bell 2007:411).

In order to comply with the credibility criteria, this study was validated by 6 interviewees prior to submission of the final copy of this research. It is important to note that this step was not intended to serve other personal or organisational interests but was meant to ensure that the researcher accounted for what the participants meant during the interviews.

3.6.2 Transferability

According to Trochim (2008:13) transferability refers to the degree to which results of a qualitative research can be generalised or transferred to other contexts or settings. The qualitative researcher can enhance transferability by doing a thorough job of describing the research context and the assumptions that were central to the research.

Maxwell (2002:64) asserts that research findings are transferable or generalisable only if they fit into the new contexts outside the actual study context. He further points out that transferability is analogous to external validity, that is, the extent to which findings can be generalized. According to Maxwell (2002:64) generalisability refers to the extent to which one can extend the account of a particular situation or population to other persons, times or setting than those directly studied. It accounts for the possibility of transferring the findings of a study to another context or the same context in another time. This is particularly considered to be an empirical issue in qualitative research due to its contextual uniqueness. Although Guba and Lincoln (1994:117 in Bryman and Bell 2007:413) consider transferring findings in qualitative studies very hard, they

suggest that researchers should provide the readers with maximum detail of the context in order to describe all relevant aspects of this setting in case of future generalisation.

3.6.3 Dependability

According to Bitsch (2005:86) dependability refers to the stability of findings over time. Dependability involves participants evaluating the findings, interpretation and recommendations of the study to make sure that they are all supported by the data received from the informants of the study (Cohen, *et al.,* 2011:146; Tobin and Begley 2004:392). It means to ensure that a rationale of all steps of the research process is kept for future consultation if necessary. This includes but is not limited to problem formulation, selection of context and participants, interview guide and transcripts, data analysis approach, etc. At the end of the research this information should become available for a peer who would act as an auditor to confirm that proper procedures have been followed. Although proposing this method of ensuring trustworthiness, Guba and Lincoln (1994:117 in Bryman and Bell 2007:414) admit that it is extremely time-consuming for the auditors and thus this approach has not been widely adopted.

In undertaking this research, the researcher with the able guidance of the promoter of this piece of research work, worked towards achieving these dependability good practices. Sufficient procedures were therefore adopted towards this cause.

3.6.4 Confirmability of the findings

Confirmability is concerned with ensuring that data and interpretations of the findings are not figments of the inquirer's imagination, but is clearly derived from data collected (Tobin and Begley 2004:392). Guba and Lincoln (1994:117) as cited in Bryman and Bell (2007:414) argue that complete objectivity is virtually impossible in business studies. They propose that it is necessary for the researcher to act in good faith in order to avoid personal interests or preferences that influence the study results. According to Bowen (2009:307) an "audit trail offers visible evidence from process and product that the researcher did not simply find what he or she set out to find". While undertaking this research, the researcher avoided personal interest preferences when collecting data, analysing collected data and finally interpreting the findings from the study. It was important that the storyline of this study was communicated as it is and thereby avoided biased inclinations.

3.7 Ethical considerations

Ethical considerations cover such aspects as voluntary participation, protection from all forms of harm, confidentiality, anonymity, informed consent, privacy and the conduct of the researcher when executing the research exercise (UNISA 2007:3; Babbie 2010:67; Neuman 2006:44). In this study, the following ethical issues were considered namely; confidentiality, informed consent, provision of debriefing and counselling.

Confidentiality refers to the researcher ensuring that no one outside the research team is able to identify participants in the study and that responses of individuals was not directly repeated to others (Babbie 2010:89). In order to maintain confidentiality in this research, the names and contact details of the participants remained anonymous and confidential.

Participation in this study was voluntary and participants were assured that the information they provided would be treated confidentially and only used for the purpose of the study at hand. Furthermore, participants were assured of anonymity in this study and that no specific information from the research would be traceable to any of those that participated.

It was the duty and responsibility of the researcher to furnish the potential participant with necessary information on the nature and purpose of the research that was to be undertaken as advanced by (Stangor 2011:213; Babbie 2010:91). In this case, the researcher obtained informed consent from all the subjects involved in the research before they were given a chance to participate. The researcher also sought permission from the institution where the research was conducted.

Finally, participants were thoroughly debriefed at the end of the study as prescribed by (Stangor 2011:214). The researcher also gave participants a general idea of what the research was investigating, why it was being investigated, and their role in the research was also well explained.

3.8 Data analysis and presentation

Data analysis relates to what is done with data or raw information collected from the research process in order to make sense of such data. Plain data may not be able to serve any worthwhile purpose unless it is carefully, edited, systematically classified and tabulated, scientifically analysed, intelligently interpreted and rationally. The ccommon steps suggested by researchers in

the process of data analysis in qualitative research include the identification of themes, verifying selected themes through reflection on data gathered, discussion with other researchers or experts in related area of study, categorising themes and recording of support data for the categories (Brockopp and Hastings-Tolsma 1995:255).

Data analysis in this study started as soon as the researcher received responses from the interviewees on knowledge management processes. According to Streubert and Carpenter (1999:28) data analysis in qualitative research begins when data collection begins; in addition to the analysis that occurs throughout this period, a protracted period of immersion occurs at the conclusion of the data collection. The authors add that analysis of data in qualitative research is a hands-on process which requires the researcher to commit fully to understanding what the data say. The qualitative data was analysed according to themes using content analysis.

In this study, content analysis was used to analyse interview responses in an attempt to find emerging key themes (Brewerton and Millward 2001; Bryman 2001; Hussey and Hussey 1997). Struwing and Stead (2001:14) further explain that content refers to the message, such as words, meanings, symbols and themes, while text refers to that which is written, spoken or visualised. In this study, individual interview responses was recorded and transcribed. The interview responses undertaken were recorded in written form and kept for further analysis. In these processes useful information was closely linked to their experiences and merged. The individual responses were analysed and interpreted to draw conclusions on knowledge management processes at St. Paul's University library. Miles and Huberman (1994:10) suggested a three-step strategy for data analysis including, data reduction which refers to 'the process of selecting, focusing, simplifying, abstracting and transforming the data that appear in written-up field notes or transcription'. The second strategy is data display which refers to 'organised, compressed assembly of information that permits conclusion drawing and action' (Miles and Huberman 1994:11). The third strategy is conclusions drawing and verification, used to validate the meanings emerging from the data that has to be tested (Miles and Huberman 1994). Although there are software tools that can be used to analyse qualitative data, in this study the collected qualitative data was manually analysed.

3.9 Challenges and limitations of the study

There were several problems that were encountered during the course of this study. These problems occurred mainly during data collection process. According to Ngulube (2005) response

rate is usually a concern for most surveys and this study was not an exception. Additionally, the researcher had to wait for authorization from the University in order to conduct the study at St. Paul's University, an authorization that delayed the commencement of data collection.

Engagement with some of the participants of this study, especially library committee members and faculty staff was difficult since most of them were not available at their scheduled interview times due to official assignments. At the time of data collection, most of the participants of this study were either away on leave while others were engaged on official matters, a scenario that compounded the problem more.

3.10 Summary

Chapter three broadly discussed the study's research approach, research design, the targeted population, data collection tools and procedures, data analysis, trustworthiness and ethical considerations of this study. The way data was analysed and presented was also discussed. Limitations faced during the course of the study were also given. This will be of assistance in future when undertaking similar studies. The next chapter (four) focuses on the presentation, analysis and interpretation of results obtained through interviews.

CHAPTER FOUR: DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1 Introduction

This chapter presents and analyses data as collected from the research study. The study was based on the need to establish knowledge management processes utilised at St. Paul's University library in Kenya. It especially focuses on establishing the levels of knowledge management, how knowledge management processes are created, acquired, organised, transferred, retained and shared in the library. It also looks at ICTs used for knowledge management processes. The questions posed for data collection were in line with the study objectives and were guided by interview schedules. The chapter commences with a brief overview of the aims and objectives of the study and then proceeds to present a biographical description of the study's participants so as to lay a foundation for the presentation of themes and qualitative data analysis. Out of 50 potential interviewees, only 32 were available for the interviews.

Data was analysed using content analysis whereby collected data from the participants was classified, summarised into themes and discussed according to the objectives of the study as indicted below:

1. To find out the understanding of knowledge management awareness at St. Paul's University library
2. To establish how knowledge is created at St Paul's University library.
3. To establish how knowledge is acquired in the library at St. Paul's University
4. To established how knowledge is organised at St. Paul's University library.
5. To determine how knowledge is shared at St. Paul's University library
6. To establish how knowledge is retained at St. Paul's University's library.
7. To find out the different ICT instruments used for knowledge management at St Paul's University library.

8. To investigate knowledge management challenges and how knowledge management can be enhanced at St Paul's University library.

4.2 Description of the participants

The research study resulted in the collection of qualitative data. The targeted population was 50 participants which comprised of the Library Committee Members, Faculty and Library Staff. During data collection, the researcher was able to successfully interview only 32 participants who included: four Library Committee Members, 15 Faculty Staff and 13 Library Staff. The other 18 expected participants were unavailable during the scheduled interview dates and could not reschedule due to official commitments. Despite several reminders that were sent to the participants, their availability seemed impossible. The primary reason of including the Library Committee Members and Faculty staff was to corroborate information gathered from librarians who were the primary informants. The participants' response rate is as summarised in Table 4.1 below.

Table 4.1 Response rate of participants

Participants	**Targeted number**	**Successful participants**
Library Committee Members	10	4
Library Staff	20	13
Faculty Staff	20	15
Total No.	50	32

4.3 Biographical description of the participants

This section provides a biographic presentation of participants. Biographic data collected included participants' gender, highest academic qualifications and how long they had worked at St. Paul's University.

4.3.1 Gender of participants

The researcher included both genders because if one gender group had participated in this study, the findings would have been biased.

Table 4.2: Gender of participants

Gender	Frequency
Male	18
Female	14
Total	**32**

Though the number of male participants was slightly higher than the female participants, the results suggested a balanced gender representation among the participants. Table 4.2 above reveals that 14 of the participants were female while 18 were male.

4.3.2 Highest academic qualification

The academic qualification of participants is presented in table 4.3 below.

Table 4.3: Highest academic qualification

Qualification	Frequency
PhDs	3
Masters	16
Bachelors	7
Diploma	5
Certificate	1
Total	**32**

Table 4.3 above indicates that the participants' highest level of academic qualifications ranged from certificate level to PhD level. Majority of the participants however had obtained a Master's

degree with the second highest being those with Bachelor's degree. These results therefore indicate that most of the participants had a significantly high level of education qualification that presumably place them in a better position with regard to the understanding of knowledge management processes (KMP) and hence provide fairly reliable data on knowledge management issues.

The level of education and work experience of participants at St. Paul's University was investigated because past research work had found out that level of education and experience of participants was related to organisational knowledge acquisition and retention (De Giovanni 2009 and Sveiby 1997).

In addition, majority of participants had Bachelors and Masters' Degrees, compared with PhD degrees and the least being a Certificate (see table 4.3). It is envisaged that higher positions occupied in most organisations require higher qualifications with considerable work experience, knowledge, and skills to function better in such high position level tasks.

4.3.3 Number of years worked at St. Paul's University

The work experience of the participants is presented in table 4.4 below.

Table 4.4: Number of years worked at St. Paul's University

Number of years worked	**Participants**
0-4years	11
5-9 years	9
10-14 years	6
15-19 years	5
0ver 20 years	1
Total	**32**

Table 4.4 above illustrates that 11 of the research participants had worked at St. Paul's University for less than four years while nine had worked for between five and nine years. There

were six participants who were found to have worked for between 10 to 14 years. Only five of the participants had worked for between 15 and19 years while only one of the participants had worked for more than 20 years at St. Paul's University.

While this data reflect a wide range of work experience of the study participants at St. Paul's University, majority of these participants had significantly high level of experiences. The high experiences of participants at St. Paul's University library were more likely to be knowledgeable on knowledge management processes and therefore put them be in a position to provide more reliable data in their areas of expertise. This is especially so because Lee (2000) reiterates that knowledge and experience of library staff are considered to be the intellectual assets of any library and should therefore be shared between employees of the library. Sharing knowledge with each other assists professionals in creating new knowledge and ideas.

4.4 Understanding the concept of knowledge management awareness at St Paul's University

The first objective of this study was to establish the understanding of knowledge management awareness at St. Paul's University library. The participants had different understanding of the concept of knowledge management. The common identified views of knowledge management are presented below:

"Knowledge management is the process of sharing, capturing and transferring information to library users". "Knowledge is an information system that enables the creation, storage and retrieval of information in the library". "Knowledge management is process of utilising knowledge in the library". "I have heard of Knowledge management and to some extent have read about it".

The above responses from participants indicate that they conceptualised knowledge management from different viewpoints which may be categorised as process, capturing and information system viewpoint. This may be interpreted as meaning that there was a level of understanding among participants on what knowledge management meant to them.

The participants' viewpoints on knowledge management make some sense of what knowledge management is, when compared to the definitions the researcher had adopted from some authors, such as Becker (2007:42) who defined knowledge management "as the way data, information

and knowledge are captured, stored and shared and how they are applied to help the organisation strengthen its competitive advantage". Furthermore, knowledge management has been defined by Wen (2009:363) as "the creation, acquisition and utilisation of knowledge for the promotion of organisational performance". Knowledge management is therefore the creation of relevant knowledge and the use of knowledge in a positive way, to achieve organisational goals. The explanations by some of the participants to a large extent gave the same meaning as to what had been defined by various knowledge management authorities/scholars.

The explanations of some of the research participants showed that their understanding of knowledge management did not match the definitions provided by the above authors. This is therefore an indication that there were participants that had limited knowledge on the concept of knowledge management.

Furthermore, some participants lacked understanding on knowledge management and thereby readily expressed genuine interest to be helped out through knowledge management training. Some of their responses were as given below:

"We don't know what knowledge management is about, it is a new concept, we have not heard about it". "We need training and more education to understand what knowledge management is all about".

In this study, participants were drawn from a hybrid of professionals at the university that included library management committee members, library staff and faculty staff members. With such composition notwithstanding, it is apparent that the understanding of the knowledge management has gaps that may need to be addressed. It is therefore clear that the understanding of the concept of knowledge management and its awareness varied in this study.

This finding therefore appears to be similar the results of a study by Roknuzzaman and Umemoto (2009) who, while investigating the views of library practitioners regarding knowledge management, found that knowledge management was misinterpreted as information management or content management. This makes the library authorities or decision-makers often not to show any interest in knowledge management.

4.5 How knowledge is created at St Paul's University library

The second objective of this study was to identify how knowledge was created at St. Paul's University library. In this regard, two questions were asked and analysed, that is, how knowledge was created and whether the library creates knowledge independently without external input. In question two of the interview guide, participants were asked about how new knowledge was created at St. Paul's University library. From interviews carried out in this study, participants presented their thoughts as follows:

"We acquire knowledge through reading literature, through formal and informal meetings". "We extract structure and organise knowledge from colleagues who are experts in different fields". "We attend in-house training and workshops to improve and acquire new knowledge and capabilities". Majority of the participants said that, *"There is no policy on creation of knowledge in our department and this creates a problem because anyone can just randomly do as they like with regard to knowledge creation". "Individuals create knowledge for individual gain and empowerment, because they know that once they are regarded knowledgeable they are in a good position for promotion"*.

The findings from question three on the interview guide asked whether the library creates knowledge independently without external input from other parties such as faculty. Participant remarks were as follows:

Majority of the participants mentioned that *"We don't create knowledge independently without external input from the third parties such as faculty". Upon further probing, some participants indicated; "The library does create knowledge independently to some level and also collaborates with faculty to create knowledge". "The academic staffs are the ones involved in knowledge creation, through teaching and through research work"*. Other participants however had the following to say: *"The library does not create knowledge independently so they should come up with a system that can uplift knowledge creation as there is no formal system promoting knowledge creation at the moment"*.

Based on participants' responses, there was a general consensus that knowledge management within the context of study got created through research work, acquisitions, seminars, and networking with other institutions. The study's view on how knowledge was created appeared to

be in synch with Sagsan (2007: 2009) view who asserts that knowledge creation revolves around the acquisition, resource dedication, fusion, adaptation, and building of knowledge networks among colleagues. Sagsan (2007) further states that the purpose of a university library is for knowledge creation through several media such as social communication networks, both formal and informal; teamwork; community of practices; organisational learning; and formal communications technology. This can be achieved through individual, group or departmental institutions. Therefore, librarians should apply their analytical abilities, experiential experiences, insights, and supportive interactions in harnessing knowledge that is required to meet users' needs.

Additionally, there were those participants that attributed knowledge creation to be done through scholarly research work, this being a requirement for higher education advancement and the regular publishing requirements for scholars. Other participants claimed to have contributed their work to institutional repository and thereby implying non-contribution of similar works by other subjects of this study.

An interesting phenomenon that emerged from this study was the library staff understanding on what they considered knowledge creation to be. From responses received from participants drawn from the university library, this group of participants did not consider some of their activities as that of creating knowledge. Instead, they saw their role as that of buying and acquiring new resources. The researcher however noted that these participants had overlooked some of their daily tasks that indeed qualify to be considered as knowledge creation activities. Such responses therefore failed to fully match what existing literature prescribes as knowledge creation. As an example, one of the participant revealed that they create knowledge from statistics they record about the needs of various user groups. This participant however was initially not aware that this was part of a knowledge creation activity.

The findings from the research done at St. Paul's University library indicate few methods such as research work and output, acquisitions, seminars and networking with other institutions were used for knowledge creation in the library. This does not support Sagsan (2007) who mentioned that the major purpose of a university library is for knowledge creation through several mediums such as, social communication networks, both formal and informal; teamwork; community of

practices; organisational learning; and formal communications technology which can be achieved through individual, group, or departmental institutions.

The findings of this study also indicated that there were insufficient formal mechanisms for creating knowledge of employees at St. Paul's University such as knowledge mapping, mentoring, storytelling forums, use of focus groups and benchmarking and which were not the norms. The library also lacks written policies that would help set standards that could be used as tools to motivate staff to create, share and retain the knowledge they know in the library.

4.6 How knowledge is acquired at St Paul's University library

The third objective of this study was to identify how knowledge was acquired at St. Paul's University library. The purpose of question 4, 5 and 6 in the interview guide (appendix B) attempted to establish how knowledge was acquired, involvement of knowledge acquisition at work place, and written policies on knowledge acquisition in the library. The results were as presented below.

The findings of question four in the interview guide from most participants indicated that knowledge was acquired through trainings, workshops, seminars, through purchases of resources and networking with other libraries and institutions. Below are pertinent remarks that emanated from the interviews. Majority of participants had the following to say:

"There were no mentorship programmes in place". This was further supported by participants who said that, "mentoring was largely viewed as a way of continuous improvement and knowledge generation activity but without formal arrangement to see its implementation". "Mentoring is there in name but experienced employees choose whether to implement It or not".

Other participants' responses included the following: *"Most knowledge is acquired through seminars and networking with other libraries and institutions". "Succession plan in departments did not exist". Other participants' responses were as follows "The organisation sponsors its employees for further education to acquire basic degrees or advanced degrees at local and regional universities". "In most cases, employees attend in-house training and workshops to improve and acquire new knowledge and capabilities". "It is easy to acquire knowledge especially since most of the staff members are still progressing in their studies hence knowledge on their various fields is on their fingertips". "The staff don't want to share information with*

others fearing that once they share they will be out-shined by their peers". "It depends on the kind of knowledge one is looking for, for instance, is it a specialty or just information". "It is easy to acquire knowledge from individual employees but depends on ease of relating with them". "It is fairly difficult as there are no mechanisms in place to tap the knowledge". "The library subscribes to listservs and online CoPs".

It emerged from the findings that trainings, workshops, seminars, buying knowledge products or resource and networking were the main ways for staff to acquire knowledge in the library. It also emerged that knowledge can be acquired from peer interviews among participants (employees) but this is dependent upon various factors such as issues of peer trust, relationships among participants/employees, leadership and mechanism in place that facilitate the tapping of knowledge.

The above interview responses were largely found to be in line with existing literature. As examples, most of the above responses agree with Maponya (2004) suggestion that knowledge in academic libraries can be acquired through; establishing links or networking with other libraries and with institutions of all kind, attending training programmes, conferences, seminars and workshops, and buying knowledge products or resources in the form of manuals, blueprints, and research reports. Knowledge acquisition is one of the major activities in the library. The above participants' responses were also found to be in agreement with Reio and Wiswell (2000) assertion that employees may obtain knowledge through a variety of learning activities within an organisation, such as training, formal education, experimentation, imitation and self-directed learning. Of course Reio and Wiswell (2000) further elaborate that individuals may rely on different learning channels to obtain explicit and tacit knowledge. Though organisations usually use a variety of mechanisms such as, formal documents, training programmes, group meetings to promote workplace learning, employees may not accumulate their knowledge merely through inside sources. Jantz (2001) further suggests that knowledge acquisition could be enhanced by providing training or training opportunities for staff.

In summary therefore, the major ways in which knowledge was acquired at St. Paul's University library as per the interview responses were; the reliance on on-the-job-training, workshops, seminars and buying knowledge products or resources. Additionally, feedback from librarians interviewed (appendix B) revealed that librarians attended conferences, retreats and workshops

organised by the University library and other academic institutions. However, in-house trainings and conferences were not frequently organised by St. Paul's University. Such opportunities when organised were used by training and conference participants to also generate and share ideas.

From the interview responses, it emerged that St. Paul's University library, in an effort to pass on skills amongst staff, the library practice on job rotation was limited. This was considered important to ensure that there was basic talent cover for the critical library functions in the various library departments.

Question five on the interview guide sort to find out whether the participants were involved in knowledge acquisition in their course of duty.

It was important to bear in mind that a vast amount of knowledge is in the heads of experts (Davenport and Prusak 1998; Rao 2004).This knowledge could remain unused if not tapped. When thirty two participants were asked if they were involved in knowledge acquisition, the remarks of the majority were as follows:

"We are not involved in knowledge acquisition in the library". We don't capture expertise of the retired staff and those who have resigned". "We acquire knowledge by attending classroom sessions". Some participants indicated that "they acquire knowledge through research work and attending seminars". "We acquire knowledge through purchase of library resources in the library". A participant mentioned that, "I am involved in knowledge acquisition in the library".

A phenomenon that was picked out from participants responses was the lack of a process to capture and acquire knowledge of internal staff. As mentioned in literature, the most complicated aspect of knowledge management process was identified as the capturing of information or knowledge that resides in people's heads (Koenig and Srikantaiah 2000). The use of knowledge "expert systems" as mentioned by (Koenig and Srikantaiah 2000) was suggested as a way that knowledge acquisition could be done by an organisation to achieve the gradual tapping of knowledge existing in the heads of experts while it was still useful. Knowledge acquisition can also be improved by providing training programmes for staff. These training programmes then increase the expert level for the staff by increasing their knowledge (Wen 2005). This could be taken a notch higher by having more skilled and knowledgeable workers in an organisation providing regular and planned peer trainings. If appropriately conducted, the less knowledgeable

workers would be induced to document important knowledge through the taking of the old traditional hand written notes and request for electronic presentations that may have been used.

Additionally, from participants' responses gathered, participants were largely unaware of any process of capturing and sharing knowledge by those that were exiting employment. They indeed mentioned that the know-how and expertise of the retired and resigned staff had not been captured elsewhere. It is however worth noting that the sampled participants did not include employees that worked in St. Paul's University human resource unit. If this would be a true position, then the concerns of Probst, *et al.,* (2000:226) may manifest. Probst, *et al.,* (2000:226) pointed out that "organisations often suffer permanent loss of valuable knowledge through dismissals, redundancies, retirement and death". Therefore, the finding of the study indicates that it is important for the library to gear towards developing ways to capture expertise and know-how of its staff.

Questions six in the interview guide sort to find out if there were written policies in the library on knowledge acquisition. Their responses were as follows; Majority of the participants said, "There are written policies on knowledge acquisition in the library". Some said, "There are no written policies on knowledge acquisition". Others said, "We are not sure of their existence".

Participants' responses indicated that majority of participants believed that written policies on knowledge acquisition at St. Paul's University library were in place. On the other hand, a small number of participants did not think that such policies were in place. Some participants however were not sure of their existence. This therefore revealed that there were written policies on knowledge acquisitions at St. Paul's University library as mentioned by the majority of participants.

According to Ngulube (2003:286) written policies serve as binding contracts between individuals, the organisation and the stakeholders. Such written policies help to set standards and can also be used as tools for staff motivation to create, share and retain knowledge. In addition, such policies are aimed at creating an inventory of organisation intellectual assets and avoiding their loss can be part of best practices in organisations such as academic libraries. These assets include both tacit and explicit knowledge (Nonaka and Takeuchi 1995; Nonaka and Teece 2001; Takeuchi 2001). The creation of knowledge is therefore likely to happen if there are policies that

enabled it. This is therefore in line with what St. Paul's University library is endeavoring to achieve.

4.7 How knowledge is organised at St. Paul's University library

The fourth objective of this study was to identify how knowledge was organised at St. Paul's University library. Question seven in the interview guide asked the participants how knowledge was organised at St. Paul's University library. From the study, participants' highlighted some knowledge organisations methods such as classification system, indexing and abstracting methods that are applied in the library.

Majority of the participants' responses were as follows; *"Knowledge organisation is the responsibility of the library"*. *"St. Paul's library is automated and is using KOHA; library database for knowledge organisation"*. *"The library uses Open Access Catalogue (OPAC) to organise knowledge"*. *Some participants mentioned that "the library is serving its purpose by ensuring teaching and learning resources are in place"*. Other participants said *"an institutional repository is a place to organise knowledge"*. Few of the participants noted that *"there were no proper systems in place to organise knowledge" and "that St. Paul's University library doesn't have effective processes for organising knowledge"*. Some participants mentioned that *"they had no idea of how knowledge was gathered, organised in the library"*.

Although some participants had varied ideas of how knowledge was gathered, organised and used, it was evident that St Paul's University library used cataloguing and classification methods for organising knowledge though some of the knowledge organisation methods such as abstracting and indexing had not been fully utilised.

As mentioned in chapter two in the literature review, Hjørland (2008:80) acknowledges that knowledge organisation (KO) is about activities such as document description, indexing and classification performed in libraries, bibliographical databases, archives and other kinds of "memory intuitions" by librarians, archivists, information specialists, subject specialists, as well as by computer algorithms and laymen". Knowledge classification and codification are important for information retrieval and usage. They encourage the access and use of knowledge thus encourages the creation of new knowledge (Baskerville and Dulipovici 2006:105).

The study findings revealed that even though St. Paul's University library organised knowledge for ease of access through classification methods, abstracting and indexing had not been fully exploited. This is a definite cause of concern since Desouza (2011) advises that without adequate care in how knowledge is managed, organisations will not operate optimally. This may result in the ineffective and inefficient creation and delivery of products and services that lead to unsatisfied customers. If not checked, the situational may ultimately lead to the demise of an organisation.

It is interesting to note that some of the participants of the study mentioned of having no idea of how knowledge was gathered, organised and used at St. Paul's University library. This was however attributed to the fact that some of the study participants did not work at the university library and were not conversant with detailed goings on of library data organisation activities. In the eyes of those not conversant with academic library's data organisation activities, knowledge management may not be existent.

It is therefore the researcher's view that when dealing with service backend processes of a library service, a process that is not usually clearly visible to library users, there would be need to consider the source of data collected in analysing and interpreting such study findings.

Most of the participants interviewed mentioned that there was need for the creation of a repository at St. Paul's University library since the library repository is not well populated content wise. Most of the materials in this library's repository include library resources, past papers, institutional conference proceedings and annual reports. This is an area which St. Paul's University library may need to improve on considering Brannin (2003) assertions that information repository is vital in all academic libraries since it promotes research, learning and education. Furthermore, repositories assist in scholarly communication (research finding dissemination).

The findings revealed that although the library was organising knowledge using cataloging and classification methods in the library, it should however embrace new technology for organising knowledge. The findings of this study therefore reveal to St. Paul's University that there may be need to improve on the use of abstracting and indexing for data organisation. Additionally, there is a need for the academic library to endeavor to have a comprehensive information repository.

4.8 How knowledge is shared at St. Paul's University library

The fifth objective of this study was to identify how knowledge was shared and transferred at St. Paul's University library. The purpose of questions 8, 9, 10, 11 and 12 in the interview guide (appendix B) was to establish how knowledge was transferred/shared, extent of knowledge sharing in the library, measures put in place to encourage culture of knowledge sharing, conduciveness of sharing information and knowledge in the library and incentive package for sharing of new ideas and innovations for employees.

Question eight of the interview guide, asked the participants how knowledge at the library was shared and transferred. Some of the interview responses from interview participants were as follows;

"They train users on how to use online resources". "Our library networks with other academic and non- academic libraries so that we can exchange information that is important for our library patrons and also staff". Majority of the participants commented as follows; "Our librarian normally organises library retreats at least every year and departmental meetings every semester whereby we share knowledge pertaining to our careers". "We share information in the library without restriction" and "academic workshops are organised once in a while that enhance knowledge sharing.

Some of the participants did not think that knowledge sharing at St. Paul's University library was taking place. As examples, some of the interview participants had the following to say; "There is no sharing of knowledge between departments". This opinion was likely founded on the lack of visibility on the part of participants for an official avenue for publishing research findings apart from external journals and the lack of a research office. Another participant felt that "knowledge sharing was not encouraged and not supported". One of the participants was not sure but said "St. Paul's University library was trying although they could do better".

Question nine of the interview guide asked the participants the extent of how knowledge sharing was encouraged and supported in the library. The participants' remarks were as follows;

"There is training at the end of every month where an employee is given an opportunity to participate by making a presentation on a given topic". "It is encouraged by enabling employees to attend workshops and conferences". "We train users on how to use online resources". "Our

library network with other academic and non- academic libraries so that we can exchange information that is important for our library patrons and also staff". "The library greatly encourages sharing of knowledge because it is what drives its day to day running". "Our librarian normally organise library retreats at least once every year and departmental meetings every semester whereby we share knowledge pertaining to our careers". Some participants said "There was no official avenue for publishing research and therefore a research office should be set up". Some participants felt that "knowledge sharing was not encouraged and not supported". One of the participants was not sure but said "St. Paul's University library was trying although they could do better".

From the above responses, it is therefore clear that knowledge sharing was encouraged and happens at St. Paul's University library to a large extent. It is also a good thing to note that St. Paul's University library encouraged and supported knowledge sharing in the library and that, its work environment supports the sharing of feelings, ideas and perceptions.

There were those that were either not sure or did not think that knowledge sharing was encouraged and supported. Additionally, some participants were of the opinion that essential knowledge that they required to execute their duties were not readily available in the library. This is definitely a pointer to an area that may require improvement, through techniques such as introduction of incentives and enhancing library trainings as suggested by (Hussock 2009:30).

According to Jones, *et al.,* (2006:414) factors that promoted knowledge sharing included training of users on how to access information through use of e-resources, networking with other academic libraries, attending trainings every end of the month where employees are given opportunities to make presentations of what they learnt in workshops and conferences.

Studies by Ramirez (2007) and Jacobs and Roodt (2007) indicate that organisational employees may share knowledge for various reasons that may include the desire to gain recognition, to be rewarded, to satisfy self-fulfillment needs or just to enhance career prospects at work. In contrast, workers who regard themselves full of expertise prefer not to collaborate with other members in the organisation (Bender and Fish 2000; Ramirez 2007). This could be that they looked down upon those who had less expertise. Arora (2002) thinks that where there is an unhealthy competition and a spirit of rivalry between the organisational departments, people may

be unwilling to share their knowledge with other departments. This could be so since when work relations are weak and low one cannot expect to find cooperation. The study concluded that informal knowledge sharing was prevalent.

People may be natural knowledge sharers, but within organisations there are competing motivations between loyalty to the organisation, loyalty to the team, and loyalty to one‘s career (Hussock 2009:30). These may cause a huge hindrance to knowledge sharing as knowledge has been said to be power. The knowledge people share willingly could not be the most lucrative and hence a need to provide incentives. This supports Syed-Ikshan and Rowland (2004) who postulated that employees need a strong motivation in order to share knowledge because it is unrealistic to assume that all employees will be willing to easily offer their knowledge without considering what may be gained or lost as a result of the action. The structure of the organisation was also not seen as conducive to the seamless sharing of knowledge. Issues such as peoples' attitudes, territoriality and lack of transparency were specifically mentioned as barriers that made it difficult for knowledge to flow easily throughout the organisation.

The purpose of question ten of the research interview schedule was to ask the participants about the measures the library had put in place to encourage a culture of knowledge sharing. The responses of the thirty two participants were as follows;

"New information is communicated to the staff in the library regularly through meetings, emails and university memos". "We usually hold monthly seminars/workshops in the library". "We share information through tacit and explicit knowledge transfer and this makes our library patrons aware of the resources available in the library such as new publications and research papers by uploading them in the institutional repository for access by all".

The above responses are indicative of an institutionalised way of sharing knowledge within the context of this study and which is considered by the researcher as the healthy part of St. Paul's University knowledge sharing culture. To a large extent, this is the existing organisational culture at St. Paul's University library. It is best described as, "the way we do things around here‟ and thereby providing a sense of identity to employees, supplying unwritten guidelines as to how to behave (Holbeche 2005:27).

Like in any other organisation, while you have elements of an organisational culture that supports the main course of an organisation, there are also those elements of an organisation culture that may weigh down on the organisation's pursuit of its objectives. Participants had the following to say about the knowledge sharing culture at St Paul's University library:

One participant mentioned that *"they don't share knowledge openly"*. Some of the participants felt that *"management had not created a conducive environment by not facilitating forums, and supporting them financially and investing in ICT for knowledge sharing and shared facilities that would enable the ease of sharing knowledge"*. *"Lack of investment by the management in the capacity building for the staff was a sign of non-commitment in creating a conducive environment for knowledge sharing"*. *"The University library has not provided sufficient working space and infrastructure"*. *"There was no establishment of ICT infrastructure that supported and enabled access of knowledge sharing"*. Other participants had the following to say: *"Interaction with staff was minimal, though it would be better and there should be deliberate effort to bring staff together for purposes of knowledge sharing"*. *"The environment was not conducive"*. *"There is lack of appreciation of knowledge that one knows"*, and *"The channels of communication are very poor and revolves around the management yet people who are tasked with the various activities are thrown into the deep end"*.

While it is worthwhile noting that most of these responses are centered around insufficiency of a positive knowledge sharing culture facilitation, it is a pointer of what the academic library may need to reinforce Its knowledge sharing facilitation to allow for the thriving of a positive knowledge sharing culture. The ultimate aim of such reinforcement would be to create and attain a knowledge sharing culture which Omerzel, *et al.*, (2011:113) viewed as a culture where employees are encouraged and supported to share and re-use knowledge.

The purpose of question eleven on the interview guide asked the participants whether the environment was conducive for sharing of information and knowledge. Participants' remarks were as follows;

"The management had created a conducive environment by facilitating forums and supporting them financially and investing in ICT for knowledge sharing, and shared facilities that would enable the ease of sharing knowledge". *"Investment by the management in the capacity building*

for the staff was a sign of commitment in creating a conducive environment for knowledge sharing". "The University library has provided sufficient working space and infrastructure". "There is a regular interaction with staff, though it would be better and there should be deliberate effort to bring staff together for purposes of knowledge sharing.

Some other participants mentioned that*; "The environment was not conducive since the internal people are not given a forum to share knowledge". "There is lack of appreciation of knowledge that one knows". "The channels of communication are very poor and revolve around the management yet people who are tasked with the various activities are thrown into the deep end".*

It is therefore apparent from responses received that there exists a fairly conducive environment that fosters the sharing of information and knowledge. There was however room for improvement especially in relation to improving channels of communication and bringing staff together in order to harness knowledge sharing. This will go a long way in bringing about a conducive environment where people do not feel forced to share knowledge but rather have a constant desire to learn together so that they complement each other (Jain 2009).

Most participants believed that the library had inadequate access to technology to make effective knowledge sharing activities possible. Additionally, it also emerged from the interviews that existing networks like the intranet were not utilised to their full capacity as they were not updated regularly. Furthermore librarians did not know how to use some of these technologies.

The purpose of question twelve of the interview guide was to establish whether there was an incentive package for sharing of new ideas and innovations for employees in the library. The views of thirty-two participants were as given below.

"The library allows time for presentation of reports after attending a conference or workshop so as to share with their colleagues who could not have attended". "The performance bonus is an incentive to promote knowledge sharing." "Attendance of international conferences should be treated as a possible reward, while another participant believed that special acknowledgement from the University Management would serve as an encouragement to the staff". "We need acknowledgement for our contributions and expertise because it will make us feel good and motivated". "Mentorship programs among the staffs should also be encouraged in every section so that we can be able to share knowledge".

Majority of the participants however cited some concerns. For instance, they stated that, *"Trust among librarians should be cultivated through exercises like teambuilding in order to encourage easy knowledge sharing among them". "The library should invite experts in certain field of interest to make presentations of their own work such as the research that they are busy with or have completed". "Staff should be allowed some time to engage in debates about the developments in their field of interest in the library World. This would encourage innovation". "The Best Librarian" award as an example of an incentive that should be used to encourage staff to share knowledge". "The library should implement ways of giving performance bonuses to staff".*

From participants' responses, it emerged that there was a gap between what knowledge sharing subjects expected for incentives and the lack of or inadequate incentives provided for sharing new ideas and innovations at the work place. As a result, most of the responses were alluding need to introduce incentives considered important by the interview participants. This is an area that the academic library may need to consider improving on.

Further, the study revealed that there were no incentives given for sharing of new ideas or innovations at St. Paul's University library for employees except through a letter of recognition as indicated by those who responded positively. Therefore, knowledge management policies and incentives systems have not received attention they deserve in the library. The introduction of incentives, rewards and attractive salaries and benefits can be used to harness expert knowledge as suggested by the participants which is consistent with (Jacob and Roodt 2007). Therefore, the study concluded that the library management should introduce incentives and rewards and attractive salaries in order to motivate the employees.

4.9 How knowledge is retained at St Paul's University library

The sixth objective of this study was to identify how knowledge was retained at St. Paul's University library. The purpose of questions 13, 14, 15 and 16 in the interview guide (appendix B) was to establish how knowledge was retained in the library, if there was a knowledge retention policy in the library, if there is was a mechanism the library had put in place in order to retain employees knowledge and if there was an institutional repository in the library. The remarks of the participants are as follows;

Question thirteen on the interview guide asked the participants how knowledge was retained in the library. Under this theme, the researcher wanted to know how knowledge was retained at St. Paul's University library. Participants' remarks were as indicated below;

Majority of the participants mentioned that, *"Knowledge existed in procedure manuals and on job descriptions". This was confirmed by a participant "who felt that they always found sufficient knowledge to enable them do their tasks". "We record our own experiences, for the benefit of our educational or work-related programs in which we are involved". "Knowledge is available in our PCs computers in our various departments for use". Some participants said, "The knowledge that we need is found only among the knowledge experts and not in a central location".*

The findings from majority of the participants' indicated that knowledge was retained through procedure manuals and in computers in various departments in the library. This contradicts the various retention methods mentioned by Wamudila and Ngulube (2011) who posit that knowledge can be retained in an organisation through various strategies such as education, training, establishing communities of practice and professional networks, documenting the processes and use of advanced technology to capture work processes.

The study findings, further contradicts Galagan (1997) who mentioned that most of the knowledge in organisations exists as tacit knowledge gained and built-up through years of experience. Therefore, this knowledge has to be captured and stored in the organisations repository such as databases, documents, software and embedding it in processes, products and services thus transferring the existing knowledge around in the organisation. Holtshouse (2009) further argues that valuable organisational know-how might be captured using resources such as communities of practice, professional networks, documentation processes and work processes knowledge capture through advances software.

Therefore, the study findings indicate that there are few knowledge retention methods in the library such as through documentation and in personal computers. The study findings indicated that the organisation had not established a proper knowledge management strategy to facilitated capture and retention of personalised (tacit) knowledge in the library.

Question fourteen on the interview guide asked participants if there was knowledge retention policy at St. Paul's University library.

Under this theme, the researcher wanted to establish if there were retention policies at St. Paul's University library. Majority of the participants had the following to say; *"Knowledge retention does not exist at St. Paul's University library". "Knowledge retention policies and practices seemed vague as expressed by one participant". "There should be a central place where procedures are kept so that they can be shared"*. Some participants said that, *"We are not sure of any knowledge retention policy"*.

From the participant's responses, there was an indication that the library did not have any retention policy. The researcher could not find any retention policy or strategy document developed at St. Paul's University library. Policy that is aimed at creating an inventory of organisational intellectual assets, and avoiding their loss can be a part of best practices in an organisation. These assets include both tacit and explicit knowledge (Nonaka and Takeuchi 1995). The study therefore concluded that St. Paul's does not have comprehensive retention policy as indicated by majority of the participants. Therefore the library should make an effort to put in place strategies of implementing knowledge management retention policy

Question fifteen on the interview guide asked the participants the mechanisms that the library had put in place in order to retain employee knowledge. When participants were asked to suggest mechanisms that library had put in place in order to retain employee knowledge, several options suggested by majority of the participants during data collection included documentation process, recognition and implementing reward structure, interviewing retirees, library procedures or processes manuals.

On further probing, Majority of the participants had the following to say*; "Knowledge was not really retained when an employee exited unless the individuals made the effort to share it before leaving". Very little was done to retain knowledge". "There are no clear processes or policies in place that captures employee knowledge in the library". "Most staff left without sharing their knowledge and it was a big challenge for the institution". "Knowledge was rarely documented and rarely passed on hence a new person comes in with a totally different strategy". "Knowledge is retained through documentation and process explanation documents". Some*

participants mentioned that "research work captures expertise knowledge", "personal development in the area of specialisation". Some participants mentioned that, *"The HR office is in charge to capture knowledge from staff that leaves the institution".*

Therefore, this finding contradicts the methods mentioned by Inmon, O'Neil and Fryman (2008) who mentioned different sources of knowledge retention and information such as emails, contracts, proposals, reports, copyrights, work processes, procedures, products and individual employees with memory in their heads. The findings contradicts scholars such as Dubin (2005); Jain (2009); Poole and Shenan (2006) and Dewah (2011) who points out various approaches applicable to knowledge retention which includes; communities of practice, repositories, mentoring and apprenticeship programs, use of subject experts and project milestones. Therefore the study concluded that St. Paul's library uses different methods of knowledge retention contrary to what different scholars in the literature mentioned

According to Kirsch (2008) knowledge retention is about focusing on the critical knowledge that is at risk of loss, prioritizing what is at risk based on potential knowledge gaps and their impact upon overall organisational performance, and then developing actionable plans to retain that knowledge. Levy (2011) asserts that determining the knowledge to be retained is one of the most important tasks of knowledge retention projects. A key reason for performing knowledge retention is to grow the institutional memory of the organisation. In this manner, employees can learn from past successes and failures to ensure positive results. Learning from others could help avoid going down the wrong paths or reinventing the wheel (Liebowitz 2009).

The study also established St. Paul's University library uses documentation processes as the most common method or way of retaining organisational knowledge. This was not consistent with Hansen, Nohria and Tierney (2001) found that people-to-people documents is the only way to share knowledge; though people talk with one another they don't place emphasis on the codification strategy for certain types of work. Majority of the participants did not agree that the library had a system or mechanism in place that ensured that knowledge from experienced staff that either resigned or retired was retained.

The study concluded that St. Paul's University library had not put up strategies, clear processes and policies that would capture and retain employees' knowledge in the library. Therefore the

library should implement clear processes and policies that will capture employees' knowledge in the library. A central location where all members can contribute and find information is important in knowledge management (KM).

Question sixteen of the interview guide asked the participants if there was an institutional repository in the library that was accessible at St. Paul's University library. One participant acknowledged that indeed an institutional repository existed. There was however a high number of participants that did not consider an institutional repository to be in existence. Some of the participant's responses are as indicated below;

"There is an institutional repository in the library though it is yet to grow and be used sufficiently". "It was still being developed". "There institution should invest heavily in the library in terms of learning and teaching resources hence becoming the central place for knowledge". "Another participant mentioned that there was no institutional repository in place". "I am not aware of any Institutional repository in the library".

A central repository with local content is relevant for knowledge management and hence the question aimed at finding out if employees were aware of a central knowledge repository and if there was an endeavor to submit their work. Technology plays a huge role in storing of content such as institutional repository. According to Hayes (2005) Institutional repositories are important for the managing and dissemination of a university's intellectual property as part of its information assets strategy. He further asserts that, Digital repositories typically preserve and showcase an institution's research (faculty and student), presentations, images, teaching materials, and administrative documents. These items are searchable and retrievable, deriving maximum benefit from the repository. The open access standard enhances these opportunities for the use of archived research, increases a global likelihood of collaborations among different disciplines, and provides for potential learning experiences (Hayes 2005).

The findings indicate that St. Paul's University library institutional repository only has research work by students and past papers. This does not fully match Hayes (2005) prescription. The study further revealed that not all participants were aware of an institutional repository being in place. It was interesting to note that not even half of the participants contributed their work into the institutional repository yet the majority of the academic staff and non-academic staffs were

doing research work and publishing their work. One participant expressed that there was not much knowledge on the availability of a central repository in place only citing the availability of past papers. This could be attributed to lack of awareness as can be seen in this comment: "staff and students are not well trained on technologies such as an institutional repository" The study therefore, concluded that not all employees were aware of any institutional repository being in place in the academic library.

4.10 ICT Instruments used for knowledge management at St Paul's library

The seventh objective of this study was to identify the different ICT instruments used for knowledge management at St. Paul's University library. Questions 17, 18, 19, 20, 21, 22, 23 and 24 in the interview guide (appendix B) was to establish the information technology instruments adopted in the library, what ICT tools supported real time interactions and collaborations among the employees, to find out if the was a process or system where new knowledge was created significantly for the future, to find out systems in place to capture expertise knowledge when exiting employment, ICT tools /instruments used to facilitate knowledge acquisition, organising knowledge, ICT tools that support knowledge sharing and transfer, ICT tools used for knowledge retention and to find out if the library is innovative. This is therefore presented and discussed here.

Question seventeen on the interview guide asked participant the information technology instruments adopted in St Paul's University library in order to increase opportunities for managing knowledge management processes. Some participants identified online repositories, online databases, computers, internet, integrated management systems, networks and federated search tools. Most of the participants' viewers were as follows;

"The ICT was there but not fully utilised and could be put into good use". "The University had invested heavily on ICT and enabled internet connectivity through a fiber optic platform". Some said that, "We appreciate the use of internet and presence of a telephone in place". "The staff and students have not been trained well on technologies such as intranets and portals". "There is frequent fluctuation of the internet and it was very slow". Few participants mentioned, "ICT infrastructure could be improved even further to facilitate knowledge management processes". "Technology was ok but required frequent monitoring to keep it working".

These responses showed that participant were well aware that St. Paul's University library used the various information technology instruments that included online repositories, databases, computers, internet, federated search tools, integrated management systems, and networks. It however emerged that the responses did not capture some of the other known information technology instruments that may be available for use such as intranet, emails, websites, alerting services, bulletin boards and chat facilities as advanced by Dalkir (2005) as cited by (Parirokh, *et al.*, 2009).

Dalkir (2005) as cited by (Parirokh, *et al.,* 2009) who noted that information technology components, such as intranet, emails, databases, websites, alerting services, bulletin boards, chat facilities that facilitates knowledge acquisition, organisation, dissemination, access and application. Knowledge management studies have also shown that appropriate ICTs can aid in the creation, sharing and transfer of knowledge (Alavi and Leidner 1999; Goh, *et al.,* 2008; Chudoba, *et al.,* 2011). Broos and Cronje (2009) asserts that the goal of many organisations is thus to use appropriate ICTs so that knowledge management initiatives can be conducted effectively.

These findings show that St. Paul's University library had made a good effort in setting up technological infrastructure in terms of computers and internet. As further noted, there exists room for improvement.

Existing literature reveal that universities generally provide ICT infrastructure for its students and staff. According to Morrissey (2005:14) Knowledge Management technologies include storage tools, search and retrieval tools, collaboration tools and communication tools. The provision of basic computer and internet alone may not be sufficient to enhance collaboration. Participants at St. Paul's university library shared the same sentiments about availability of ICT infrastructure but raised a few issues such as:

"ICT is available but it is not being used sufficiently because employees use individual emails to communicate officially yet they should have official communicating tools such as Outlook", "infrastructure is available but physical facilitation is needed", and "the computers are available but they are not being used fully in promoting knowledge management".

Participants were in agreement that ICT infrastructure was insufficient and there was lack of good policies to support knowledge management. Therefore there is need to train staff in the use of ICT which will improve on efficiency especially with regard to enabling knowledge management processes.

Question eighteen of the above objective, further asked the participants the ICT tools that supported real time interactions and collaborations among the employees in the library. Some participants mentioned emails, computers, mobile phones, social media, and video/teleconferencing and internet as real time interactions that can be used in the library.

Majority of the participants said that, *"Social media tools were very dormant"*. *"Efforts are being made to incorporate some of the social media tools to support collaborations"*. *"The institution feels that we spend a lot of time on Face book therefore regarding it as time wasters"*. *"Face book and other social media tools should be made as official collaborating tools in the library"*. Other participants mentioned that, *"We don't have collaborating tools in the library"*. *"The library should implement the use of virtual library as a collaborating tool"*.

The study at St. Paul's University library revealed that they used emails, computers and mobiles as the ICT tools that support real time interactions and collaborations among. This is because the library has not embraced the use of interactive tools since they are not being utilised and supported by the management. The findings contradict Albers 2009) who mentioned that technology makes virtual organisations more feasible. Networking technologies, chat rooms, videoconferencing, discussion forums, Wikis, and groupware are collaborative tools that can enable knowledge sharing, transfer and retention in an organisation. The study further revealed that St. Paul's university library were not using social media tools such as video/teleconferencing, blogs, Facebook and wikis as collaboration tools in the library. This is due to lack of policies in setting up such collaborative tools in the university library.

The study findings contradict Anderson (2007) and Sadeh (2008) who said that collaborative, interactive workspaces such as wikis that are available have become relevant and librarians need to find ways of making use of the new technologies to best advantage. Jain (2007:377) is in support of the above statement by asserting that information technology can support knowledge management by providing the means to organise, store, retrieve, disseminate and share explicit

knowledge and information rapidly around the organisation and the world and by connecting people with people through collaborative tools to capture and share tacit knowledge.

The findings of the study concluded that the participants had no skills in using the current technologies and thereby not using outlook as an official communication tool among its employees. According to Egbu and Botterill (2002:129) he highlighted that ICT should be understood less in its capacity to store explicit information and more in its potential to aid collaboration and co-operation between people. St. Paul's University library should provide knowledge management tools by setting up ICT infrastructure that will enhance collaboration and ensure that all employees are made aware and trained on the same.

Question nineteen of the in the interview guide asked whether the library had a process or a system where new knowledge was created significantly for future use and for the benefit of the organisation. The responses of participants' were as follows;

Majority of the participants said that, *"the library uses ICT which provides access to data and information". They were of the opinion that "St. Paul's University library should take an initiative to develop a system or a process that will uplift knowledge creation as there was no formal system promoting knowledge creation at the moment" "research work should be supported in the library not only for publication but also as a form of knowledge creation". Other participants were of the opinion that, "Research will enable St. Paul's University find out new trends in teaching and learning", "Members of staff who were doing their own research should be supported in order to enhance the process. This is supported by some participants who said that "St Paul's University should seek for funding of research that would encourage knowledge creation". "University should provide support to all staff to go for further studies and support them to attend seminars, and this will create new knowledge in the library". One participant mentioned that, "he was not sure if the systems existed in the library".*

From the participants' analysis, there is an indication that there were no systems or processes for new knowledge creation at St. Paul's University library. The organisations lose tacit knowledge when employees leave for other organisations and other forms of attrition. Hamaza (2008:2) argues that "as long as they stay on employment with the organisation, they continue playing a

competitive figure through effective decision making, communication and contribution. Once employees leave an organisation knowledge in their heads is also gone."

It was apparent from the findings of the study that there was no system in place to ensure that the procedures relating to the daily tasks of the librarians are recorded and kept for future use. However, a majority of the participants felt that research work should be supported in the library not only for publication but also as a form of knowledge creation to improve the library service. Although, the results from the interviews showed that participants believe that there were adequate technologies that could be used to capture and store knowledge, the results from the interviews indicated that this was not happening at the moment. In fact, even the intranet which could serve as a valuable knowledge sharing platform and repository was not regularly updated. Therefore, participants believe that more focus should be put into research and also involve all the staff in the institution to create new knowledge.

Question twenty of the interview guide asked the participant the ICT Tools used to facilitate knowledge acquisition in the library. Majority of the participants' mentioned "internet" as the most frequently used tool to facilitate acquisition in the library. Others mentioned, computers/laptops, library databases, emails, and software's. The results reveal that majority of participants mentioned the internet because it was fast and convenient when acquiring of information in the library.

The use of ICT in a knowledge management approach is vital (Mchombu 2007). According to Wen (2005) knowledge management managers need to look inside and outside their organisation or libraries and check if there are any new developments in the organisational structures, services, or technologies, which can be used to improve the performance of the organisation. In addition, the interaction between people helps managing the knowledge effectively (Bhatt 2001). The study sort to establish the ICT Tools used to facilitate knowledge acquisition in the library.

The findings of the study at St. Paul's university library indicated that they used internet, computers, library databases and emails as tools used to facilitate knowledge acquisition in the library. It is evident from the findings that majority of participants used internet because it was fast and convenient when acquiring information in the library. This was however not sufficient. Although there was an indication of various ICT tools at St. Paul's University library for

acquiring knowledge in the library (such as internet, computers, library databases and emails) most of them had not been adopted and implemented for use of knowledge acquisitions. This falls short of Nemani (2010) view where he mentioned that computer technology entails use of the email, websites, intranets, web portals, groupware, blogs and mail groups and as such the computer technology has been recognised as an enabling tool in facilitating knowledge acquisition.

Question twenty one of the interview guide further asked the participants on some of the ICT tools used for organising knowledge in the library. Participants mentioned that internet, search engines, online referencing tools, online repositories, database management tools, computers and library software were used for organising knowledge in the library. Comments from participants were as follows;

"The library uses classification systems for knowledge organisation". "Some participants mentioned used of Online Public Access Catalogs (OPAC) as a tool for organising knowledge". "The library use online resources for easing their work on knowledge organisation". Other participants mention that, "they were not sure of what ICT tools were used for knowledge organisation in the library". Some participants mentioned that, "they use the internet when searching for knowledge in the library". "Computers in the library are used to search for research information on the internet using Google scholar".

It is evident that most participants believe St. Paul's University library utilised classification tools to organise knowledge. Other participants mentioned OPAC as a tool for organising knowledge at St Paul's University library. This supports Lee (2007) who points out that most libraries have developed, and are maintaining an integrated online public access catalogue (OPAC) with both internal and external resources in all formats. The overall response shows that knowledge is recognised and organised as a strategic asset.

St. Paul's University library catalogues with the use of KOHA Database which includes a suite of cataloguing and metadata services in classifying library material, using the Library of Congress Classification system. The use of KOHA enables interlinking between classification numbers, the alphabetical index of the tables and Library of Congress Subject Headings. This ability to work without special effort on the part of librarians or library users between subject

headings and the classification system while supporting hyper textual navigation structures is a feature of knowledge management practice.

To be assured that the library organised material by internationally recognised standards, it is a member of Kenya Library and Information Services Consortium (KLISC), Christian Association of Librarians in Africa (CALA), Kenya Library Association (KLA) of professional groups and organisation of libraries and surrounding areas that facilitates collaboration and cooperation among its members, and support access to cost-effective resources that enabled member institutions to enhance the services they provided to their users. All these organisations also help keep librarians updated about changes and trends in the profession, besides providing training possibilities and opportunities. That encouraged knowledge networking, that is, people enriching the knowledge asset through collaborative practices.

Therefore, in conclusion, St. Paul's University library uses KOHA database for organising its knowledge for ease of access by its users.

Question twenty two on the interview guide asked the participants the ICT tools that supported knowledge sharing and transfer in the library.

As discussed in Chapter 2 technology usually plays a vital role in the sharing of knowledge in organisations, even though many technology experts and academic scholars have observed a lack of correlation between technology and knowledge management (Malhotra 2000: 1). Be that as it may, the intranet has been considered as one of the tools that can be used to encourage individuals to contribute to a knowledge sharing culture (Van der Walt, van Brakel and Kok 2004: 1).

The study indicated that few of the participants believed that the library had necessary ICT tools that supported knowledge sharing and transfer. These technologies included the intranet, web 2.0 tools, telephones, email, Institutional repositories, databases, the internet, etc. Their comments were; *"that Computer and telephones both allowed for communication with colleagues in order to share information". "The Institutional repositories, databases and the internet, allowed remote access to many people at the same time".* Another participant mentioned *"subscription of online resources".*

This finding is consistent with studies conducted by Fombad (2009); Stafford and Mearns (2009) where it emerged that telephones, computers, personal networked computers, email, internet and face-to-face discussions with peers were the most important for knowledge sharing and dissemination. Holbeche (2005) observes that most organisations now actively encourage employee use of the internet, intranet, bulletin boards, E-mail and shared databases for knowledge sharing. However, the data from the interviews was far less positive and indicated a number of concerns. For instance, it became clear that a few of the participants were unhappy with the ICT tools in the library as they were not sufficient to facilitate knowledge sharing. The intranet used for knowledge sharing was not effective as it was not update regularly. Their comments were; *"The Intranet and library website were used to a certain extent since they could not access the EZ-proxy which would have been ideal when not in campus"*.

In literature, intranets and advanced Web applications have been considered to provide an excellent platform to share knowledge within and outside the libraries. Bejune (2007); Chu Kai-Wah (2009); Kim and Abbas (2010); Tripathi and Kumar (2010) posit that, libraries are increasingly using blogs, Wikis, RSS, Social media and other Web application for knowledge sharing purposes.

A study conducted by Parirohk, Daneshgar and Fattahi (2008) on the existing state of practices in tacit knowledge sharing in university libraries indicated that intranets, telephone lines, traditional face-to-face communication methods have been used by most of the librarians, but knowledge sharing initiatives have not been institutionalized in a majority of the libraries that participated in the study. Kim and Abbas (2010) in a recent study examined 230 randomly-selected library Web sites and found RSS and blogs have been widely adopted by academic libraries. The findings of this study at St. Paul's University library contradict the study by Parirohk, Daneshgar and Fattah (2008).

There is therefore a need for the library to put measures in place to ensure that the intranet is not only regularly updated but effectively used as a knowledge sharing tool. The library should further investigate the use of other ICT tools to enable knowledge sharing and to facilitate the capturing and storing of relevant tacit knowledge. For example it should investigate in-house blogs, Linked-In and wikis that can be used for collaboration and to create knowledge repositories. Blogging and other social networking such as Facebook and Twitter were not

common with participants as a knowledge sharing tool since it had not been incorporated in the library. This could be so because employees preferred using other tools such as emails. The Internet plays a vital role in knowledge management activities by providing access to the worldwide wealth of information (Malhan and Gulati 2003).

It is further clear that the majority of participants indicated that they used ICT tools such as electronic databases, library management systems such as KOHA, Federated search tools and websites and related systems were largely used to support knowledge sharing and transfer. Though online repositories and D-space were also noted to have been fronted, they appeared not to be utilised significantly and Web 2.0 tools were very vague. St. Paul's University library should incorporate other collaboration tools such as blogs, wikis and Google Docs for communication purposes.

The participant's opinion is that the library does not have adequate technologies that could enable knowledge sharing and knowledge capturing. However, data from the interviews was far less positive and indicated a number of concerns. For instance it became clear that although the intranet was used as a knowledge sharing tool, it was not that effective as it is not regularly updated. The researcher recommends that the librarian should not only ensure that all librarians are given appropriate training in using knowledge sharing tools, but they should also ensure that the learned skills are put into good practice are sharing initiatives are institutionalised.

Question twenty three in the interview guide asked the participants the tools that support knowledge retention in the library.

It emerged from analysis that participants cited documentation processes, mentoring programs, trainings, institutional repository, OPACs, library procedures, implementing rewards structures and job rotations as tools for knowledge retention in the library. During an interview participants indicated that; "it is the HR who interview retirees and record their experiences through exit interviews which has nothing to do with capturing an individual's knowledge". "One participant mentioned that there were no retention tools in the library"

From analysis, the knowledge retention tools mentioned by participants, did not match the tools mentioned in literature, by Young (2010:9) who identified technological knowledge management techniques that can be applied in knowledge retention such as; Document libraries leading to a

document management system, Knowledge bases (Wikis, etc.), Blogs, Social network services, Voice and voice-over-Internet protocol (VOIP), Building knowledge clusters, Expert locator, Collaborative virtual workspaces.

According to Kim (2005) and Dan (2008) knowledge retention is the capture of critical knowledge and expertise that is at risk of loss when employee leaves and organisation. Based on the findings of the study, a few tools were identified as important for knowledge retention. These were documentation, training and digital repository. Therefore, documentation is seen as a useful method in transferring and retaining of knowledge in the library. This is consistent with Agarwal *et al.,* (2011) who assert that degree to which documentation is useful is also dependent upon the degree to which it is accessible on the role of accessibility versus quality in information seeking. The revelation above shows that it is true that ICT systems exist in the library but their usage in knowledge retention is low. The ICT tools mentioned above for knowledge retention in the library are, therefore, in place but with limited application in passing on vital knowledge for purposes of retaining it. There are also no formal procedures for knowledge management, meaning that some of the tools are applied indirectly to knowledge management.

In conclusion, the concept of knowledge retention at St. Paul's University library is new to the participants therefore indicating simply that they utilise the systems to share information at an individual level. This, therefore, calls for library management to consider implementing a stronghold in applying ICT systems in knowledge retention to avoid loss of important information. Participants further indicated that the university should hire experts, retirees and other specialists to train junior staff, to provide coaching and mentoring services for a reward so that knowledge can be captured and retained in the library. Therefore, St. Paul's University library should draft policies to allow for the use of experts to mentor new employees, set up a section that deals with knowledge retention and involve retirees to do consultancy work and be recalled to assist when need arise.

Question twenty four on the interview guide asked the participants if they considered the library to be innovative. Participants' responses were as follows;

"*The library lends laptops to students for use in the library*". "*The developments of the library for the past 7 years in terms of expansion and development shows that St. Paul's University*

library is innovative". *"Research work is part of innovation in the library"*. Other participants mentioned that, *"the library had tried in terms of being creative in doing things for example in developments such as adoption of new technologies and making maximum use of available space at the University"*.

On the other hand, there were those that did not think that St. Paul's University library was innovative. One such interview participant had the following to say; *"St. Paul's University library was not aggressive in knowledge creation, and is still setting up mechanism that will support innovation"*.

The study findings indicated that St. Paul's University library was not as innovative as it should be. The innovations that were highlighted by the participants were linked to the growth, and development of the building, and programs but not to the knowledge output. Therefore, St. Paul's University library concentrated on product innovation and not process innovation which encompasses knowledge and which is essential for Knowledge Management.

In defining innovation, Crossan and Apaydin (2010) viewed innovation as an outcome and as a process. They further mentioned that the outcomes of innovations are through new products and services, a new market approach and a new way of working. The process involves the organisation producing innovation as an outcome and the organisation adapting to innovation. On the other hand, Du Plessis (2007) further identified three main drivers of the application of knowledge management in innovation such as to create, build and maintain competitive advantage through utilisation of knowledge and through collaborative practices. He further mentioned that knowledge is a resource used to reduce complexity in the innovation process and integration of knowledge both internal and external to the organisation (or library), thus making it more available and accessible. Therefore, according to Crossan and Apaydin (2010) the novelty pursued should add value in economic and social spheres.

These findings therefore indicate that St. Paul's University library is still in the process of setting up mechanisms that will fully support innovation. Knowledge management innovations should therefore be the main focus of St. Paul's University library.

4.11 Knowledge management challenges and enhancement at St. Paul's University library

The eighth objective of the study was to identify knowledge management challenges and how knowledge management can be enhanced at St. Paul's University library. Questions 25 and 26 in the interview guide (appendix B) are discussed below;

Question twenty five on the interview guide asked the participants some of the challenges of knowledge management at St. Paul's University library. Majority of the participants' remarks were as follows:

"There is lack of knowledge-sharing culture and knowledge capturing mechanisms". "There is lack of support from top management and provision of rewards and incentives". "There is a financial constraint". There is lack of ICT infrastructure". "There is constant budget decline" and "There is lack of expertise among the librarians to identify knowledge resources within or outside the library". Other participants mentioned, "There is lack of knowledge retention process". "There is misunderstanding of knowledge management concept", and "Lack of clearly defined guidelines on implementation knowledge management processes".

The study findings indicates that most participants mentioned lack of trainings, financial constraints, poor management support, lack of sharing among employees, There is lack of ICT infrastructure. Some of the challenges that were identified by participants matched with the challenges pointed out by Jain (2009) that include; financial constraints and technological infrastructure for effective use in the library. Study by Ou and Davison (2007) had similar findings that identified lack of training, limited resources, communication problems, poor knowledge sharing among colleagues, bureaucratic systems, poor knowledge contributions to knowledge management systems by individuals and lack of standardized practice in knowledge storage and transfer.

As indicated in the literature, sharing of knowledge is one of the most critical factors for the effectiveness of knowledge management. Studies done by Blair (2002) and Roknuzzaman and Umemoto (2009) have indicated that the existing library environment and mechanism do not support or appreciate staff that shares their expertise. There is therefore a need of a favorable organisational culture for creating and sharing of knowledge in libraries.

According to Benbya (2008) the impact of top management and leadership support is greater for knowledge management because it is an emerging disciple which employees may need the added incentive due to total commitment from their organisation's top management and leadership. One of the factors that influence critical success of knowledge management is top management support such as organisational culture. This is because the role of leadership is crucial in fostering trust and promoting a knowledge-sharing culture. According to Bennett and Gabriel (1991) a structured reward system with well-defined policies helps in the flow of information. In cases where there is a provision of fair performance measurement, there is motivation of employees to share their knowledge and help others.

According to Abell and Oxbro (2001) expertise depends on the abilities of the employees to "identify, acquire and evaluate internal and external sources of knowledge and integrate, organise and make relevant knowledge available to the right person at the right time". This study conducted at St. Paul's University library indicates that librarians do not recognise the importance of identifying, capturing and sharing tacit knowledge mainly due to lack of appropriate expertise.

The study findings therefore revealed that St. Paul's University library experience many challenges that hinder them from initiating, adopting and implementing knowledge management. In existing literature, Jain (2011) asserts that knowledge management adoption in academic libraries will improve library services and productivity. There will be more production from reduced resources which is driven by financial constraints. It results in the leveraging of already existing knowledge to manage information explosion, manage rapid knowledge decay, make informed decisions, establish best practices and avoid duplication of efforts.

Question 26 on the interview guide asked participants how knowledge management can be enhanced at St. Paul's University library. Participants mentioned some ways such as; use of current data support systems, through training and through sharing sessions. Below were their responses;

"Few participant attributed knowledge management enhancement to attending workshops, seminars, exhibitions, strengthening external knowledge partnerships and SWOT analysis". Majority of the participants mentioned that "there was lack of sharing culture that could

enhance knowledge management". Most participants mentioned that "the library should create a system where knowledge of employees is captured before leaving the institution". Other participants mentioned that "the library should encourage collaboration with other institutions and departments". "Some participant attributed it to encouraging teamwork and job rotation". "We enhanced knowledge management processes by having trainings and sharing of sessions in library". "Another mentioned that they enhance knowledge management through trust and openness among themselves in their respective departments".

The study findings revealed that knowledge management could be enhanced in the library through encouraging teamwork and job rotation, attending workshops, seminars, exhibition, collaborations with other institutions and departments and through trust and openness. Additionally for those that considered the library to be enhancing knowledge, they gave varied reasons for their beliefs. These findings contradict Martin, *et al*., (2006); Martin (2009) and Mavodza (2010) who mentioned that, knowledge management is about enhancing the use of organisational knowledge through sound practices of knowledge management and organisation learning. Today's library is therefore fully capable of developing and leveraging critical knowledge through appropriate knowledge management processes to improve on their organisational performance.

4.12 Summary of chapter four

This chapter presented and analysed the data obtained from interviews of the participants at St. Paul's University library. Data was collected from the library committee members, faculty and library staff. Data was collected through interviews. The main themes of the study were discussed in line with the research questions and subsequently research objectives. The actual words of the participants were used to emphasise their opinions. The next chapter contains summary, recommendations and conclusions of the study.

CHAPTER FIVE: SUMMARY OF MAJOR FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

In the previous chapter, data collected was analysed, presented and interpreted. This chapter provides a summary of the findings as well as conclusions and recommendations arising from the study. This study was conducted with the purpose of investigating the types of processes involved in knowledge management practices at St. Paul's University library. Ways by which these processes can be enhanced in order to promote efficiency and effectiveness of knowledge management in academic libraries are further suggested. The objective of the study was to find answers to the following research questions:

1. What is the understanding of knowledge management processes awareness at St. Paul's University library?
2. How is knowledge created at St Paul's University library?
3. How is knowledge acquired at St. Paul's University library?
4. How is knowledge organised in the library at St. Paul's University
5. How is knowledge transferred/shared at St. Paul's University library?
6. How is knowledge retained at the University's library?
7. What are the different ICT instruments used for knowledge management at St Paul's library?
8. What are the challenges of knowledge management and how can knowledge management be enhanced at St Paul's University library?

5.2 Summary of findings and conclusions

In this section, a summary of findings and subsequent conclusions are presented. For each research question that is tied to its related study research objective, related summary of findings and conclusion have been discussed within the same section so as to enrich the flow of each discussion. Subsections of this section have therefore been arranged based on the research objectives.

5.2.1 Understanding of knowledge management awareness at St. Paul's University library.

The first objective of this study was to find out the understanding of knowledge management awareness at St. Paul's University library. In this study, participants were drawn from a hybrid of professionals at St. Paul's University that included library management committee members, library staff and faculty staff members. The findings of this study revealed that there was some level of understanding among participants on what knowledge management meant to them. Some of the participants' viewpoints on knowledge management made sense of what knowledge management is, when compared to the definitions from authors that the researcher had adopted in this study. Such participants demonstrated that they were aware of and understood the concept of knowledge management to a large extend.

On the other hand, explanations by some of the research participants on the concept of knowledge management showed that their understanding of knowledge management did not match the definitions relied upon by the researcher. Furthermore majority of these interview participants were not able to convincingly explain what knowledge management concerns comprehensively. This therefore was an indication that there were participants that had limited knowledge and understanding on the concept of knowledge management.

In conclusion therefore, it is clear that the understanding of the concept of knowledge management and its awareness varied among participants in this study. As a result, there exists a knowledge management awareness gap at St. Paul's University library that requires to be addressed. There is therefore a need to bridge this variance gap through academic library stakeholders' education on knowledge management to provide for improved knowledge management understanding and subsequent awareness.

5.2.2 Knowledge creation at St Paul's University library

The second objective of this study was to establish how knowledge was created at St Paul's University library. From the study, it emerged that there was a general consensus that knowledge management at St. Paul's University library got created through research work and output, purchase of resources, seminars, and networking with other institutions. The other methods of knowledge creation that emerged included; reading literature, through formal and informal meetings and benchmarking.

Additionally, feedback from librarians interviewed revealed that librarians attended conferences, retreats and workshops organised by the University library and other academic institutions. However, in-house trainings and conferences were not frequently organised by St. Paul's University. However, in an effort to pass skills amongst library staff, there was limited job rotation in the library at St. Paul's University.

Additionally, there were those participants that attributed knowledge creation to be done through scholarly research work, this being a requirement for higher education advancement and the regular publishing requirements for scholars.

In conclusion therefore, it however emerged from the study that there were insufficient formal mechanisms for creating knowledge of expert employees at St. Paul's University, mechanisms such as knowledge mapping, mentoring, use of storytelling forums, use of focus groups and through extraction were not the norm. The library also lacked written policies that would help set standards that could be used as tools to motive staff to create, share and retain the knowledge they know in the library. It however emerged from the study that knowledge creation was hampered by lack of an institutionalised knowledge creation policy.

5.2.3 Knowledge acquisition at St Paul's University library

The third objective of this study was to establish how knowledge is acquired in the library at St. Paul's University. The findings from the study revealed that knowledge was acquired at St. Paul's University library through the reliance of on-the-job-training, workshops, seminars, conferences, retreats and buying knowledge products and resource. Though not known to everyone at St. Paul's University library, it also emerged that there were written policies on knowledge acquisition at the institution. This therefore suggests existence of a formal process for acquiring knowledge at St. Paul's University library.

Additionally, study participants were largely unaware of any process of capturing and sharing knowledge by those that were exiting employment. They indeed mentioned that the know-how and expertise of the retired and resigned staff had not been captured elsewhere. It is however worth noting that the sampled participants did not include employees that worked in St. Paul's University human resource unit and which was a limitation to this study. In order to achieve

more comprehensive outcomes from such studies, it is recommended that future similar studies include study context human resource practitioners as part of interview participants.

Based on the results of this study, it was therefore concluded that there indeed existed a formal process of acquiring knowledge at St. Paul's University library. This is made possible through on-the-job-training, workshops, seminars, conferences, retreats and buying knowledge products and resource. Additionally, there were written policies on knowledge acquisition though this was not known to all participants.

5.2.4 Knowledge organisation at St. Paul's University library

The forth objective of this study was to establish how knowledge is organised at St. Paul's University library. The findings of this study revealed that although some participants had varied ideas of how knowledge was gathered, organised and used, it was evident that St Paul's University library mainly relied on classification methods to organise its knowledge. Other knowledge organisation methods such as abstracting and indexing had however not been fully utilised at the academic library.

In conclusion therefore, these findings reveal that there may be need for St. Paul's University library to improve on the use of abstracting and indexing for data organisation. Additionally, there is a need for the academic library to endeavor to have a comprehensive information repository.

5.2.5 Knowledge transfer/sharing at St. Paul's University library.

The fifth objective of this study was to determine how knowledge is transferred /shared at St. Paul's University library. The study findings of this study revealed that St. Paul's University library encouraged and supported knowledge sharing to a large extent. Its work environment also supported sharing feelings, ideas and perceptions.

The findings of this study however revealed that the structure of the organisation was not seen as being conducive to the seamless sharing of knowledge. Issues such as peoples' attitudes, territoriality and lack of transparency were specifically mentioned as barriers that made it difficult for knowledge to flow easily throughout the organisation. It was also noted that the academic library utilised fewer than available methods to facilitate its transfer of knowledge.

Additionally, there were limited incentives given for sharing of new ideas or innovations at St. Paul's University library for employees.

In conclusion therefore, this study revealed that to a large extend, knowledge sharing and transfer happens and is supported at St. Paul's University library. There were however organisational issues that impaired efficiency of knowledge sharing at the university's library. These therefore are issues that St. Paul's University library may need to address in order to create a more conducive environment for knowledge sharing and transfer.

5.2.6 Knowledge retention at St. Paul's University library

The sixth objective of this study was to establish how knowledge is retained at St. Paul's University's library. The findings of this study revealed that documentation process at St. Paul's University library was mainly used as a way of retaining organisational knowledge. Emerging from the study also was the finding that St. Paul's University library did not have an appropriate retention policy. From the study, the researcher did not find an appropriate retention policy or knowledge retention related strategy document that had been developed for use at the library. It also emerged from the study that St. Paul's University library's institutional repository only had research work done by students and past papers. The study findings further revealed that not all participants were aware of an institutional repository being in place.

It was interesting to note that not even half of the participants contributed their work into the institutional repository yet majority of academic staff and non-academic staffs were actively doing research work and publishing their academic work. Additionally, majority of the participants did not agree that the library had a system or mechanism in place that ensured that knowledge from experienced staff that either resigned or retired was retained.

In conclusion therefore, based on the findings of this study, St. Paul's University library had not put in place sufficient strategies, sufficient clear processes and policies that would capture and retain employees' knowledge in the academic library. There is therefore a need to enhance processes and policies that can facilitate the capture and retention of employees' knowledge in the library.

5.2.7 ICT instruments used for knowledge management at St. Paul's University library.

The seventh objective of this study was to find out the different ICT instruments used for knowledge management at St Paul's University library. The findings of the study revealed an assortment of information and communication technology instruments that are presented in a summary form here below.

5.2.7.1 ICT Instruments adopted at St Paul's University library

The study findings revealed that St. Paul's University library had invested heavily on ICT and enabled internet connectivity through fiber optic platform. Furthermore St. Paul's University library used various information technology instruments that include online repositories, databases, computers, internet, federated search tools, integrated management systems, and networks. It however emerged that ICT was not getting fully utilised, a situation that resulted from staff and students not getting trained on available technologies such as organisation's intranet and portals.

The study findings also revealed St. Paul's University library had invested heavily on ICT and enabled internet connectivity through fiber optic platform.

In conclusion therefore, and emerging from the study findings, there is a need to encourage and train employees on how to use Information Communication Technologies available at St. Paul's University and its academic library. Additionally, there is need to implement ICT policies that would fully support knowledge management.

5.2.7.2 Real time interactions and collaborations tools in the library

The findings of this study revealed that St. Paul's University library used emails, computers and mobiles as the ICT tools that support real time interactions and collaborations. This indeed is a narrow scope of interactive and collaboration tools expected for use. Consequently therefore, St. Paul's University library was not utilising other available social media tools such as video/teleconferencing, blogs, RSS and wikis as collaboration tools in the library.

In conclusion therefore, there may be a need for St. Paul's University library to consider expanding its use of ICT real time interaction tools and collaboration tools to beyond what it currently is utilizing where appropriate.

5.2.7.3 A Process or system where new knowledge is created in the library for future use

The findings of the study revealed that there were no systems or processes for new knowledge creation at St. Paul's University library. It was apparent from the findings of the study that there was no system in place to ensure that the procedures relating to the daily tasks of the librarians are recorded and kept for future use. However, a majority of the participants felt that research work should be supported in the library not only for publication but also as a form of knowledge creation to improve the library service.

Although, the results from the interviews showed that participants believe that there were adequate technologies that could be used to capture and store knowledge, the results from the interviews indicated that this was not happening at the time of this research. In fact, even the intranet which could serve as a valuable knowledge sharing platform and repository was not regularly updated. Therefore, participants believed that more focus should be put into research and also involve all the staff in the institution to create new knowledge.

5.2.7.4 ICT tools for knowledge acquisition in the library

The study findings revealed that the internet was mainly used in the library as a tool that facilitated knowledge acquisition. This is because the internet was considered fast and convenient in acquiring information in the library. Although the study findings revealed various ICT tools used for acquiring knowledge at St. Paul's university library (such as internet, computers, library databases and emails) other tools such as groupware, blogs and mail groups had not been adopted and implemented for use as knowledge acquisition ICT tools. There is therefore room for improvement in the adoption of knowledge acquisition tools.

5.2.7.5 The ICT tools used for organising knowledge in the library.

The study findings revealed that St. Paul's University library utilised classification tools, internet and OPAC for organising knowledge in the library. Online resources such as the library of Congress were used to make work easy when organising knowledge through cataloging and classification.

It also emerged that St. Paul's University library utilised KOHA Database system which includes a suite of cataloguing and metadata services to classifying library material while relying on the library of Congress Classification system. This enables its classification practice meet

international standards. The library also is a member of KLISC, CALA, KLA professional organisation groups that presents it with an opportunity for increased and enriched collaborations.

5.2.7.6 ICT Tools that support knowledge sharing and transfer in the library

Results from the study revealed that ICT tools in place at St. Paul's University library were not sufficient in facilitating knowledge sharing since it was not regularly updated. Furthermore, it is clear that the majority of participants indicated that they used ICT tools such as electronic databases, library management systems such as KOHA, Federated search tools and websites and related systems to support knowledge sharing and transfer. Online repositories, D-space and Web 2.0 tools were on the other hand not significantly utilised. Additionally, collaboration tools such as blogs, wikis and Google Docs were not being utilised and therefore could be considered. Furthermore blogging and other social networking such as Facebook and Twitter had not been incorporated as knowledge sharing ICT tools in the library.

In conclusion therefore, the library may need to ensure that all librarians get appropriate training in the use of available knowledge sharing tools. There will also be a need to ensure that learned skills are put into practice**.** It is further suggested that St. Paul's University library put in place measures to ensure that the intranet is not only regularly updated but effectively used as a knowledge sharing tool. Other unutilized tools can also be considered for adoption.

5.2.7.7 Tools that support knowledge retention in the library.

Identified tools were documentation, training and digital repository. Documentation was seen as a useful method in transferring and retaining of knowledge in the library.

The findings revealed that ICT tools mentioned above for knowledge retention in the library were therefore, in place but with limited application in passing on vital knowledge for purposes of retaining it. There were no formal procedures for knowledge management and retention of knowledge, meaning that some of the tools were applied indirectly to knowledge management. The findings revealed that Human Resources (HR) interviews staffs who exit the institution by recording their experiences through exit interviews.

In conclusion, the concept of knowledge retention at St. Paul's University library is new to the participants therefore indicating simply that they utilise the systems to share information at an

individual level. This, therefore, calls for library management to consider implementing a stronghold in applying ICT systems in knowledge retention to avoid loss of important information. The participants furthers indicated that the university should hire experts, retirees and other specialists to train junior staff, to provide coaching and mentoring services for a reward so that knowledge will be captured and retained in the library. Therefore, St. Paul's University library should draft policies to allow the use of experts to mentor new employees; set up a section that deals with knowledge retention and involve retirees to do consultancy work and be recalled to assist when need arise.

5.2.7.8 Library innovativeness

The findings of this study revealed that the library lent laptops to students for use in the library. Additionally the library had developed and expanded in the past seven years, an indication of innovativeness. Furthermore, the library had tried to be creative in doing things for example in developments such as adoption of new technologies and making maximum use of available space at the University.

The study findings further revealed that St. Paul's University library was not as innovative as it should be. The innovations that were highlighted by the participants were linked to the growth and development of the building but not to the knowledge output. Therefore, St. Paul's University library concentrated on product innovation and not process innovation which encompassed knowledge and consequently essential in knowledge management. This is therefore an area for improvement for the academic library noting that some of the participant's responses indicate that St. Paul's University library was still in the process of setting up mechanisms that would fully support innovation. In conclusion therefore, if knowledge management is to be enhanced at St. Paul's University library then emerging mainstream knowledge management innovations should be adopted in the library.

5.2.8 Knowledge management challenges and enhancement at St. Paul's University library

5.2.8.1 Knowledge management challenges at St. Paul's University library

There was a lack of knowledge-sharing culture and knowledge capturing mechanisms in the organisation. Additionally, there was insufficient support from top management and provision of

rewards and incentives to drive and encourage knowledge sharing. There also was lack of expertise among librarians to identify knowledge resources within or outside of the library.

The study findings also revealed that there was financial constraint that hindered the implementation of knowledge management in the academic library. Additionally, insufficient ICT skills were a barrier to optimal use of new and emerging technologies.

5.2.8.2 Knowledge management enhancement in the library

From the study findings, it emerged that knowledge management got enhancement to the attendance of workshops, seminars and exhibitions by information professionals. Knowledge management was also enhanced through strengthening of external knowledge partnerships and the use of SWOT analysis.

The findings of this study also revealed that knowledge management processes were further enhanced through having trainings and sharing sessions, encouraging teamwork and job rotation in library. Additionally, knowledge management was further enhanced through taking up responsibilities to learn, create and share knowledge. This was further enhanced in an environment of trust and openness amongst academic library employees and the departments of the library and the entire institution.

5.3 Recommendations

Based on the findings of this study, this section presents recommendations from the researcher on the outcome of the study. These recommendations are based on what the researcher considers to be priority areas that can aid in achieving optimal knowledge management at St. Paul's University library. The section then concludes with the researcher giving what it considers to be the main limitation to the study.

5.3.1 Knowledge management programs

Based on the findings of the study, the researcher recommends that rigorous training programs and workshops be developed for library management committee, faculty, library staff at St. Paul's University and other knowledge stakeholders on the discipline of knowledge management. This will enable an increased level of understanding on the concepts and practice of good knowledge management practices and processes. Special emphasis on such trainings may be targeted more to groups of knowledge workers that have higher deficiencies on

knowledge management processes. This will go a long way in enabling all academic knowledge workers to fully appreciate the importance of knowledge management in their operations and thereby facilitate them and the academic library to realise goals and mission.

It is further recommended that all knowledge management processes that include knowledge acquisition, knowledge sharing, knowledge storing, knowledge retention, knowledge capture/creation and knowledge organisation be fully incorporated at St. Paul's University library. This will enable increased effectiveness and the efficiency of knowledge management at academic libraries.

5.3.2 Knowledge management policies.

Based on the findings of this study, it emerged that not all necessary policies were in place to support knowledge management at St. Paul's University library. As an example, there was a lack of policy that encouraged knowledge retention.

The researcher therefore recommends that, for St. Paul's University library to achieve good knowledge management standards, it should ensure that appropriate policies have been put in place to effectively support knowledge management. This will require an audit of policies required for ensuring a thriving knowledge management environment and then develop any lacking policies on enhancing existing policies that do not effectively support knowledge management. Incentives will also come in handy for adoption and conformance to knowledge sharing support policies in academic libraries.

5.3.3 Technology

Based on the findings of this study whereby technologies relied upon for knowledge management in the library was found to be limited, the researcher recommends an increased use of advanced technologies. Some of the advanced technologies that are recommended for increased use at St. Paul's University library and its parent organisation are video conferencing technologies, social media tools, wikis and D-space.

It is further recommended that ICT trainings be done for relevant knowledge workers in the academic library and its parent organisations. Such trainings should be developed to comprehensively include sufficient content on the use of all knowledge management technology tools in the library. Beyond the trainings, it will also be desirable for the library and its parent

organisation to ensure that there are feedback mechanisms for reviewing and monitoring the adoption of gained knowledge on knowledge management. Rewards based on effective and efficient use of such technologies may also come in handy.

5.3.4 Establishment of knowledge management repository

Based on the findings of the study, it emerged that while there was a knowledge repository at St. Paul's University library, this existence was not known to all. Consequently utilisation of the organisation's institutional repository was low.

The researcher therefore recommends that for St. Paul's University library knowledge repositories to fully benefit its institution, the parent institutions should carry out regular publicity campaign programs targeting all its existing and potential stakeholders. Such campaigns should carry messages of knowledge repository existence, who can utilise such a repository, how to utilise such a repository, when to utilise such a repository and the benefits of utilising such a repository. To further enhance on publicity campaigns effectiveness and subsequent utilisation, the researcher recommends introduction of incentives for outstanding utilisation of the academic library repository.

5.3.5 The case study approach limitation

This research adopted a case study approach in its endeavor of trying to unravel the concept of knowledge management at St. Paul's University library setup. Based on the objective of this study, which was to gain deep insights into knowledge management processes in the library, the case study approach to the study was a perfect choice. The findings of the study therefore lived to the expectations of the approach used.

The case study approach however presents a limitation in that the results of this study may not be generalised to other academic libraries due to its nature of being context specific. As a result therefore, when the main objective of such a research is to get findings that can be generalised, then a survey becomes a better research approach.

5.4 Areas for further study

Since this study was a context specific case study based on St. Paul's University library, there is need to undertake additional case studies on other academic libraries contexts within Kenya. This will allow for comparison of studies among academic libraries and which would enrich the

knowledge management body of knowledge in Kenya. Such studies can also be extended to other types of libraries that include special libraries.

To provide for study results generalization, the researcher recommends that academic libraries surveys be undertaken on the study of knowledge management processes in Kenya. This approach would give findings that can be generalised to the entire academic library population in Kenya. Such studies can also be extended to other parts of Africa and the world at large.

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APPENDIX A: INTERVIEW GUIDE

GUIDING QUESTIONS FOR INDIVIDUAL INTERVIEWS

Dear All,

My name is Emily Sirorei and I am pursuing my Master's degree in Library and Information Science at the University of South Africa. Part of the requirements for this degree is that I should undertake field research in an area of interest. My topic of research is Knowledge Management Processes at St. Paul's University library in Kenya. I request that you help me in this direction by providing the information that I need. Please be as accurate as you can. The information so collected will not be used for any other purpose apart from this research. I will not disclose your identity and the information shall be treated with utmost privacy and confidentiality.

Thank you.

Section 1: Background information

Job designation……...

Department…….

Gender ……...

Highest Level of education……

How long have you worked for the organisation

[ ] 0-4years [ ] 5-9 years [ ] 10-14 years

[ ] 15-19 years [ ] Over 20 years

KM processes include the creation, acquisition, organisation, storing, sharing, retention and effective use of knowledge in an organisation.

Section 2: Level of Knowledge Management Awareness

1. Are you aware of the term knowledge management?

……
……

Section 3: Knowledge Creation

2. How is new knowledge created at St. Paul's University library?

……
……

3. Does the library create knowledge independently without external input from third parties such as faculty?

……
……

Section 4: Knowledge Acquisition/Capture

4. How is knowledge acquired at St. Paul's University Library?

……
……

5. Are you actively involved in knowledge acquisition at your place of work?

……
……

6. Are there written policies on knowledge acquisition in the library?

……
……

Section 5: Knowledge Organisation

7. How is knowledge organised in the library?

……
……

Section 6: Knowledge Sharing or Transfer

8. How is knowledge at the library transferred?

……
……

9. To what extend is knowledge sharing encouraged and supported in the library?

……
……

10. What measures have the library and put in place to encourage a culture of knowledge sharing?

……
……

11. Do you think the environment is conducive for sharing of information and knowledge?

……
……

12. Does the library have an incentive package for sharing of new ideas or innovations for employees? Explain

……
……

Section 7: Knowledge Retention

13. How is knowledge retained at St. Paul's University Library?

……
……

14. Is there a knowledge retention policy in the library?

……
……

15. What mechanism has the library put in place in order to retain employee knowledge?

……
……

16. Is there an institutional repository in the library (central place for knowledge) that is accessible to St. Paul's University employees?

……
……

Section 8: Knowledge Management Technology

Knowledge management technology refers to the technologies that an organisation may use to support knowledge management processes.

17. What information technology instruments has the library adopted in order to increase opportunities for managing knowledge management processes?

……
……

18. What ICT tools support real time interactions and collaborations among the employees in the library? Explain.

……
……

19. Is there a process or system where new knowledge is created significantly for future use and for the benefit of the organisation? Kindly explain.

……
……

20. What ICT tools /instruments are used to facilitate knowledge acquisition in the library? Explain.

……
……

21. What are some of the ICT tools used for organising knowledge in the library?

……
……

22. What are the ICT tools that support knowledge sharing and transfer? Please explain.

……
……

23. What ICT tools support knowledge retention in the library?

……
……

24. Would you consider the Library as being innovative? If Yes, in what ways?

……
……

Section 9: Knowledge Management Challenges and Enhancement

25. What are the challenges of knowledge management at St. Paul's University library?

……
……

26. How can knowledge management be enhanced at St. Paul's University library?

……
……

THANK YOU FOF YOUR COOPERATION!

APPENDIX B. Permission letter to collect data at St. Paul's University library

DVC Academic Affairs,
St Paul's University,
P. O. Box, Private Bag -00217,
Limuru. Kenya.

Thru'
The University Librarian,
St Paul's University,
P. O. Box, Private Bag -00217,
Limuru. Kenya.

Approved and forwarded
9/9/16

9th September, 2016.

Dear Madam,

RE: PERMISSION TO COLLECT DATA

I hereby request for permission to collect data for my Masters Dissertation with the topic: **Knowledge Management Processes at St Paul's University Library**. The main purpose of this study is to investigate the types of processes involved in knowledge management practices at St Paul's libraries and suggest ways by which these processes may be enhanced in order to promote efficiency and effectiveness in knowledge management. The target population for the data collection includes the library committee members, faculty staffs and librarians.
Interviews with the help of an interview guide will be used as the data collection tools. The study is in line with the requirements of the Research and Ethics Committee of The University of South Africa (UNISA).

Thanking you for participation,

Best regards,
Emily Sirorei.