

Research Practices of Academics in an African University Setting: The Case of the University of Zambia

By

Ellah Twaambo



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Supervisor: Mr. Christiaan Maasdorp.

Department of Information Science

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DECLARATION

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ABSTRACT

The thesis investigates the research practices of academics and how they are supported by the academic library in an African university setting by specifically focusing on the University of Zambia.

The information age has opened up new ways for conducting research that involves changing the approach of academics to the whole research process, necessitating a degree of information management and a changed role for library involvement. However, these changes brought with it increases in cost of access and infrastructure which put institutions in developing countries under significant pressure.

In light of these challenges, the thesis seeks to establish how successful researchers in an African university setting are conducting their research and navigate these challenges. The research design is qualitative and collected data using a quota system random sampling method to select participants meeting certain minimum criteria for the interviews. The narrative interview section was used to explore the views of the people with deeper insight into their specific needs and problems. The findings indicate that researchers at UNZA use their own resources to fund their research activities (apart from a few cases where project funding was available). The research activities are conducted without regard or in some cases even awareness of the formulated research policy of UNZA that is supposed to direct research activities. The respondents mainly conduct research based on personal interest, experience and for perceived promotional gains. Researchers at UNZA share knowledge and information through conferences, workshops, research publications and social platforms such as LinkedIn. The knowledge sharing is exhibited through research collaboration mostly at departmental level. Collaboration in research at UNZA takes place for reasons that include mentoring, sharing expertise, and authenticity. Researchers use both print and electronic resources, but struggle with print resources becoming obsolete, whilst the electronic resources are often unavailable due to inadequate subscription by the institution. The university library subscribes to database information for at least 50000 electronic journals, but a very small number of those are available full-text. In fact full-text access is limited to Science Direct, JSTOR, and Cambridge Journals databases. This highlights the discrepancies that exist in research practices globally between researchers from the developing nations and those of developed countries.

Notwithstanding these challenges, UNZA has not fully utilized its knowledge management strategies to create a favourable research environment in spite of funding difficulties. ICT infrastructure is not fully deployed, but the processes are in place. It is recommended that UNZA establish a research division that can enforce the research policy and support the research activities at the university.

OPSOMMING

Die tesis ondersoek die navorsingspraktyke van akademici en hoe die akademiese biblioteek hierdie praktyke kan ondersteun in 'n Afrika-universiteitsomgewing deur spesifiek op die geval van die Universiteit van Zambië te fokus.

Die inligtingsera het nuwe maniere om navorsing te doen moontlik gemaak, wat die akademiese benadering tot die hele navorsingsproses verander en 'n mate van inligtingsbestuur en 'n ander rol vir biblioteekbetrokkenheid tot die navorsingsproses vereis. Hierdie veranderinge het egter gegaard gegaan met die 'n toename in koste van toegang en infrastruktuur wat universiteite in ontwikkelende lande onder groot druk plaas.

In die lig van hierdie uitdagings, probeer die tesis vasstel hoe suksesvolle navorsers in 'n Afrika-universiteitsomgewing hul navorsing uitvoer en hierdie uitdagings navigeer. Die navorsingsontwerp is kwalitatief en versamel data met behulp van 'n kwotastelsel ewekansige steekproefmetode om deelnemers te kies wat aan sekere minimum kriteria vir die onderhoude voldoen. Die narratiewe deel van die onderhoude is gebruik om die menings van die mense te ondersoek met dieper insig in hul spesifieke behoeftes en probleme. Daar is bevind dat navorsers by UNZA hulle eie hulpbronne gebruik om hul navorsingsaktiwiteite te finansier (afgesien van enkele gevalle waar projekbefondsing beskikbaar was). Die navorsingsaktiwiteite word sonder inagneming, of in sommige gevalle selfs sonder bewustheid, van die geformuleerde navorsingsbeleid van UNZA wat veronderstel is om navorsingsaktiwiteite te rig. Die respondente voer hoofsaaklik navorsing uit op grond van persoonlike belangstelling, vorige ondervinding en vir waargenome bevorderingsmoontlikhede. Navorsers by UNZA deel kennis en inligting deur middel van konferensies, werksinkels, navorsingspublikasies en sosiale platforms soos LinkedIn. Die kennisdeling vind neerslag in navorsingsamewerking meestal op departementele vlak. Samewerking in navorsing by UNZA vind plaas vir redes wat mentorskap, deel van kundigheid en outentiekheid insluit. Navorsers gebruik beide gedrukte en elektroniese bronne, maar sukkel omdat drukhulpbronne toenemend verouderd word, terwyl die elektroniese bronne dikwels nie beskikbaar is nie as gevolg van onvoldoende inskrywing deur die instelling. Die universiteitsbiblioteek is ingeskryf op databasisinligting vir minstens 50000 elektroniese tydskrifte, maar vir 'n baie klein deel daarvan is volledige teks beskikbaar. Trouens, volle teks toegang is beperk tot Science Direct, JSTOR, en Cambridge Journals

databasisse. Dit beklemtoon die verskille wat bestaan in navorsingspraktyke wêreldwyd tussen navorsers van die ontwikkelende lande en dié van ontwikkelde lande.

Nieteenstaande hierdie uitdagings het UNZA nie sy kennisbestuurstrategieë ten volle benut om 'n gunstige navorsingsomgewing te skep ten spyte van die finansieringstekorte nie. IKT-infrastruktuur is nie ten volle ontplooi nie, maar die prosesse is in plek. Die tesis beveel aan dat UNZA 'n navorsingsafdeling instel wat die navorsingsbeleid kan afdwing en die navorsingsaktiwiteite van die universiteit kan ondersteun.

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DEDICATION

I dedicate this thesis to my beloved mother Rachel Hing'andu who kept her promise of standing by my side all the way. Her constant love and emotional support gave me the drive to complete my research. She reminded me that education is the best equalizer in life. Mum, I am glad that you have been with me this far. I owe this to you.

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LIST OF ACRONYMS

ICTs	Information Communication Technologies
IHERD	Innovation Higher Education and Research for Development
INESOR	Institute of Economic and Social Research
KENET	Kenya Education Network
KM	Knowledge Management
UACES	University Association for Contemporary European Studies
UK	United Kingdom
UNESCO	United Nations Educational Scientific and Cultural Organization
UNESCWA	United Nations Economic and Social Commission for West Africa
UNICEF	United Nations International Children's Emergency fund
UNZA	University of Zambia
OECD	Organization for Economic Co-operation and Development
USA	United States of America
RLUK	Research Libraries in the United Kingdom
RIN	Research Information Network
SECI	Socialization, Externalization, Combination, and internalization
SPSS	Statistical Package for the Social Sciences
ZALICO	Zambia Libraries Consortium

CHAPTER ONE

1.1. INTRODUCTION

This thesis focuses on the research practices of academics at an African university: a case of the University of Zambia. The research further investigated the extent to which academic libraries in African universities support research and established the channels used to transfer and share knowledge. African universities have been disadvantaged geographically in terms of technological and economic development. Universities found in developed countries according to various literatures indicate that most of them have well developed and technologically advanced academic libraries that support research. It is from this understanding that the African scenario was to be targeted and be researched on using the University of Zambia experience.

Managing knowledge is one most difficult thing that most organizations/ institutions have failed to do in order to compete favourably in the new era of knowledge economy. Only a few organizations and institutions that have the capacity to manage knowledge have been successful. Knowledge is becoming a more central force in the competitive environment. Neef (1998) quoted Nonaka (1991) who commented that in an economy where the only certainty is uncertainty, the one sure source of lasting competitive advantage is knowledge. Drucker (1993) added that in fact, knowledge is the only meaningful resource today. Knowledge therefore is at the centre to manage the current knowledge economy. Knowledge is defined as a justified belief that increases an entity's capacity for effective action. (Huber 1991; Nonaka 1994) knowledge can also be viewed from other several perspectives that can bring out different meanings besides what has been stated such as a state of mind, an object, a process, a condition of having access to information or a capability. Therefore, knowledge is a "state or fact of knowing" with knowing being a condition of understanding gained through experience or study or the sum range of what has been perceived, discovered or learned (Schubert et al 1998). In this context, knowledge can be said to be inclined to an individual's capacity or abilities to take action. Hence, it is the varied potentialities in individuals that can bring about change in organizations and make them more competitive.

Since knowledge is viewed differently by different scholars, it is clear that even the management process of knowledge comes out with different perceptions. Carlson et al (1996)

in this respect observed that if knowledge is viewed as an object, or is equated with information access, then knowledge is a process and the implied knowledge management focus is on knowledge flow and the process of creation and distribution of knowledge. As such knowledge management should be viewed as a process of capturing people's capabilities and what they know which should be codified and shared for others to learn. It should also be mentioned that the misunderstandings of the conceptual terms and processes involved in managing knowledge is what brings out the confusion in organizations and institutions as there is no clear understanding of what should be managed and how to manage it. These are the challenges that this research endeavoured to discover.

The issues lying behind this study were to examine how knowledge is shared by academic researchers and investigate other channels academics use to collect data for research. This was in order to assess the value of knowledge management practices in improving research output of African universities. The assumption in this regard is that organizations and institutions that have better knowledge management practices are rendered an advantage in doing organizational business than those that are not. Therefore, research institutions that have managed their knowledge well have better research environments for their academics. This research contends that these perspectives have justifiable grounds to argue in this direction for what is involved is similar to the underlying findings.

The research will in this regard use the theoretical perspective of Nonaka the SECI model of knowledge management to elaborate on the knowledge sharing in organizations and how best practices can help bring out the value of knowledge management in research institutions. The activity of research cannot be successfully attained without the organization culture inculcated in every member of the organization. Organizations are systems that work and operate as a whole. There is interdependence among members in order to complement each other's activities in order to attain the core business of the institutions which is research. The understanding of the theoretical perspective creates a platform for discussing the research findings which sought to meet the objectives of the study.

1.2. BACKGROUND OF THE STUDY

Universities are drivers for economic change. This is because of their role in producing high skilled manpower and generation of new knowledge through research. Olsson and Cooke (2013) in an OECD/IHERD report advanced the importance of research in industrialized

countries and the discrepancies existing with research universities of developing worlds. It was observed that research Universities of industrialized countries usually dominate the global ranking tables in contrast with their counterparts in the middle and low –income countries. This is because of the great importance attached to research activities and innovation for the economic development of an industrialized economy. Despite developing nations having poor policies regarding research and development, they still attach great importance to research in their national governments as it is still part of their active community responsibility to promote research and learning.

The general performance of Africa on the global research is not impressive. According to Zeleza (2014;1), Africa’s performance in science, technology and innovation league tables lags behind on key indicators such as the gross domestic expenditure on research and development, number of researchers and share of scientific publications and patents. However, there was a growth of publications in 2008 at a rate of 66.9% in comparison with the world growth rate of 34.5%. The motivating factor in academic publications is a reason to be established through research. What is clear is that African research universities face challenges in research compared to their counter parts in the developed nations.

The University of Zambia being in an African setting was targeted for this research. The University of Zambia was established in 1966 under the act of parliament 66 that allowed for the establishment of a higher learning institution in the country. The motto for the University is *service and excellence* with the core business outlined in its mission statement of *providing relevant higher education through teaching, research and community service* (UNZA; 2013-2017). The institution has two campuses which include the main campus and Ridgeway campus. The main campus is situated along the great east road, 6km from the central business district in town while the Ridgeway campus is situated along John Mbita road, 4km south east of Lusaka opposite the University Teaching Hospital. (www.unza.zm)

The University of Zambia as a higher learning institution operates under the umbrella of the government as it is regarded as a public university. The existence of the university was a government initiative which came as a post independence creation whose main mandate was to produce the high calibre of human resource. The purposes of public university was to; provide university education, promote research and advancement of learning, and disseminate knowledge without discrimination and providing facilities required to the university community. In this regard, government provides policy direction as well as

funding to supplement the university budgetary funds for its operations. The financial assistance is given in form of grant as well as in form of bursary for tuition fees paid for the vulnerable students. These grants are given on a monthly basis but sometimes due to government's budget overrun, they are delayed to an extent where months are skipped without remitting the grants. Worse still, the bursaries for tuition fees that the government remits to the institution is usually delayed creating an unbearable situation where the government accrues arrears. Tuition fees for students who are both on self sponsorship and government bursary are a major source of income for the running costs of the institution.

In addition, the University of Zambia's main mandate is to provide a research environment where the researchers are supposed to discover and innovate. The university in this regard has a critical responsibility to ensure that knowledge is generated and disseminated for the development of the nation is dependent on its new innovations. Research at UNZA is carried out by the academic staff and librarians who fall under the researcher's category. They are mandated to conduct research and make publications out of their output.

The University of Zambia has an institute that manages economic and social sciences research called INESOR. The basic aim of the institute is to contribute to the knowledge, formulation of policies and building individuals and institutional capacities. The institute however faces challenges relating to infrastructure, support systems and finances of managing research activities in the University.

The University of Zambia besides having the research institute for research has departments like the library that exists to support the teaching, research and outreach programmes. Academic libraries are at the centre of research activities for they play a critical role in the collection, organizing and provision of relevant information to researchers. In the last few decades, there has been a shift with regards to information access due to technological advancements that has led to innovations in the area of information communication technologies (ICTs). Research in this digital age can be done anywhere provided the technology has been upgraded. It is therefore important to note that technology in this digital age has revolutionized not only in the way it is packaged, processed, stored and disseminated but also how researchers seek and access information. Therefore, better research environment is determined by how well technologically advanced the research environment is updated. This will determine the efficiencies in information dissemination which are all dependant on how well organizations manage their knowledge through knowledge management strategies.

Academic libraries in this regard have a challenge to survive in the current competitive research environment by upgrading their information sources from ordinary print collection to a digital collection. The University of Zambia library in this regard has had challenges in meeting the new library demands. The academic library has internet access that does not support the university population due to low bandwidth. The computer laboratory has very few computers to enhance access. The library has subscribes to some electronic resources although not fully as this is done through the library consortium where resources have to be put together in order to access a certain package of databases that will benefit the members. The idea of group subscription is to share costs since institutions have limited finances. The approach creates some complications such as inconsistencies in e -resource provisions as the institution has to wait for other member institutions to subscribe so that the subscriptions are made as a group.

Despite the challenges, the University of Zambia as an institution is committed to providing a favourable research environment which is stated in its strategic plan which states that, it will support various types of research including postgraduate, commissioned and non responsive research in various crucial areas like education, agriculture, health, environment and natural resources, energy and poverty reduction which contribute immensely to national development. (UNZA 2013-2017). The organizational will is critical in addressing research activities in any research institution. Nevertheless, most of these plans are downcast as there is too much reliance on government funding leading to under budgeting of institutional programmes like research. As such, government remains with too much authority to dictate policy direction which affects the institutional operations leading to inefficiency. This is a common problem that is associated with most African universities.

The aforementioned challenges has led to research practices of academics in African universities to be disadvantaged in terms of accessing expensive digital library information from established sources such as Google scholar and Mendeley to produce their research as compared to European, American, or Asian academics that have access to all such sources. Some of the challenges associated with these discrepancies are as a result of lack of proper knowledge management strategies that would address the challenges experienced in the African universities. Therefore, Knowledge management strategy is important in African universities for it provides an outline of the organizational culture of knowledge sharing and transfer within the universities.

It is from this understanding that it has been observed that research practices among academics in higher learning institutions differ worldwide in relation to information access or data collection and the way knowledge is shared. Some of the causes are associated with the technological lags that affects generation, transfer and sharing of Knowledge. Evidence from the various knowledge management literatures indicates that these discrepancies are due to geographical, political, cultural and social conditions that prevail in the localities of such universities. It is from such discrepancies that a research was undertaken to investigate the research practices of academics in an African university setting with a case of the University of Zambia.

The research study aimed at investigating research practices of academics at the University of Zambia by establishing their research behaviours of data collection, knowledge sharing and transfer and how the entire research output is managed. Information needs change with time and requires technological advancements in terms of transfer and knowledge sharing to respond to the demands of the researchers who rely on new information all the time. When the academic libraries are unable to provide proper channels for knowledge transfer and sharing to the researchers, the quality and validity of research is compromised.

Conducting this research illuminated the challenges faced by the researchers in African universities and established the extent to which knowledge is shared among researchers and channels used to transfer that knowledge. This offered an opportunity to offer alternative recommendations that can address the challenges faced by the academic researchers in African universities. The recommendations are hoped to provide a platform for creating a better research environment for African researchers. This research therefore acts as a gateway to new research practices that will support future university research and innovation at institutional and national level.

1.3. STATEMENT OF THE PROBLEM

As the global environment has revolutionized into a knowledge economy, researchers face challenges in terms of approaches, sources of information to conduct research and how to disseminate their research output. How then are the research practices of academics in an African university setting which is faced with many challenges that are geographical, social, economic and political in nature? In this kind of environment, it is surprising on how research can be conducted successfully by many academics. Researchers that are better placed in the

world are those that are found in universities that have the intellectual capability to create, retain and share knowledge and have the financial resources to support research for innovation. Mostly, these are in developed countries. The developed countries have managed their knowledge by setting up advanced technologies that support knowledge sharing and transfer with the support of their governments giving them a better research environment. Research is an activity of discovering new knowledge much needed for innovation. It is through this realization that industrialized countries have invested heavily in research and development to get the maximum benefits of research. Most of the research activities are conducted in universities which exist to undertake this role for the development of their respective countries. African universities in terms of creating a better research environment have not lived up to their expectations in the knowledge economy due to reasons yet to be established through research. It is for this reason that a research was conducted to investigate the research practices of academics in an African university setting with a case of the University of Zambia.

1.4. PURPOSE OF THE STUDY

The purpose of this research study was to investigate the research practices of academics at the University of Zambia by establishing the role of academic library in research as well as the knowledge sharing and transfer and how the entire research output is managed.

1.5. RESEARCH OBJECTIVES

The **general objective** of the study is to investigate the research practices of academics in an African University setting a case of the University of Zambia.

Specific objectives of the study were;

- a) To examine how knowledge is shared by academic researchers
- b) To investigate the role of academic libraries in promoting research in a university
- c) To assess the value of knowledge management in improving research

1.6. RESEARCH QUESTIONS

To reach these objectives, the following research questions were employed:

- a) What are the research practices of academics at UNZA?
- b) How is knowledge shared by academic researchers at UNZA?
- c) What is the role of academic library in supporting research in a university?
- d) What is the role of knowledge management in research activities?

1.7. SIGNIFICANCE OF THE STUDY/ RATIONALE

This research is intended to be a gateway to a better research environment of most academics in African universities. Research in the knowledge economy is a major driving force for innovation in all production activities and service delivery and as such it must be conducted in a favourable environment to ensure consistency and efficacy of the studies to be researched on. This research study will also offer a platform upon which challenges faced by the African academics will be addressed.

1.8. SCOPE OF THE STUDY

The research was limited to the University of Zambia researchers referred to as academics that represented a university in an African setting. The selection of academic researchers that were interviewed was based on quota sampling method which was characterized by determining parameters of the population that was sampled such as the number of years they were engaged in research activities and the department where they belonged to. The type of research was qualitative that required the researcher to interpret the data by analyzing the themes of the data and drew conclusions about its meaning. The interview method as mode of inquiry was selected because it addressed key issues that had to do with both explicit and implicit knowledge of the organization under study. In particular; the research practices at the University of Zambia, the knowledge management practices such as knowledge sharing, sources of data for research as well as the research environment as a whole. Further, interviews allowed participants to provide historical information and the researcher was able to take control of the line of questioning. Since interviews were open ended, the participants brought out adequate information that provided an opportunity to collect the much needed information in line with the research study. Therefore, it was prudent to interview a sizeable number and that is why only 20 academics were targeted.

1.9. THEORETICAL FRAMEWORK

In order to enhance data analysis, two knowledge management frameworks were employed to facilitate the analysis of the research practices of academics in an African university setting with reference to the University of Zambia. Nonaka's SECI model and Spenders framework were both adopted for this research for they are based on knowledge creation. The two frameworks are interrelated although Spenders framework makes an addition to Nonaka's views by advancing that knowledge besides being created by an individual, there is

also need to consider where it resides.(Newell, 2000). The two frameworks are vital in this study as they represent what exists in research institutions where knowledge is generated through research. Nevertheless, this process can be of no value if the academic library is not brought in the picture as custodians of the knowledge that is created and disseminate it to the users who may want to access it.

Nonaka (1994) considers knowledge as coming from two strands which is tacit and explicit knowledge. His view is that tacit knowledge is highly personal and hard to formalize making it difficult to communicate. Nonaka's perspective is that tacit knowledge is deeply rooted in individual's actions and experiences as well as ideals and values. Therefore he concluded that tacit knowledge contains two types of components which include the skills and the mental models .The mental model is cognitive in nature and generates our images of the surrounding reality. It is against this background that Nonaka (1994) considers the two dimensions for knowledge creation taking the epistemological dimension and the ontological dimension. The epistemological dimension considers the conversion of knowledge from tacit to explicit levels and from explicit to tacit where as the ontological view looks at the conversion of knowledge from individuals to groups and further to organizations which when combined gets a spiral model (SECI) for knowledge creation and processing.

The SECI model by Nonaka and Takeuchi (1994) is a four kind model of knowledge conversion - Socialization, Externalization, Combination and Internalization. In his framework, Nonaka in (Newell, 2000) described knowledge creation as an upward spiral process because it starts with the individual to the organization or group and sometimes reaching the inter-organizational level. The model has a series of steps to follow in order to create knowledge of which an individual is at the centre of this creation. The emphasis of knowledge existing only at the individual level is a fundamental difference in Nonaka's framework. This framework in a research institution depicts the researcher who is the source of knowledge. When research is codified, it is deposited in the institutional repository for dissemination. The process will be repeated creating a spiral routine.

Nonaka (1994)'s SECI model enables organizations to identify and anticipate gaps where they exist and make changes to areas that need such attention. Socialization (from tacit to tacit knowledge) in Nonaka's views occurs when tacit knowledge is shared between individuals according to their shared experiences. Such conversion occurs through face to

face interaction (Posner, 2009) and working in the same environment. Most researchers in universities share this kind of knowledge when they do collaborative research in order to share expertise. Same environment may mean same universities or same kind of research activities. The expertise may cut across universities provided the line of research is similar. The model is as on the diagram below.

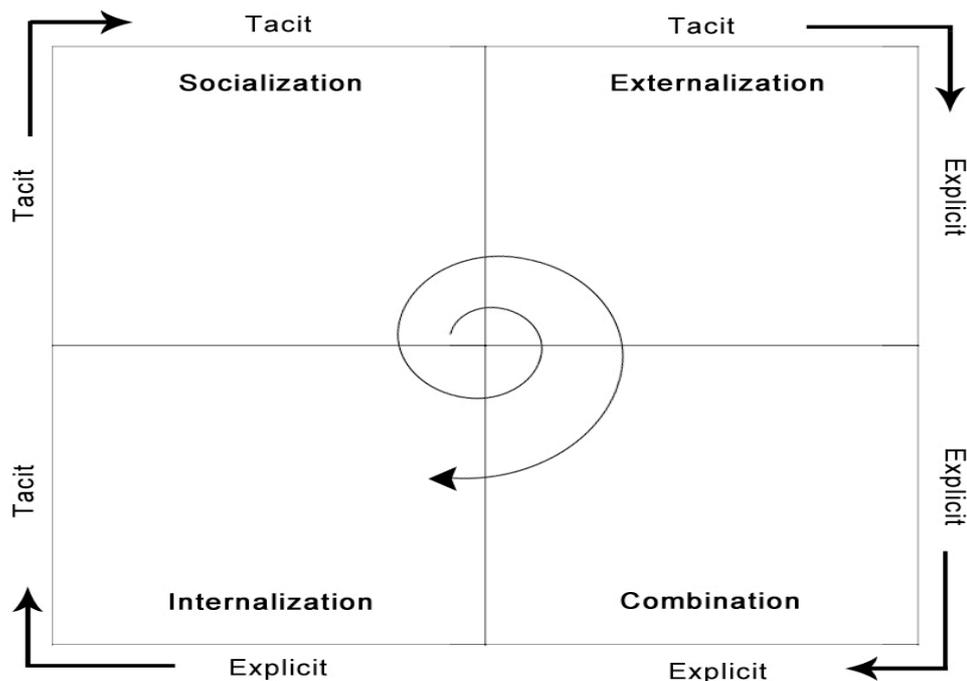


Figure 1; the SECI Model after Nonaka (1994) From Newell (2000)

Further, Externalization (from tacit knowledge to explicit knowledge) occurs when an individual's tacit knowledge is translated into comprehensible forms that can be understood and expressed by others. Knowledge has been successfully transferred when tacit knowledge becomes explicitly stated, often through exchange mechanisms such as a two way dialogue, active listening and visual depiction of ideas and concepts (Newell, 2000 cited Nonaka & Konno, 1998). According to Posner (2009), it is at this stage of externalization when the knowledge transfer gap is most evident when tacit knowledge is converted into explicit knowledge.

Combination (from explicit knowledge to explicit knowledge) occurs when individuals or groups exchange and combine their different bodies of explicit knowledge through social interactions thereby amplifying the explicit knowledge. (Nonaka and Konno 1998) observed that this conversion relies on three processes which are collecting and combining externalized

knowledge; disseminating this knowledge; and revising and reconceptualising the explicit knowledge to make it more usable and understandable. Posner (2009) identified examples of combination which he stated include; academic forums, research processes, face to face meetings and audio or web based conversations.

The last action in Nonaka's framework is internalization. Internalization (from explicit knowledge to tacit knowledge) occurs when newly created explicit knowledge is converted into the organization's tacit knowledge (Nonaka & Konno, 1998). He observed that this process can occur at an individual, group or organizational level. This explicit knowledge needs to be embodied in action and practice and internalized through learning by doing. Several scholars acknowledge that for an organization to have a positive impact in its operations there must be these processes of knowledge management cycle that will help organizations have a systematic process of knowledge management for a competitive advantage. The knowledge management cycle involves knowledge creation, codification, sharing and innovation. At the knowledge creation stage is where knowledge is generated which has to be captured for codification and then transferred for sharing in order to enhance innovation.

Spender's framework makes an additional point to what Nonaka observed. Spender (Newell, 2000) stressed that, in order to understand where organizational knowledge comes from, we need to be concerned with not only types of knowledge but also where it resides as well as incorporating tacit and explicit knowledge. This is contrary to Nonaka's view which is more concerned with the individual who is at the centre of the knowledge creation but Spender considers other external players like where knowledge will reside after it has been transformed into explicit. His framework makes a distinction between individual and social (collective knowledge) which is a distinction from Nonaka's views. Spender considers organizational knowledge as resulting from the interaction between all the four types of knowledge. Combining concerns about what knowledge is such as tacit or explicit and where it resides (individual or social) means that the four rather than two different types of knowledge can be identified. These include; individual/explicit (conscious); Individual /implicit (automatic); Social /explicit (objectified) and social /implicit (collective).

The expression of spender in research organizations acknowledges the importance of the academic libraries where knowledge resides. It is assumed that libraries are essential

departments in complimenting the University existence in promoting research and teaching. His assertion is that social knowledge can exist beyond the individual. Hence it is possible to make a contrast between the explicit knowledge that individuals feel they possess and the collective knowledge on which this explicit knowledge actually stands and the interaction of the two (Newell, 2000 cited Spender, 1998; 238). However, Spender did not highlight the processes on how knowledge is created which was contrary to Nonaka's approach.

Conscious	Objectified	EXPLICIT
Automatic	Collective	
SOCIAL	INDIVIDUAL	IMPLICIT

Figure 2; Spender's Locus of Knowledge; From Newell, (2000)

The two frameworks Nonaka's and Spender's are practical models vital in research institutions for they help elaborate the processes of knowledge management more especially knowledge creation in a research environment. Researchers are at the centre of knowledge creation or generation for they hold the tacit knowledge which when captured is stored in libraries for storage. The library disseminates the new knowledge which when codified changes into Explicit Knowledge. The researcher being actively involved in generation of new knowledge will have access to other explicit knowledge created by others to generate new knowledge making the whole process move in a spiral mode. The views of Spender's framework in recognizing the importance of where knowledge resides is of importance in the University library activities. The innovativeness of an organization arises when there is free flow of information for decision making. It is from such perspectives that this research adopted the two frameworks for they bring out similar observations to the research topic under study.

1.10. DEFINITION OF TERMS

1.10.1 Research

Research is an activity that is involved in the accumulation of significant amounts of knowledge and its results can be of lasting value for many people. In general, it is the gathering of data, information and facts for the advancement of knowledge. (Hermerén, 2005)

1.10.2. Academics

People involved in the scholarly activities of a school or University as classroom studies or research projects. The term academic is an adjective term relating to a place of learning especially a college or university. (Ibrahim, et al. 2012)

1.10.3. Research Practices

The research practices are behaviours that go with the processes of research in general by the people involved. The research practices cover a wide range of activities and behaviours which include; methods of conducting research, ethical considerations, methods of accessing research information, how research findings are shared and published, procedures involved in research activities and other procedures involved relating to conducting research in general.

1.10.4. Research Collaboration

The dictionary definition of collaboration suggests the working together of individuals to achieve a common goal. Thus **Research Collaboration** could be defined as the working together of researchers to achieve the common goal of producing new scientific knowledge.

Research collaboration would also mean distinguishing collaborators from the researchers. The collaborators include the following;

- a) Those whose work on the research project throughout the duration or for a large part of its duration for a large part of it, or who make frequent or substantial contributions
- b) Those whose names or posts appear in the original research proposal.
- c) Those responsible for one or more of the main elements of the research
- d) Those responsible for a key step
- e) The original project proposer and or fundraiser, even if his or her main contribution subsequently is to the management of the research rather than the research.

Research Collaboration therefore comes about when two or more people agree to work

together for a common goal of generating new knowledge. (Katz and Martin, 1995)

1.10.5. Academic Libraries

An academic Library is any library servicing the needs of an educational institution, offering courses beyond the elementary or secondary level which culminate in a degree. (Wiegand and Davis, 1994). It can also be defined as any library attached to a higher education institution which serves two complementary purposes to support the school's curriculum, and to support the research of the University faculty and students.

1.10.6. Knowledge

Knowledge is defined as a justified belief that increases an entity's capacity for effective action (Alavi & Leidner 2001 cited Huber, 1991: Nonaka 1994). Depending on the perspective it is viewed from, knowledge can also mean a state or fact of knowing. Another view defines knowledge as an object (Carlson et al. 1996). This perspective looks at knowledge as anything that can be viewed as a thing to be stored and manipulated. The concept of knowledge is multidimensional for it can mean different things' depending on the context it is used.

1.10.7. Knowledge workers

Knowledge workers are defined as workers whose main capital is knowledge such as academics. Knowledge workers are differentiated from other professionals for they conduct none routine jobs. Each job requires the application of their tacit knowledge that demands for creative thinking in order to solve the problem at hand and this will qualify them to be considered knowledge workers. (Davenport, 2005)

1.10.8. Tacit Knowledge

Kim (2000) defines tacit knowledge as knowledge that consists of the hands –on skills, best practices, special know-how, heuristics, intuitions and so on. Tacit Knowledge can be considered as knowledge that is unarticulated and tied to the senses, movement skills, and physical experiences. This is so because it is found in the minds of human stakeholders as it is attached to individual skills and capabilities. However, Tagger (2005) views tacit Knowledge as a prime characteristic of an expert who can act, work and make judgements without having to directly reference the declarative knowledge behind the decisions. This

implies that the individual has the capacity to act with personal skills and perform the tasks without any challenges. For this reason, tacit knowledge is intuitive and cannot be communicated. It is knowledge that can be acquired through practical experience in the relevant context. Tacit knowledge therefore qualifies to be contrast, personal contextual and distributive.

According to Polanyi (1958; 49) the only way to transfer this kind of knowledge is through a specific kind of social interaction similar to apprenticeship relationships. This means that the transfer of tacit knowledge is limited to the social context.

1.10.9. Explicit Knowledge

Explicit knowledge according to Sanchez (2005) is a rule based knowledge that is used to match actions to situations by invoking appropriate rules. Tagger (2005) stated that, explicit knowledge is knowledge that is learned and is consciously accessible by the holder. From the two observations, explicit knowledge is knowledge that is accessible and can be codified and easily shared without the knowing subject. Codification of knowledge as observed by Neef et al (1998:117) implies that knowledge is transformed into information that can easily be transmitted through information infrastructures. It is a process of reduction and conversion which renders especially easy the transmission, verification, storage and reproduction of knowledge. The codified knowledge can be stored in objective form. Therefore, explicit knowledge can be generated through logical deduction and acquired through practical experience.

1.11. DELIMITATIONS AND LIMITATIONS OF THE STUDY

This study confined itself to interviewing the academic researchers in an African university setting that was identified and in this case “the university of Zambia”. Quota sampling which is a non probability sampling method was used. The method does not always represent the same proportion of respondents as some characters may be oversampled. For instance, the number of male respondents did not equal the number of female respondents. The parameters set did not consider gender balance as a factor in this research. However, in qualitative research study, whatever findings are drawn has to be generalized. According to Kunes, (1991:21-22) this may be subject to other interpretations.

1.12. STRUCTURE OF THE STUDY

The study has been divided into chapters which will address separate issues respectively. The chapters will proceed as follow; Chapter 1 starts with the introduction followed by the background and overview of the University of Zambia which is the area targeted for this research study. This chapter will also present the theoretical frameworks which includes; the SECI model and Spenders' model. Chapter 2 focuses on literature review that has been segmented in various subtopics that is connected to the topic of study. These include; research trends in general, the knowledge sharing and transfer in research, the role of academic libraries in promoting research and the value of knowledge management for promoting research in a knowledge economy. Chapter 3 explains the research methodology and designs employed in the research. It provides justifications for selection of data sources and explains the ethical considerations made. Chapter 4 presents the findings of the study based on the interviews that were conducted on the academics regarding their research practices at the University of Zambia which will be presented according to the research objectives. Chapter 5 will discuss the findings and interpret them according to the set objectives. Finally, Chapter 6 will conclude the research findings, and offer recommendations based on the findings of the study.

CHAPTER TWO

LITERATURE REVIEW

2.1. INTRODUCTION

This chapter will review varied literatures based on research practices of academics in general, the value of knowledge sharing and transfer in research, the role of academic libraries in promoting research and how knowledge management promotes efficiency in research activities. Organizations that have embraced knowledge management practices are perceived to be more efficient than those that have not. Efficiency in managing university activities in this era is determined by technology and the people who are knowledgeable to perform specific skills within the organization (Knowledge workers). Davenport & Prusak (1998) observed that knowledge roles and skills along with technology are enablers of knowledge management. As such, Knowledge management involves the panoply of procedures and techniques used to get the most from an organization's tacit and codified know-how (Teece, 2000). Research practices of academics worldwide may be varied depending on how research institutions manage their knowledge.

2.2. TRENDS IN RESEARCH PRACTICES

Research activities in a knowledge economy have taken a different dimension due to new trends in the management of economies. This follows the adjustments in policy directions made at national level to suit the economic demands. Previously, research at national level involved science and technology policy which encompassed areas which could resonate well with the needs of low and middle income countries and these dictated on how policy could be formulated in order to determine the research activities. In low income countries, the focus has been on innovation systems which lack institutional apparatus for the model to be a relevant point of departure for planning and designing policies (Olsson and Cooke, 2013). Therefore, most research universities in low income countries are still struggling with the policy frameworks that would respond to the knowledge economy demands. In principle, a research policy for innovation is what is desirable if the countries have to get the maximum benefit from the research universities for them to operate more effectively in the new era. The understanding of what research involves is imperative.

Research is a process of collecting primary data for innovation. The Longman English dictionary (1979) defines research as an investigation undertaken in order to discover new facts and knowledge or to get additional information. It is usually a process undertaken to seek for a solution to an existing problem. Most of these research activities are undertaken in universities which assume the title of research universities because of research activities they conduct. The emergence of the knowledge economy in the 21st century has led to research universities realize their role as every society is dependent on their research output. Research is the only means that can sustain the knowledge economy. In this regard, Altbach (1999) observed that research universities stand at the centre of the 21st century global knowledge economy and serve as flagships of the post secondary education worldwide. Universities are accorded this research opportunity because they exist for this mission and because of the skills that the academics possess.

The process of research is quite involving as it requires some skills. Njuguna and Itegi (2013) did a research on research activities of African universities and established that research as a process involves identifying, locating, reading through many documents, developing instruments, sampling, actual data collection, and analysis and interpreting skills some of which can only be gained through experience. The research observed that experiences in undertaking research are varied depending on the research environment that exists to support the activity. The observations drawn from this research is true although there was no mention of the reasons for the discrepancies. However, these discrepancies are associated with varied management of information sources as stated by Olsson and Cooke, (2013) that universities in developed countries have an established information management system that enables the access and dissemination of research information easily. In contrast, African universities have been the most disadvantaged in terms of accessing expensive digital information from established sources such as Google scholar and Mendeley to produce their research as compared to European, American, or Asian academics that have access to all such facilities. In supporting this assertion, there was an earlier research conducted in the United Kingdom by Jubb and Green (2007) which indicated that most researchers use digital information for their research and place a very high value on electronic journals but a much lower value as yet on libraries of other kinds of digital resources. Further, the research highlighted the need for the libraries to ensure that they provide online high quality Meta data for their holdings for the research behaviour of most researchers indicated a bias on digital materials than those in print format. This research contends that, the desire for accessing an electronic material by

researchers in Europe entails that there is easy access to internet and a well developed information management system that promotes a better research environment for researchers. These findings illuminated the discrepancy that exists in research practices of academics between the researchers found in developed countries and those of the developing nations.

The discrepancies identified between the developed nations and developed countries arise from varied management strategies employed by respective university management that enhance institutional efficiency through management or leadership support. Institutional efficiency is a continuous process by which an institution can guarantee that standards and quality of its education and research activities are maintained or enhanced. (Standa, 2008). This is to say, where there is efficiency; there is also value of the output for research. The argument is whether efficiency is attainable without financial resources. However, a research conducted in Uganda by Nakimuli and Abanis (2015) observed that there is a positive correlation between university efficiency and research output by academics and this was driven by institutional support and strategy. This was after the research established through the earlier studies at Makerere University (2008) which indicated that while incentives for academics to engage in research is necessary, there should be a specific arrangement to encourage university staff to get involved in work related activities like research. The study further established that the universities had low government support but took a separate dimension to ensure that university activities were underway. The findings from the research hinges on institutional strategy that can bring about change. The observations from this study points to the underlying fact that the institution has to play a leading role in supporting the research activities in a university. Thus a better research environment can be dictated by the institutional performance and how supportive it is to the research academics of the university.

Institutional support can be enhanced through capacity building that improves individual's skills and performance. There is no single definition of capacity building. In light of this, UNESCO (2005) defines capacity as the ability of individuals, organizations and systems to perform appropriate functions efficiently, effectively and sustainably. In research activities, capacity building is critical. Bloom and Canning, (2005) Meek et al., (2009) observed that capacity building is an important aspect in the context of developing countries since public investments in research is often torn between at least two main goals which are scientific goals and social goals. Scientific goals is usually expressed as a desire to achieve

international recognition and academic standing in branches of science and social goals denote the aspiration to strengthen industrial capacity, educate the national workforce, leaders and decision makers. Countries that have invested heavily in capacity building has had an advantage of equipping their workforce with the desired skills. In the research environment, the result has been a well organized research environment with proper research data management systems in place.

In this regard, Ratcliffe-Martin, et al (2000) blames African universities for the lack of strategy to manage information resources despite having the required information sources in place. The argument in the particular research was that African universities do not generally manage information well. They tend to lose it, fail to exploit it, duplicate it, do not always share it, do not always know what they know and do not recognize knowledge as an asset. The findings of this research indicate that, what was identified is poor knowledge management practices and probably not poor information management. It is knowledge management that has spurred organizational efficiency in the digital age through knowledge workers whose role in the digital age cannot be overstated.

Knowledge workers according to Fischer (2012) are known for their creative thinking and this can spur the much needed innovation in their organizations. Their contribution can be appreciated if there is a proper knowledge management system in place. Knowledge management is an organizational approach to realign organizational priorities and outline the strategies to meet the desirable goals. It is believed that organizations that have embraced this approach have gained a competitive advantage. Therefore, it would be imprudent to entirely attribute the failure by African universities to manage their information resource to poor management without identifying the underlying causes of which this research failed to do. Apparently, one of the underlying causes identified is inadequate financial resources. African universities have been victims of financial inadequacies that cannot support University activities sufficiently. This has led to academic libraries of African universities to have a challenge in the provision of digital information to support the research activities in a digital age.

Zezeza (2009) established that, most African universities were going through a lot of financial problems. The crisis has its routes to the early 1990s when most African universities suffered a changing role of external donors from the philanthropic foundations to World Bank and

other international financial institutions and multilateral agencies that could not see African universities get financial aid directly from donor agencies but had to wait for an allocation from the government budgets. Similarly, government budgets were suffocated and this has been the trend since time in memorial. Olsson and Cooke (2013) in an OECD report reiterated that the challenges African research universities face is funding. It was observed that funding is becoming more globalised and has led to an increasing degree of isomorphism at the level of practices and institutions. The scenario has worsened the funding prospects of research institutions. As such, it has been observed that, research in most situations has been conducted prematurely due to frustrating lack of funding and poor conditions surrounding the entire process. The outcome has been synthetic data collection and manipulation making the entire research process lack authenticity. This research holds similar views with regards to the financial crisis in African universities for financial availability has a bearing on the practice and how frequent research activity can be conducted. The financial challenge has to some extent prompted most researchers in African Universities engaging in collaborative research.

Jacobs (2008) in his research acknowledged that, most African research practices are based on collaborative works with researchers who have access to better information. She noted that, nowadays researchers are working together in teams which have become a primary feature of the new research landscape. She observed that the phenomenon has become so common that in many scientific fields, teams have become the principle unit of production. The findings from the research were however pointing to access to information as a reason for collaboration and not financial inadequacy. The findings signify that there are other factors that can lead to collaboration which the two researches did not establish. Nevertheless, funding came out as a major reason for collaboration among researchers and probably because it was more specific to an African environment. This research disagrees with the scholar for failing to consider other conditions that determine collaboration in research and why they exist in order to establish the reasons why researchers collaborate.

In another research, Katz and Martin (1995) earlier made similar observations on research collaboration and established some factors that lead to collaboration in relation to how and why they occur. The research discovered that collaboration can take various forms ranging from offering general advice and insights to participation in a specific piece of research. Researchers from different organizations may also collaborate by sharing data or ideas

through correspondence or discussions at conferences by visiting each other or by performing parts of a project separately and then integrate results. Some of the specific reasons for collaboration that were identified included;

- Changing patterns or levels of funding
- The desire of researchers to increase their scientific popularity, visibility and recognition
- Escalating demands for the rationalization of scientific manpower
- The requirements of ever more complex and often large scale instrumentation.
- Increasing specialization in science
- The advancement of scientific disciplines which means that research requires more and more knowledge in order to make significant advances a demand which often can only be met by pooling one's knowledge with others.
- The growing professionalization of science, a factor which was probably more important in earlier years than now.
- The need to gain experience or to train apprentice researchers in the most effective way possible.
- The increasing desire to obtain cross fertilization across disciplines
- The need to work in close physical proximity with others in order to benefit from skills and tacit knowledge.

The research further observed that collaboration vary with the nature of work. The theoretical work indicated that it produced more papers with fewer co- authors than the experimental work. Later this was supported by another finding by which generally accepted that experimentalists' tend to collaborate more than theoreticians. The research was very conclusive in outlining many factors under which collaboration takes place. However, it was too broad and general to identify the causes that apply to collaboration in an African research environment. It failed to consider the variances that occur in geographical locations that could not allow for generalizations of research findings .The research could have been categorical in identifying what applies to African research environments as well as other regions so as to be certain with what applies to particular geographical research environments.

Similarly, Qin et al (1997) conducted a research relating to collaboration in research. The study collected samples of 846 scientific researches and tested three hypotheses on the

relationship between research collaboration and interdisciplinarity. Collaboration was measured by the number of authors, number of institutional affiliations and number of affiliations disciplines, and type of collaboration, interdisciplinarity among different disciplines. Some disciplines were shown to be highly collaborative while others were not. The conclusion was that collaboration contributed significantly to the degree of interdisciplinarity in some disciplines and not in others. Although this research brought out valuable highlights in research, it was only based on the scientific disciplines and not others which became a bit difficult to measure the outcome since it was one sided. The research also failed to state reasons as to why collaboration was higher in some disciplines creating a gap in the study which this research hopes to establish. Nevertheless, this research is of the similar views that collaboration at whatever level in research is a good thing and that it should be encouraged. The benefits that accrue out of collaborative works have a positive implication as it is basically aimed at improving individual capabilities based on shared expertise.

Collaborative research is only effective when the collaborating partners communicate through different media such as telephones, emails, and face to face interactions to enhance exchange of information. According to Kraut and Egidio (1988), ICTs allow free form interaction in real time and time shifted modes to substitute for and even to augment, physical proximity that are likely to yield great benefits. Therefore, the form of communication that must be appreciated especially in situations of physical proximity is through use of ICTs which breaks the boundary spanners. Newell (2000) in this regard observed that ICTs in social networks play a critical role for they connect groups and individuals within a particular geographical area or industry sector. Because of this, they enable knowledge to spill over by enhancing knowledge flow between individuals and organizations. This enhances the research activities among the researchers where such interactions occur.

Conducting research comprehensively demands for an overall favourable research atmosphere that supports the undertaking of the activity. Njuguna and Itegi (2013) identified the key factors that promote a favourable research environment which include, library, financial support, research policy that governs research activities of the research institutions country wide and the well established knowledge management practices that can capture, codify, store and share the knowledge from the research activities. These factors promote an appropriate research environment for researchers. Although these factors play a critical role in promoting a favourable research environment, this research is of the view that the list is

not comprehensive for there are some other factors that would be added. Moreover, what may be considered appropriate in one Geographical location may not be appropriate elsewhere. Therefore, this research would have considered organizational cultures and political factors as part of the key factors.

2.3. KNOWLEDGE SHARING AND TRANSFER IN RESEARCH

Knowledge sharing and transfer are terms used synonymously in knowledge management to refer to knowledge dissemination. Pauline and Suneson (2012) defined knowledge sharing as; the exchange of knowledge between and among individuals and within and among teams, organizational units and organizations. The exchange may be focused or unfocused but it usually does not have a clear priori objective. Knowledge sharing may be an exchange of knowledge between two individuals; one who communicates knowledge and one who assimilates it. They observed that in knowledge sharing, the focus is on human capital and the interaction of individuals. However, there are arguments that knowledge can never be shared because it exists in a context where the receiver interprets it in light of his or her own background. This is disputable because through the interaction process, the recipient can probe and later grasp the knowledge being shared.

On the other hand, Argote and Ingram (2000) define knowledge transfer at the individual level as how knowledge acquired in one situation applies or fails to apply to another. This entails that if the recipient fails to make sense of what the source of knowledge is conveying, and then there would be no knowledge transfer. He observed that knowledge transfer at organizational level manifests itself through changes in knowledge or performance of the recipient units. As such knowledge transfer can be measured by the changes in knowledge or changes in performance. Thus, organizational performance would help rate the effectiveness of knowledge transfer. However, these observations may be argued given that it's not everyone who captures new knowledge and is able to apply it to see the performance results. Others may have captured it but may not apply it there and then. As such, it will be inappropriate to conclude that knowledge was not captured. There are challenges in measuring knowledge probably because of the source where they can be traced from. It is in view of this that Levitt and March (1988) observed that it is difficult to capture knowledge in organizations since it resides in multiple repositories. These misunderstandings of what knowledge sharing and transfer involves have created scholarly arguments of what should comprise knowledge management.

There is no well defined theory of knowledge sharing but most of it is embedded in the knowledge management theories (Sharrat and Usoro, 2003). The emergence of the two terms knowledge transfer and knowledge sharing has its origins from two dimensions. The first one being the period of innovation and technology transfer in which the relationship and communication between units have been studied. The second one is based on the writings of Michael Polanyi through the terms such as tacit and explicit knowledge of which to some extent did not adequately cover knowledge transfer and sharing. But this was later advanced by Nonaka (1991; 98) who acknowledged that knowledge transfer and sharing helps create a common cognitive ground among employees and thus facilitates the transfer of tacit knowledge. Nonaka and Takeuchi, (1995) were of the same view that knowledge transfer and sharing is a critical element and have a strong impact on the research community. Antal (2003) added that, once knowledge has been acquired, it must be distributed. If the knowledge remains with the unit or individuals who obtained it, it is of little use to the organization.

The observations highlighted in these research studies are the same views held in this research for there are similarities on what is obtaining in research institutions. There is so much dependence on knowledge sharing and transfer for the research activity to be complete. Knowledge sharing between employees and across teams allows organizations to exploit and capitalize on knowledge based resources (Cabrera & Cabrera, 2005).

The ability to transfer knowledge from one unit to the other has been found to contribute positively to organizational performance. In research institutions, this attribute enhances the research behaviour of researchers. Communication processes and information flows drive knowledge transfer in organizations. Gupta and Govindarajan (2000) have conceptualized knowledge transfer in terms of five elements which include;

- Perceived value of the source unit's knowledge
- Motivational disposition of the source i.e. (willingness to share knowledge)
- Existence and richness of transmission channels.
- Motivational disposition of the receiving unit i.e. (willingness to acquire knowledge from the source.)
- The absorptive capacity of the receiving unit

These elements in this research study will be helpful in assessing the African universities regarding the knowledge flow by determining the pitfalls if it is at the individual or university level where there is a problem in sharing of knowledge.

Knowledge transfer channels can be formal or informal, personal or impersonal (Holtham and Courtney, 1998). Such mechanisms involve certain amounts of knowledge and there is no surety that the same knowledge may be passed on to other people. The transfer of knowledge by use of documents through technology is viewed as an enabler (UNESCWA, 2003). Lockhead and Stephens (2004) stressed that, the role of technology in knowledge transfer can be viewed in two ways: documentation, archiving and thus providing explicit knowledge on one hand and the facilitation of a platform for a written content especially where employees share knowledge on face to face basis. This is the easiest way to capture that which one possesses by interacting and possibly finding out the meaning of what they are conveying.

O'Dell and Grayson (1998) had a similar study where they stressed that Information technology can support all forms of knowledge transfer and defined it as an innovative use of intelligent agent software to develop interest profiles of organizational members in order to determine which members might be interested recipients of point to point electronic messages exchanged among other members. Information technology increase knowledge transfer by extending beyond formal communication lines. The search for knowledge sources is usually limited to immediate co-workers in regular and routine contact with the individual. Moreover, studies show that individuals are decidedly unaware of what their cohorts are doing (Kogul and Zander 1996).

Research information has further indicated that, using systems has been ineffective while the interactive means is more effective regardless of the audience. This understanding emanates from the theoretical view which states that organizations and knowledge can be analyzed according to two approaches which is codification and Personalization approaches. The codification approach entails that knowledge can be codified; stored, retrieved, reconstructed and assimilated by those who receive it while the personalization approach considers knowledge as something that is interactive and is embedded in work practices and relationships (Jain, Sandhu and Sidhu, 2007). This research supports these findings for it believes that in research institutions there are similar activities where research output tends to be codified and transferred through systems as when a research paper is published and as well

personalized when researchers stand to share what they know through conferences and workshops

Delong (2002) identified another means of knowledge transfer which is through mentoring. According to OhioEPA (2006), mentoring takes place when an experienced skilled person (mentor) is paired with a lesser skilled or inexperienced person (protégé) with a goal of developing or strengthening competencies of the protégé. The idea of mentoring as observed by Bentley (1995) is aimed at encouraging the individual to reflect on the job as a whole so that current and new skills may be most appropriately applied. The findings highlighted from the study are useful in understanding the research practices of academics in a research university as what has been stressed is similar to what goes on among researchers regarding knowledge sharing practices.

Knowledge transfer is successful in organizations that have the capacity to capture and codify knowledge. Many studies of knowledge transfer recognize the relevance of knowledge embedded in tasks when they invoke the concept of routines. Argote (2000) stated that, only a few studies, have attempted to explicitly examine or describe the routines or task sequences used by organizations and to analyze their transfer to new settings. The findings of this study are helpful in ascertaining the extent to which research institutions especially the University of Zambia has benefited from the embedded tasks such as use of emails and institutional repository to share their knowledge with colleagues. However, the reliability in use of these embedded routines is dependent on the willingness by the researchers to use the system in place for sharing knowledge. The research did not consider the differences that arise in researchers behaviours in terms of technology fad. Some researchers benefit more in use of embedded routines while others experience total exclusion because of lack of interest. It is from such discrepancies that it becomes difficult to generalize the outcome of such findings when there is seclusion of some participants. A major theme in these studies is that transferring knowledge through moving routines can be effective, although specific characteristics of the routine, as well as features and interrelationships of the originating and receiving units of the organization, influence the likelihood of successful knowledge transfer.

On the other hand, knowledge sharing in organizations involves the breaking down of barriers in organizations to allow the knowledge flow. Christensen, 2007; Probst et al, 2000 observed that the aim of new knowledge sharing in organizations is to either create new

knowledge or exploit existing knowledge. Davenport (1994) observed that in reality, the dissemination and sharing of knowledge can prove to be challenging at the best of times. The extent to which a firm succeeds in sharing knowledge depends on the organizational culture and amount of explicit knowledge available (Austin, 1990; Kim & Ju, 2008). These observations entails that knowledge sharing is determined by the organizational philosophy that binds the particular institution. The organizational culture will dictate the platforms and incentives upon which the knowledge can be shared. Yang (2004) observed that motivational issues become vital determinants in building successful knowledge sharing practices in any organization. Motivation as an incentive changes people's attitudes and perceptions towards work. This can encourage the sharing of more knowledge by senior researchers with young researchers. Ipe (2003) further outlined the motivational factors in knowledge sharing into internal and external factors. He observed that internal factors include the power residing in knowledge assets and reciprocity that result from sharing. The external factors include relationships with the recipient of the knowledge sharing and the reward. Therefore, it is always important to understand these factors in knowledge sharing for it to be effective. But it is also notable that when knowledge is being shared, there must be a strong relationship between the recipient and the person sharing. This is in order to build trust among the researchers.

In this regard, Kristina's (2006) research of knowledge sharing among multinationals proved that interpersonal trust and shared cognitive ground are important determinants of cross border knowledge sharing. In addition, a research study that was conducted in Singapore outlined factors that influence knowledge sharing and these include; cultural factors, motivation to share knowledge, management support, trust, team spirit and the degree to which knowledge is considered as a source of power. (Jain, Sandhu and Sidhu 2007 cited Neo 2002). From the two perspectives, this research study will benefit from the two research findings for it is centred on the same premises that organizations have an influence in determining how knowledge can be shared in accordance to its organizational philosophy. What was obtained from the two studies will act as a mirror on the organizational culture or the University under study in creating a favourable research atmosphere for researchers through its management philosophy. Research activities are driven by individual universities beliefs and values and probably not by geographical factors per se. The University's capacity to manage its own affairs and activities determines its own success. African universities must

have a deliberate strategy to compete favourably in improving their research environments by adopting knowledge management strategies that are sustainable.

2.4. THE ROLE OF ACADEMIC LIBRARIES IN RESEARCH

Academic libraries are essential departments in an academic setting because of their role in promoting research and teaching which are the core businesses of the university. The distinct feature of a university is research. Research demands for search of information that may provide a solution to the problem being investigated. The library as a hub of information supports the research activity through the provision of information. In an age of information transformation, new knowledge, technologies and modes of delivery have emerged that require knowledge workers to be at the centre of knowledge management. It is in view of this that Feather (1994) observed that technology has improved the potential for access, but at the same time it has also provided the means for restricting it. The restrictions can be determined by technical skills, technological infrastructure, political decisions and financial capacity. This assertion entails that academic libraries with the financial capacity has the ability to establish a technological infrastructure that can provide digital information which in turn enables the academic researchers' access digital information.

In view of the above, Woods (1986) undertook a survey in the United Kingdom and other European countries where he described the position with regards to automation and access to digital information. He covered acquisitions, cataloguing, circulation control, serials as well as staffing networking and the findings indicated that 80% of those surveyed were using some sort of computer and 95% of these were using business packages such as word processing or spreadsheets on them. Therefore, Brindley (1989) concluded that Universities in UK have been major users of computers since the latter first appeared. The findings authenticate the assertions from above that academic libraries of developed nations have well established information technology that can support digital research.

Another research conducted in the United Kingdom by RIN and RLUK (2011) presented the findings of the value of services that libraries in the United Kingdom provide to researchers which are relevant to the new digital age. The main aim was to identify the key characteristics of library provision to support research in successful United Kingdom universities and departments. The following were identified as main roles of an academic library in promoting research;

- Good libraries help institutions to recruit and retain top researchers by the quality, nature and extent for the library's collection, of its staff and the services they provide and all its buildings are critical in retaining the researchers.
- Libraries help researchers win research grants and contracts. Libraries as custodians of all the information play a role to support the research proposals that would attract research funding.
- Libraries promote and exploit new technologies and new models of scholarly communications. Libraries help researchers to exploit the full benefits and opportunities of the networked world by using forums like open access and social media
- Repositories increase the visibility of the institution and raise its research profile. The institutional repositories have become institutional assets for the storing of research papers and theses on behalf of institutions. This output helps to raise the institutional profile. This only becomes valuable if the content held increases. It is the duty of the library to educate the researchers on building and increasing the research content by depositing more research publications.
- Outward-facing libraries contribute to institution wide initiative. Libraries play the role of research and administration support to ensure that the universities stick to their traditional roles as well as seize the opportunities that come along.
- Specialist staff works in partnership with academic departments. The library and information staffs work with the researchers to provide the needed information in research which puts away the traditional role of librarians aside. Researchers who make use of the librarians have made changes in research practices and behaviours.
- Connecting with researchers enhances the value of the library services. Libraries are realizing their separation from the researchers and are trying to find ways to reconnect with them and fill gaps. This has caused many changes to ensure that the researchers keep seeing the value of libraries. Dedicated spaces provide a better work environment for researchers. Libraries are considered as a better work environment for researchers
- Easy access to high quality content is a key foundation for good research. Libraries must provide high quality content for research in which ever format

- Libraries are a physical manifestation of values of the academy and of the scholarship. Libraries are one of the enduring features of the academy central to the values and the practice of scholarship.

The research findings of the study above brought out the emerging ideal roles of an academic library in promoting research in a knowledge economy. This is evidenced from the roles outlined which indicate the roles of knowledge managers who play a critical role of improving delivery of services as well as exploitation of technologies in support of the modern researcher. The research also compliments the earlier observation by Feather (1994) that academic libraries with financial capacity tend to have better technological infrastructure that can support research. The challenge is whether African academic libraries will manage to perform these new roles considering the financial inadequacies they are engulfed in.

The experiences of the African academic libraries can be evidenced from what Ruwako and Otiike (2014) established in their research conducted in Kenya. Factors affecting the development of digital resources collection were identified. The research identified the following challenges:

- Implementation of the national ICT policy. The national information communication technology expressed challenges in the Kenya universities in the development, use and management of digital resources that would enhance access and management of digital resources. Harle (2009) in this regard lamented that national ICT policy in Africa has generally overlooked the inherent needs of research infrastructure. Kenya and like any other African countries remain with no guidelines to motivate and enforce access to use of digital resources within the universities. In this respect the critical part according to Gudo et al (2011) is internet access which has some relapses within the university and outside areas.
- Bandwidth availability and costs. The study observed that internet access was limited due to low bandwidth that was accompanied by the cost high cost. According to KENET (2006) the students and faculty are often unable to access information because of low speed. Gakio (2006) established that in most tertiary institutions through the connectivity survey statistics indicate that the average bandwidth was at 3706/1254KB/s (upstream/downstream). Gakio further added that this is the equivalent of what is consumed on average in a residence in North America or

Europe. The situation translates that the bandwidth that is availed to the institution is insufficient to suffice for the institutional operation.

- Performance measures to evaluate usage of digital resources. The study established that the Kenyan universities do not have indicators that will evaluate the value derived from access to digital resources. The ideal situation would be to track who accesses what in order to determine the usage and how useful the materials are. For the research academics, this is a plausible task as it can be done though evaluation means through the departments where usage of types of materials can be tracked by faculty librarians if any.
- ICT infrastructure and computers. The limited ICT infrastructure and computers limits access to internet or digital materials. The research established that there has not been a strategy to restock computers that would enhance access. Rosenberg (2005) in her research established that on 15% of libraries provided more than one computer for every 100 full time equivalent library users. She further reported that 75 percent of the computers were internet connected and observed that having long queues in libraries was the norm as the users waited for the opportunity to use the library. The findings of the study represent what most African academic libraries go through.
- Institutional leadership. The research study established that there was no institutional commitment in relation to financial investment that could enhance the establishment of ICT infrastructure. This is because automation of library materials requires huge funding. KENET (2006) reports that universities in Kenya allocate low operational budgets to ICT as such it has been difficult to invest in campus networks In order to broaden the internet bandwidth. Rosenberg (2005) reported that the University of Nairobi library felt that their experience of automating a multi-site library could be valuably shared with others in the country but there was no easy mechanism. This experience is an indication of institutional relapse that cannot support university activities.
- Need for user education. The usage of digital resources in universities was very low due to lack of skills on accessing the digital materials. The librarians in charge of digital collection were tasked to create a platform on how user services can be enhanced especially with regards to digital information. This is one of the major

challenges that most African universities face despite having the resource available. Libraries may have the digital collection but users are not able to access it.

Maponya (2004) in this regard acknowledged that African academic libraries in the 21st century had challenges in managing of information as well as meeting the researchers' demands. The challenges include; multiple formats of information and changing user needs. This entails that user needs have shifted from the traditional means of book search to internet browsing for information search. According to Budd (1998:270) the changes brought by electronic media necessitate transformation in the way librarians think about their jobs, the users of information and communication process of which they are part of. Hence, there must be an adjustment in the perception and discharge of their duties. Hawkins (2000) in his research suggested that, libraries must learn to adapt by appropriately modifying, supplementing and discarding services, while maintaining the core values that are important to their roles. Libraries in this regard are expected to constantly update and acquire new skills for them to be relevant in the new age. The sure way of updating the researchers on the new ways of research is through user education. The challenge is the extent to which user education is conducted

User education is offered in different ways depending on the existing curriculum of the university. Others have a specific department within the library called information literacy that spearheads the user education. Fox (1979) identified four levels of instruction that encompasses user education which include library orientation, basic instruction, course related instruction and credit course related instruction. The library orientation is an introduction to the library facilities and resources. It creates awareness about the physical location of the library materials. The basic instruction is an approach used to provide guidelines on how information can be accessed within the library. It can be conducted through a lecture presentation of 1 or 2 hours. The course related instructions are advanced library user programs that are conducted for a longer period of time or even an entire semester or term. This form of instruction was a project conducted as an experiment by Patricia at Moteith College during 1959-1962 and was thereafter adopted by other colleges. Course related assignments were the major components of the project. The separate credit courses in user education are introductory courses to library skills and referred to as library studied. According to Renford and Hendrickson 1980, they can be referred to as "introduction to research" or introduction to Library. These programs are taught by librarians.

All these user education levels can be taught to improve information access by users which eventually change the perceptions of researchers about the libraries.

The users' inability to capture what is available for research in the library has led to the negative perceptions of what the library is ought to be. Alemna (1982) in this regard pointed out that, the underutilization of library holdings and facilities may therefore be due to the fact that users are unaware of the facilities offered by the library as to the fact that libraries do not have precise knowledge of user needs. Therefore, they tend to avoid use of the library with a notion that only old materials are stocked. In as much as Alemna 's research blamed users for failing to identify useful information in the library, the views of this research are that the challenge is still with the library to live up to its expectations of identifying appropriate means of informing its researchers about its new information sources. The library has a mandate to educate and update its researchers about the new developments in the libraries so as to effectively reach out to them by employing various marketing strategies. In a knowledge economy, libraries are supposed to be driven by well managed knowledge based activities that are competitive to the present environment. Therefore, the aspect of managing knowledge well to improve the research environment of African universities lies in the capacity of the knowledge workers who have the ability to discharge their duties according to their expectations.

In this regard, Spalding and Wang (2006) observed that librarians are aware of the misconceptions users have about the libraries. Many believe that the World Wide Web now provides access to the entire world's accumulated knowledge. They do not know that valuable information will never become available in machine readable form and that much digitized information is only available for a price. The aspect of knowing what users think provides intervention measures to respond to the challenges of how to serve them out of the misconceptions they hold. The challenge is that the intervention measures requires finances which most academic libraries in the African set up do not have to conduct marketing programs. A research was conducted in the United States of America on successful marketing of academic libraries which illuminated that academic libraries in the USA are generous in sharing their innovative concepts and success. The campaign for academic and research libraries web site provides examples of some of these marketing ideas (Spalding and Wang: *ibid*).

The role of an academic library does not end on just enlightening users about what is available in the library to the researchers but also as a complementary department that supports academic programs of the University. Stoffle (1996) earlier on in another research observed that the role of an academic library in research is that of a gateway of achieving the university's main core business which is teaching and research. The argument was that academic libraries have a unique window of opportunity to help shape the future of both the library and the institution. The research observed that it is the library's educational and knowledge management roles that hold the keys to success in the new arena. The study emphasized on the need for knowledge management among librarians if they had to create an impact in the research practices of academics.

The observation made from the research is that the study was centered on knowledge management which this research is equally interested to establish. The emphasis was placed on ensuring that librarians mandated to provide research information must be knowledge workers. Knowledge workers in this era are the ones who can create an impact in their service delivery. Further, the research study acknowledged the library as a very important department that can help an institution get into the digital environment. Nevertheless, the capability for libraries to bring in desirable change in a university can only be possible if the University management recognizes the value of libraries in their set up. Therefore, universities need to have a clear institutional strategy that must provide a strategic direction to enable libraries function autonomously in order to attain desirable results in supporting research activities.

Similarly, Jantz (2001) later on conducted a research and observed that knowledge management is a key factor that can help transform the library into a more efficient knowledge sharing organization. He stated that, the efficiency comes from the libraries having the capacity to manage information and advanced technologies that can easily enhance information access. Libraries according to (Lau, Maria and Bothma 2012) are primary gateways to information and important vehicles for the acquisition of knowledge. As knowledge institutions, libraries provide spaces for information-sharing and learning for all ages, genders, ethnicities and socio-economic groups regardless of their information/knowledge needs. These research studies recognize the role of libraries in promoting research. The challenge lies on the extent to which these resources are equally exploited by the users when they are put in place. The concerns arise from the traditional

beliefs by the library clients that libraries serve the purpose of being “archival centre’s” where only old materials are stocked as such many researchers shun the libraries and do not consider them as the hub of information sources. The research under study is in agreement with the earlier research findings of the roles of a library but will use the findings as a comparative study to establish what is obtaining in the current knowledge economy and what libraries are perceived to be in order to identify the gaps.

2.5. VALUE OF KNOWLEDGE MANAGEMENT IN RESEARCH

Knowledge management (KM) as a concept is a management term with varied definitions dependant on the approach and context one is using to define it. According to Alavi and Leidner (2001) citing (Von Krogh 1998) Knowledge management refers to identifying and leveraging the collective knowledge in organizations to help the organization compete. Argote, 1999; Huber, 1991 defines knowledge management as how organizations create, retain and share knowledge. Grey (1996) defines Knowledge management as a collaborative and integrated approach to the creation, capture, organization; access and use of an enterprise’s intellectual assets. From the definitions, knowledge management is a process through which human centred assets are managed. The main function of knowledge management is to guard and grow that which has been identified and is owned by the individual. Where possible, transfer the asset into a form where it can be more readily shared by other employees (Brooking, 1999). The aspect of knowledge management is incomplete if culture that embraces an organizational philosophy is ignored. Organizational culture encourages knowledge sharing that promotes easy access of knowledge. From the intellectual perspective, knowledge management consists of leveraging the intellectual assets to enhance organizational performance (Stankosky, 2008). From another perspective, Wamundila (2008) cited Newman and Conrad (1999)’s assertion that, Knowledge management “is a discipline that seeks to improve the performance of individuals and organizations by maintaining and leveraging the present and future value of knowledge assets ‘. Based on these definitions, Knowledge management is a process with an integrated approach to manage knowledge. It is important to note that managing knowledge must be done comprehensively to get the benefit out of it.

The multifaceted approach of knowledge management leads to an understanding that knowledge management is a mix of strategies, tools and techniques. This mix is made out of knowledge based system design such as; structured knowledge acquisition from subject

matter expert and educational technology. Knowledge management according to Ruggles and Holthouse (1999) has certain attributes which include;

- generation of new Knowledge
- accessing valuable knowledge from outside sources
- Using accessible knowledge in decision making
- Embedding knowledge in processes, products and or services
- Representing knowledge in documents, database and software
- Facilitating knowledge growth through culture and incentives
- Transferring existing knowledge into other parts of the organization
- Measuring the value of knowledge assets and or impact of knowledge management

Understanding of these attributes is imperative in this study for they will act as a yardstick in identifying the knowledge management strategies employed at the University of Zambia as a research institution under study.

Knowledge management can be tackled in different dimensions depending on the organizational approach and factors considered. Lee and Choi, (2003) suggested three major factors for managing knowledge which include enablers, processes and organizational performance Knowledge management enablers are organizational mechanisms of fostering knowledge consistently. They can stimulate knowledge creation, protect knowledge and facilitate the sharing of knowledge in an organization. Enablers according to Armbrrecht et al (2001) include culture, infrastructure and technology. All these factors have a profound effect on all aspects of knowledge creation and flow. Culture is a system of shared meaning within the organization that strongly influences the behavior of members of the community. This can be shared values and beliefs that embrace organization. Culture as an enabling factor is an important aspect in promoting knowledge creation and knowledge sharing through individual interaction, collaboration and teaching. Therefore, creating an enabling context in such situations is through the implementation of reward systems to encourage the knowledge sharing culture.

Infrastructure as an enabler according to Armbrrecht et al (ibid) refers to the impact of knowledge management of both organizational and physical structures. The ICT infrastructure may involve common workstation platforms that can promote collaboration among researchers such as electronic mails and intranets. There are two major reasons why

the ICT infrastructure is seen as an enabler. Firstly, the ability to capture as much tacit knowledge in the individuals heads as possible and archive it in a searchable database. Secondly, it is where a database allows each individual member of the organization to advertise their knowledge base and expertise. The enablers as a whole provide infrastructure needed for the organization to increase the efficiency of knowledge processes.

Knowledge processes include activities such as creation, sharing, storage and usage. Organizational performance represents the basic operations of knowledge. These factors in this study are beneficial to measure if processes and context are enabled in the research activities of the University. There is a general perception that knowledge management being multifaceted; it requires an integrative approach to attend to the whole process in order to promote efficiency. Oosterlinck (2001) also acknowledged that managing university knowledge requires an appropriate context, structure and processes within the university so that the fundamental values of research and teaching are complimented rather than hampered by the university 's active engagements' and involvement in the emerging processes of industrial and entrepreneurial innovation and knowledge transfer.

Many organizations have changed the approach to manage organizations in response to economic revolution that has affected the global economies. The research institutions have not been spared which has led to the repositioning of many universities to get the maximum benefits of being competitive by relying on knowledge management which is perceived to be the driver for change. A research study by Daikir and Liebowtz (2011) have attributed the role of knowledge management to organizations to; help drive strategy, solve problems quickly, diffuse best practices, improve knowledge embedded in products and services, cross fertilizes ideas and increases opportunities for innovation, enables organizations to stay ahead of competition and builds organizational memory.. Thus the role of knowledge management in research activities cannot be overstated.

Further, Daikir and Liebowtz (2011) categorized the benefits at individual level of knowledge management in organizations which he stated; helps people to do their jobs and saves time through better decision making and problem solving, builds a sense of community bonds within the organization, helps people to keep up to date ,provides challenges and opportunities to contribute for the community of practice, develops professional skills, promotes peer to peer mentoring, facilitates more effective networking and collaboration and

develops a professional code of ethics that members can adhere to. In research institutions, these are values that knowledge management will bring by helping to locate where knowledge is generated and then capture and disseminate it accordingly. Moreover, knowledge creation which is conducted in research universities is driven by individual commitment which in turn helps the generation of research more effectively. In this regard, this research will rely on these factors to determine how research is conducted at the University of Zambia.

Oosterlinck (2001) gives an overview of the University of Leuven which adopted this approach for managing the university research in the past 29 years and the results were remarkable. Leuven's success story was based on three major activity poles which included; the contract research pole, the managing of university knowledge portfolios and the transfer of knowledge via the creation of spin off companies. The context of freedom and incentive to operate along the three poles were embedded in a proper organizational approach. The mix of the mechanisms, tools and processes enabled the university to generate an increasing flux of knowledge transfer, patents, know-how, licenses and spin –offs. The experience of Leuven adds value to this research study for it provides insights on how knowledge creating companies ought to function in the knowledge era. The research provides an organizational approach employed at Leuven and this is adopted in this study for it will help in examining the University of Zambia knowledge management strategy. The strategies are imperative in understanding the organizational management approach where implementing knowledge management for competitive advantage is concerned.

In view of the above, another research study was conducted in Malaysia by Mohayidin, et al (2007) by use of socio-technical components to assess the knowledge management in universities in Malaysia. The findings were that universities can be effective in performing their core business which is research if they utilize and manage knowledge in a proper way. The deployment of inputs such as infrastructure in form of ICT systems and knowledge management systems enables the utilization of human capital and organizational knowledge via best practices, rules and procedures which will in turn produce outcomes through research output. These are critical elements needed in this research study for they bring to the fore a clear understanding of the benefits of knowledge management to research organizations. These findings will be useful to make reference in identifying gaps that exists in the research under study relating to knowledge management supporting research activities at the

University of Zambia.

2.6. CONCLUSION.

Various studies have been reviewed regarding research practices worldwide. The studies have covered the research trends in general, the role of academic libraries in research, the role of knowledge transfer in promoting research and the value of employing knowledge management for competitive advantage. The trends of research practices have shown variances in the management of research and the approaches employed by various organizations influenced by a number of factors. Some of these factors are economical, technical and social in nature. The discrepancies indicate that the research trends of researchers in the developed countries have better ways of accessing and managing information as compared to those in developing countries. Some of the challenges are attributed to the management styles by countries in developing nations. Nevertheless, this study will endeavour to establish the research practices of academics in an African setting.

CHAPTER THREE

METHODOLOGY

3.1 INTRODUCTION

This chapter will be based on the research methodology of the study. It will cover the following areas; the research methodology, the qualitative paradigm used and the motivation for using such paradigms, the researchers' role, the data sources and collection, data analysis, data verification and ethical considerations made. Finally, a conclusion of the chapter will be drawn.

3.2. RESEARCH METHODOLOGY

This research was purely a qualitative method of data collection which involved probing individual experiences and perceptions of their research practices. The research had to seek for personal opinions and varied experiences from research academics regarding their research experiences. Hence, the study was involved in an inquiry process of understanding a social or human problem, based on building a complex, holistic picture, formed with words, reporting detailed views of informants, and conducted in a natural setting. The method of inquiry used was through interviews which were adopted as a means of data collection.

This study inquiry made knowledge claims based primarily on constructivist perspective such as; multiple meanings of individual experiences which they socially construct. The researcher prepared structured interview questions which comprised of some open ended questions that were asked to the respondents in order to collect primary data. The intent of preparing the structured interview questions was to help in developing themes that were in line with the research objectives.

The researcher further conducted desk top research to gather some information regarding the research practices in the university.

3.3 QUALITATIVE PARADIGM USED

The qualitative method used was interviews in which face to face in-depth interviews were conducted to academic researchers of varied years of experience as a method of collecting primary data. The form of interview was in form of direct personal investigation through personal interaction where the researcher had to collect the information personally from the

sources concerned.

The interview was used to explore the views of the people. The researcher engaged the interviewee into a discussion that required probing with open ended questions that were few in number but intended to elicit some vital information regarding the research study. The method of collecting information through personal interviews was carried out in a structured way using structured interviews. These interviews involved the use of a set of predetermined questions and standardized techniques that followed a procedure of responding to questions according to the way they were asked. However, there was flexibility in explaining as the interviewer was open to the guided discussion that created an interactive discussion. Ritchie and Lewis (2003) stated that an interactive discussion between the interviewer and interviewee is a key feature of the in-depth interview. In-depth interview combines the structure with flexibility and this created an opportunity for the interviewee to explore and bring out valid information that would benefit the interviewer. It is this kind of interview where Creswell (2002) observed that interviews are useful means of collecting data for it allows participants to provide historical information as well as allowing the researcher to have control over the line of questioning.

3.4. QUALITATIVE METHODS AND MOTIVATION FOR THEIR USE

The interview method was opted as a qualitative means of collecting data from the experiences of our natural setting and observations made from introspection, life story and historical perceptions and this laid the basis for the motivation for the use of qualitative research to find out what causes the imbalances in research activities as they are in Africa. Qualitative research through interviews allowed for open ended interviewing with participatory and narrative explanation of life experiences and historical perceptions. The researcher had the flexibility of allowing the responses to be fully probed and explored spontaneously by the interviewee. This provided full insights of what was obtaining on the ground without creating assumptions of the purported situation. Further, the researcher was able to collect detailed information through follow up questions and probing to achieve in-depth of answer in terms of penetration, exploration and explanation which was adequate for constructive assumptions. The interview method was appropriate as interviews are generative in the sense that new knowledge or thoughts are created as the interview is in progression. The advantage in this situation was to get as many insights as possible regarding the research study when primary data was collected.

The desk top research was paramount in acquiring additional information regarding the research practices of academics in the university.

3.5. THE RESEARCHER'S ROLE.

The researcher in this study was involved in interviewing the participants as a means of collecting data. Ritchie and Lewis (2003) observed that in qualitative research the research interviewers are themselves research instruments and there are some key requirements of them that they need to meet to ensure that the primary data was collected. In the quest to undertake the research, the researcher prepared a guided open ended interview questions which were used to elicit information from the interviewee. Before undertaking this process, the researcher had to explain the background of the study to the participants to create an understanding of the subject matter under study. The process clarified some discontentment that participants had before the interview. Further, the researcher explained and assured the respondents on ethical issues by highlighting some of the steps taken to obtain permission from the institution to ensure security and workers protection for divulging information relevant to the study. Creswell (2002) cited Marshall and Rossman, (1999) who stated that it is important to gain access to research or archival sites by seeking the approval of “gatekeepers.” This helped to interview respondents even during working hours provided they were available for the task.

During the interview process, the researcher played a critical role of managing the interviews. The researcher had to control the flow of the discussion by being curious in order to probe further. According to Ritchie and Lewis (2003) an enquiring mind is an essential asset in an in-depth interview. In addition, Ritchie and Lewis (2003) cited Thompson (2000) who stressed that in-depth interviewing requires interest in and respect for people as individuals, and is not for people who cannot stop talking about themselves. Therefore, the role of the interviewer was to establish a good rapport with the participant at ease and create a climate of trust that would create a desirable environment for collection of data. Creating the right rapport is about demonstrating interest and respect and showing an understanding and empathy. Interviewees tend to respond positively where an ideal environment is accorded and this is what the researcher provided.

The researcher's role was also to establish the credibility with the participants by asking relevant questions which were seen as meaningful by the participants and were based on the

understanding of the research. This was important to avoid the diversion of the discussion from the research study. In this regard the researcher had to be alert to contradictions with what was said earlier and explore in more detail the follow up questions. The researcher had also the role of collecting more data from the desk top in order to authenticate and cement what was collected from the interviews. Finally, the role of the researcher was to interpret the data collected from the research and report what was obtained from the study which will be available on the institutional repositories for future academic references.

3.6. DATA SOURCES AND SELECTION

Marshall and Rossman (1995) observed that well developed sampling decisions are crucial for any study's soundness. Thus, as a researcher, a sample size that represents the study area was selected carefully. This is the more reason a qualitative research was employed in order to explore the opinions of individuals being interviewed and make generalizations of what they express as long as they were representative of the population study. According to Creswell, (2003:185) the idea of qualitative research is to select participants or sites or document or visual materials that will best help the researcher understand the principles and research questions. For this research, a total number of 20 academic researchers were selected through quota sampling (non probability sampling). Sampling method according to Bless and Achola, (1988:60) means abandoning certainty in favour of probability. This entails that out of all the university research academics, only a few had to offer opinions that would represent everyone.

The sample size was arrived at using the quota system method which required the consideration of certain parameters in order to capture a representation of researchers from various schools in the university that will represent the research practices of academics from all faculties. The sample size would also provide responses to the research questions in the study. The parameters set to identify the respondents to the study included the following;

- The first step was to identify the faculties and departments within the university and their roles in research.
- Secondly, the researcher applied parameters to determine which researchers in each school or department could be interviewed. The parameters set were the number of years in research practice such as 0-5years, 5-10years, 10-15years and 15years and

above. The proportions per department were applied in the sampling process of which an average number of 5 respondents per school was to be targeted

- Besides considering the schools as areas that would be captured for sample population, the department of library and information studies was identified as another area of interest where the lecturers in the library studies would offer insights regarding the role of the library in research since they had the theoretical perspective of what a research library ought to be. This was guided by Spenders theoretical framework which was adopted for this research which postulates that in knowledge creation process, there must be consideration of where knowledge resides; in this case, it is the library. Hence, the views of the academics in the department of library studies were critical in this study as in supporting research.
- Finally, the researcher selected subjects from various subgroups while taking into consideration the proportions in the first step. This ensured that the samples were representative of the entire population.

Quota sampling was selected in this research for it allowed the researcher to sample a subgroup that is of great interest to the study. In this case, the University of Zambia is a very big organization with various subgroups such as students who may be subdivided into undergraduate and postgraduate, the different categories of staff which include; administrative, professional and the academic staff. Therefore, the research was centred on the academic staff that form part of the UNZA sub-groups. Further, it was imperative to opt for this method as it allowed the researcher to observe relationships between subgroups within the study area. The relationship of the academics and the librarians was one notable relationship. Taking into consideration the nature of the study, it involved an understanding of how academics interact with the library and administration in conducting their research activities within the university in order to fully understand the research environment they are operating under. Further, the data selection was guided by the research design (interview method) that required only a small number of people to be captured due to the bulkiness of the information that is captured in the data collection process. The method was cost effective and less time consuming.

3.7. DATA COLLECTION

Data was collected from 30th October, 2016 through to 31st December 2016. In order to get a clear understanding of the research practices of academics at UNZA, direct face to face interviews were conducted as a means of primary data collection. Researchers were interviewed verbally through an inquiry method which they responded verbally by expressing personal experiences in research and challenges they face within the university. The interviewer had to capture the verbal responses by writing on a printed response sheet that was generated in line with the interview guide as a means of data capturing.

3.8. DATA ANALYSIS.

Data analysis included the interpretation of the data gathered from the respondents by creating meaning out of it. For easy organization and analysis of data in this study, the data analysis presentation was done according to the research objectives of the study. Each research objective had structured interview questions aiming at providing a response to the research objective set. Hancock et al (2010:31,32) agree with this procedure that if you are clear of what question you set to address, it will be easier to make sense of the mountains of data you have generated and to present an interesting ,meaningful and high quality paper.

The method of data analysis that was employed was manual and content analysis. Manual analysis was used to interpret data in a simpler form by use of some simple graphs. The open ended questions were analysed using content analysis method where structured interview questions were prepared for the respondents. As the interview went on, the responses from the respondents were written down on a piece of paper which acted as response sheet for data capturing and later analyzed using content based analysis. The interview response sheets were broken and organized into information bearing subtitles and sorted out accordingly for coding purposes. According to Rossman & Rallis (1998; 171) coding is defined as a process of organizing the material into chunks. Coding involves arranging similar sentences and segments into one category and performs a preliminary analysis. In this study, researchers were grouped according to the departments and number of years in research practice. The coding process was instrumental in generating a description of the themes for analysis. Finally, the data that was coded and described was interpreted to create meaning out of it.

Content analysis according to Harwood and Garry (2003) is a method for analyzing the content of a variety of data such as visual and verbal data. It was employed in this study as it

enabled the reduction of phenomena or events into defined categories so as to better analyze and interpret them. Since this research was based on interviews, almost all the responses were narrative and required this form of analysis.

In some situations, data analysis involved direct quotes from what respondents stated as evidence to the proposition I made in the study. Hancock et al (2010:32) argues that quotations should be presented with a linking commentary and should be selected to illustrate such features as the strength of the opinion or belief, similarities between respondents, differences between respondents and the breadth of ideas.

3.9. VERIFICATION

In ensuring internal validity of the research, different strategies were put in place and these included; triangulation and clarification of research bias. Triangulation method involved gathering of data through interviews and analysis of varied literatures to examine the evidence from the sources and built substantial statements to justify the themes. Triangulation method is widely used for qualitative research verification. According to Denzin (1994); it is often cited as one of the central ways of validating qualitative research evidence. The method uses different methods and sources to check the integrity of, or extend, inferences drawn from the data. However, there are many strands that argue that the triangulation method can only validate the research to a certain extent. Ritchie and Lewis (2003) brought out two arguments. The first criticism from the ontological perspective that there is no single reality or conception of the social world to ascertain and that attempting to do so through the use of multiple sources of information is futile. Secondly, from the epistemological grounds that all methods have specificity in terms of the type of data they yield and thus they are unlikely to generate perfectly the concordance evidence. Therefore, based on the arguments, the value of triangulation can only be based on adding other means of research validation in order to have an addition in the breadth of knowledge. This is the more reason the classification method was opted for as an additional verification method. The clarification of research bias required the researcher to create an open and honest narrative that was going to resonate well with readers. This was done to avoid subjectivity of the research.

3.10. ETHICAL CONSIDERATIONS

Ethical issues usually are acceptable standards that must be followed in research. Beauchamp and Childress (1983) suggest that in order to ensure that ethical clearance is adhered to; the following four factors must be taken into consideration.

- Autonomy; respect the rights of the individual
- Beneficence; doing good
- Nonmaleficence; not doing harm
- Justice; Particularly equity.

In this respect, before undertaking the data collection process, permission was sought from the University of Zambia management for research permission to undertake a research. Participants were equally approached and requested to take part in the research of which they had to voluntarily accept to be interviewed and if in the process of interview, they felt uncomfortable, they had the right to withdraw at any time so that individuals could not feel they were coerced into participation. As a sign of accepting participation in the research, participants had to sign a consent form which remained with the researcher. The researcher explained the nature of the research and the likely impact on participants to avoid certain insecurities and expect what to anticipate in the research. This process had to be undertaken to both the university and the participants as observed by Cochran (1977) that, researchers have ethical responsibilities both to the research participants and the university where he/she is affiliated. At the data analysis and interpretation stage, ethical considerations were made to ensure that participants had their privacy respected by assuring them that anonymity of individual responses would be protected by use of pseudonyms on the response sheets.

3.11. CONCLUSION

The chapter explained the steps that were considered in conducting the research starting with data collection to data analysis in order to respond to research questions. The plan was articulated and specified. The aim was to clarify to the readers and researchers the stages employed in this research in order to understand what was at stake. The following chapter presents the findings of the study.

CHAPTER FOUR

PRESENTATION OF RESULTS

4.1. INTRODUCTION.

This chapter presents the findings of the research from the interviews that were employed as a means of data collection. The first few questions were based on personal information about the research academics and did not require detailed explanations. The other questions were open ended questions that required narrative explanations. As such, content analysis was used to analyse the data. The study was aimed at investigating the research practices of academics in an African university setting with a case of the University of Zambia. The presentation of the results has been guided by the research objectives which will generally be used to structure the findings of the study.

4.2 RESEARCH PRACTICES OF ACADEMICS AT UNZA

A total number of **20** academic researchers were targeted for the interview which was conducted sequentially. 18 was interviewed while 2 indicated they were engaged in other programs.

4.2.1. Schools captured

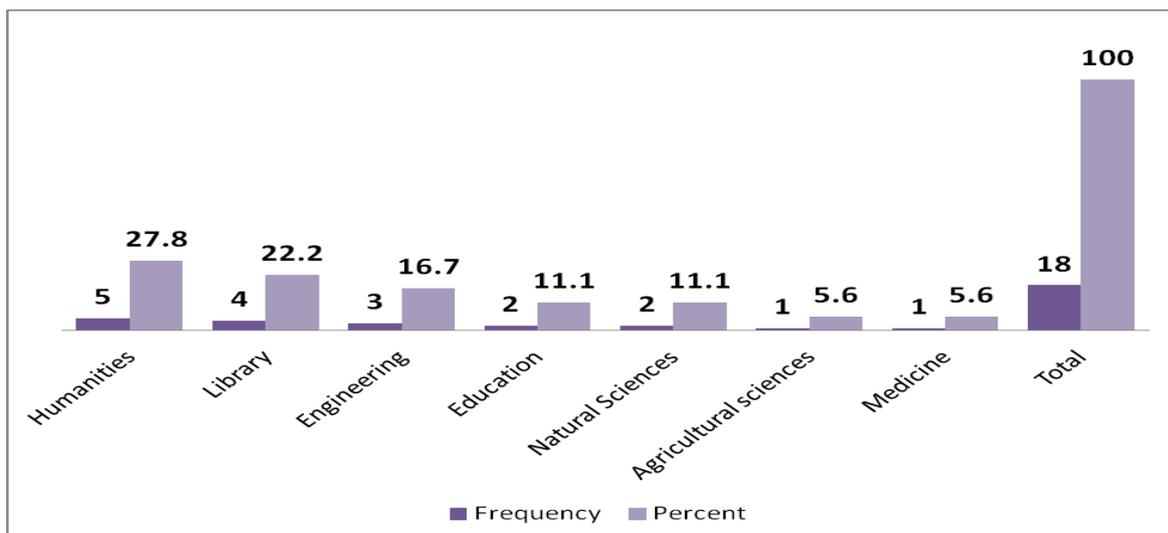


Figure 3 ; Schools captured and number of respondents

The figure above indicates the number of academic researchers captured from the schools and departments. Humanities had 5 (27.8%), department of library and information studies 4 (22.2%), Engineering 3 (16.7%) Education 2(11.1%) Natural Sciences 2(11.1%) Agricultural Sciences 1(5.6%) and Medicine 1(5.6%). Therefore, the School of Humanities had the highest number of researchers who took part in this research study as presented by the statistics.

4.2.2. Position held in the university

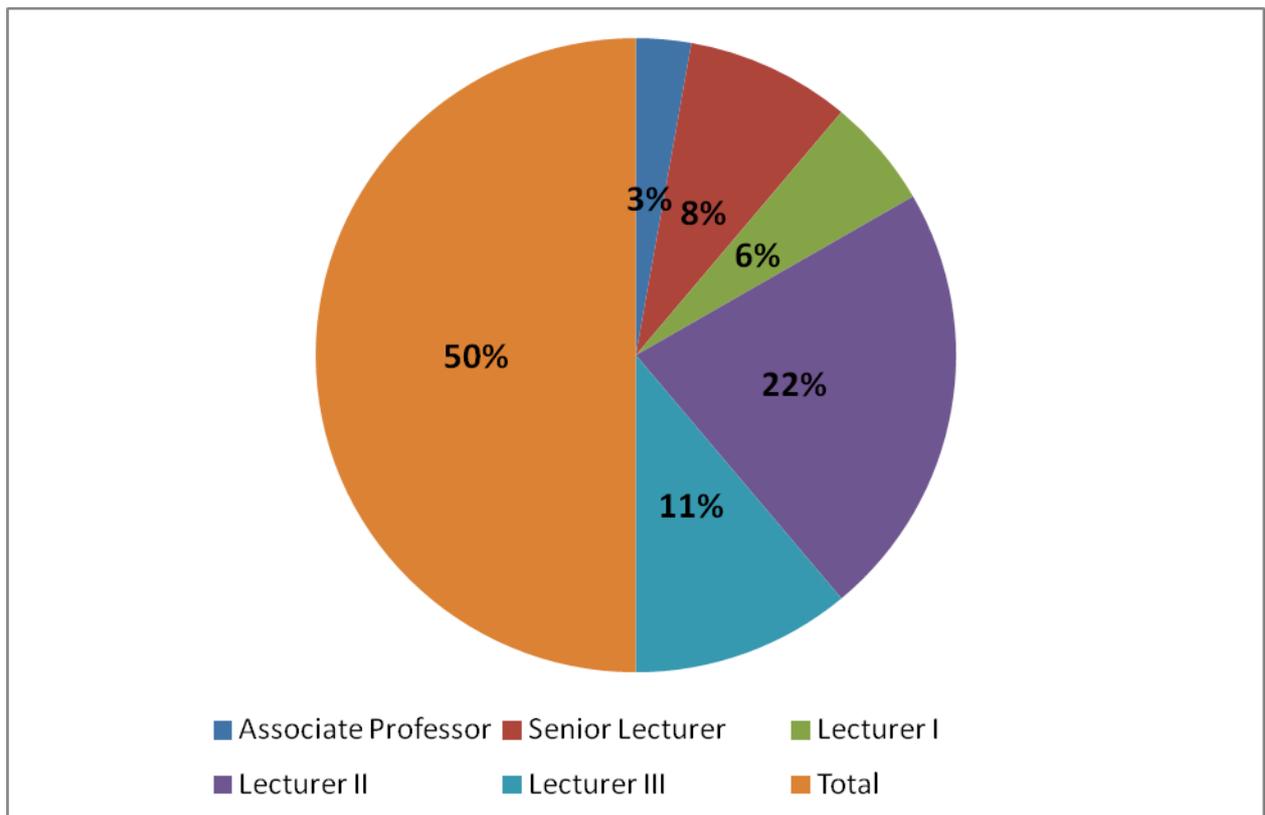


Figure 4; Positions held by respondents in the university

Figure 4 represents the positions held by the academic researchers who took part in the research study. The total number of academics holding a particular position is represented in percentages as labelled on the pie chart. Those captured included; Associate Professor 1 (3%), Senior lecturers 3 (8%), Lecturer I were 2 (6%), Lecturer II were 8 (22%) and Lecture III (4) bringing the total to 18 of the total respondents. These findings indicate that there were more lecturers II who were captured in the study.

4.2.3. Number of years in research

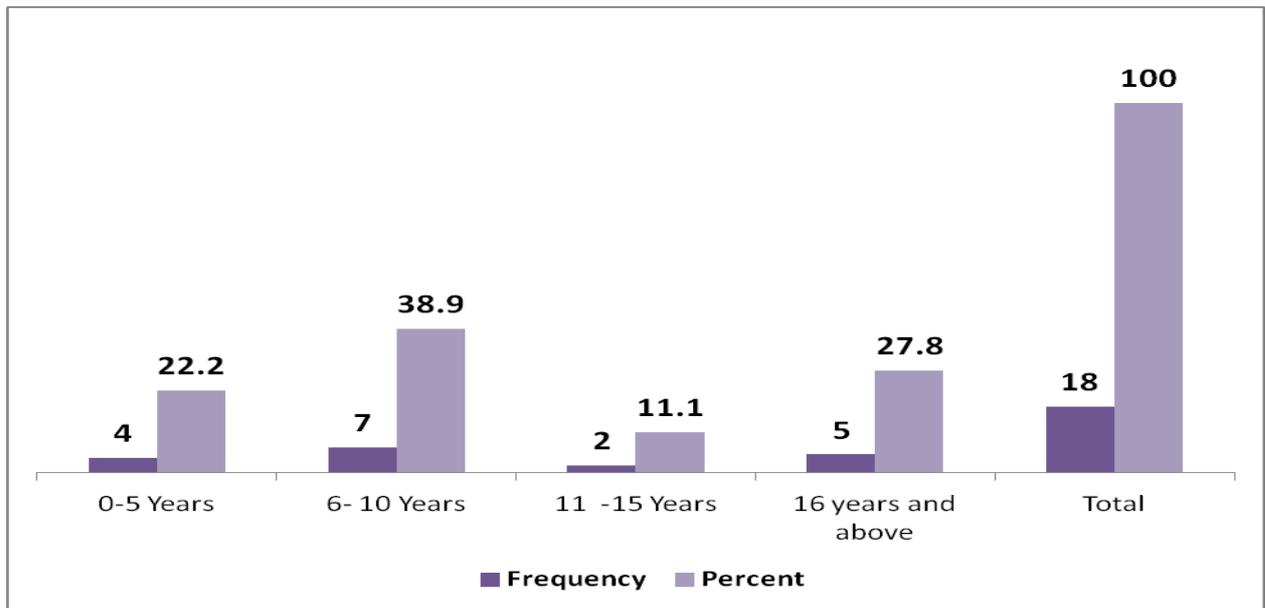


Figure 5; Number of years in research

Figure 5 above represents the number of years the researchers have spent in the research practices. The ranges start from 0-5years with 4 academics representing 22.2%, 6-10years with 7 academics at 38.9%, 11-15 years with 2 academics at 11.1% and 16 years and above of research with 5 academics at 27.8% giving the total number of respondents (18) at 100%. The study indicates that researchers who had spent 6- 10years in research were much more as the number was higher followed by the ones who had spent 16 years and above.

4.2.4. Research policy

Table 1; Research policy

	Frequency	Percent
Aware	9	50
Not Aware	9	50
TOTAL	18	100

Eighteen (18) researchers were asked a question if they were aware of the research policy at UNZA. Out of the eighteen (18) respondents, nine (9) were not aware of the presence of the research policy within the University while nine (9) were aware. The nine who were aware of the presence of the policy were mostly the senior lecturers and the lecturer I of which eight

(8) of them further indicated that the research policy was instrumental in enhancing research practices within the University as it provides a guideline on how research should be conducted and sets parameters of how often, when and why research should be conducted. However, one (1) respondent who is the Associate Professor indicated that despite the research policy being available; it is not expressive in indicating how research should be conducted. His argument was that the policy was not exhaustive in the presentation of the research guidelines which makes it difficult to follow.

From the desk top research and confirmation from one of the senior research academics was that the research policy is available except it has not been marketed extensively for academic researchers to be aware of its existence. However, what is not available and is in its draft format is a publication policy. As such the academics had a mix up of what is not in place causing a dilemma of what is available

4.2.5. Motivation for research

Despite the academic researchers not being aware of the presence of the research policy, they stated that they are fully involved into research which is motivated by the following factors;

- Personal Interest

The two (2) senior lecturers and one (1) associate professor indicated that their research activities are driven by personal interest. They are motivated by their personal desires to conduct research. For this reason, they are encouraged to keep researching despite the many challenges surrounding their research activities. These academics added that enjoying what you do everyday can make you overlook the challenges associated with the activity.

- Personal Experience

Further, the two (2) senior lecturers and (1) associate professor stated that, their research activities at the University of Zambia has been guided by the many years of experience they have obtained in the research practice which simplifies their research process. These academics added that experience offers the best training ground as through routine research work they tend to perfect the past mistakes and adopt new strategies of the whole research process in order to avoid some negative implications. These experienced researchers alluded to the fact that in terms of processes, they are currently seasoned and have gathered enough experience that is currently guiding their research activities.

- General Research ethics

Two (2) out of the four (4) lecturers III expressed ignorance about the presence of the research policy. However, what was clear was that despite the ignorance of the presence of the research policy, they stated that they conduct research by relying on other general research guidelines which are general research ethics. One of these lecturers III with these views further stressed that as a researcher, he follows the general research ethics that are standard in research practice regardless of the institution because research is conducted in almost all academic institutions and the general research ethics are similar which most of the researchers can easily adopt if the parent institution like as observed at UNZA does not have a clear policy framework to guide the research activities.

- For Promotions

At least all the eighteen (18) research academics interviewed stated that what motivated their research activities were promotions. The researchers explained that the University of Zambia just like other universities globally has a policy regarding the promotion of academics. An academician can rise from the lower rank of Lecturer III to associate professor depending on how many publications and contribution they have made in the research area. Therefore, academics interviewed stated that they conduct research for promotional purposes despite not having a favourable research environment. The aspect of promotion was seen as a motivational factor as it goes with salary increment when an academician is elevated to a higher position.

- External Project Funded research

Research academics from natural sciences disciplines explained that their research activities are motivated by external projects that are ready to fund their research in collaboration with the university. It was stated by one researcher from the natural sciences department that what is a constraint in such arrangements is time as in some instances two or more projects may be availed and funded while just waiting to take off. Specific research areas were cited such as climate change, health related and agricultural sciences as beneficiaries of such research funds. This is unlike other research disciplines where researchers look for their own research funds.

4.2.6. Institutional support.

All the eighteen (18) research academics interviewed expressed displeasure with regards to institutional support for research academics that the institution provided. One of the senior lecturers was specific in his argument as he identified many areas where the institution failed to complement their effort. He stated that, the institution in terms of funding was not instrumental as the leadership would always state that resources are ever meagre to fund individual research activities. Equally, there is no capacity building for researchers which would assure institutional support. In terms of research policy, there were some lapses. In terms of motivation of research academics, the senior lecturer stated that the institution tries to motivate the researchers through promotions. However, there is no deliberate policy of awarding the best researchers as such the effort is inadequate. The same senior lecturer observed that the leadership was not aggressive in initiating change towards the creation of a sustainable research environment and suggested the need for institutional commitment if a better research environment is to be attained.

4.2.7. Challenges in research practice

The research academics interviewed identified a number of challenges they were facing in their research activities. The challenges include the following;

- Lack of research funds.

Almost all the research academics from the schools of education, humanities and social sciences, and department of library studies expressed challenges in accessing research funds. The respondents from these disciplines pointed out that research is conducted without adequate funding making it difficult collect data as well as to publish the research with the most renowned publishers. However, some researchers pointed out that in some situations only a small standard amount is given in form of subsistence allowance for just 2 nights equivalent to \$200. As such, most of the research work is conducted under very difficult conditions such that the entire process is dragged due to lack of research funds. This is in situations where the research does not belong to a project which usually funds the research.

- Poor institutional support.

The academics from the schools of education, humanities and department of library studies stated that the University of Zambia does not offer much support to individual researchers.

This was obtained from the academics interviewed who stated that the institution does not provide research funds to individual researchers as well as offer research incentives to the outstanding researchers. As such, research academics expressed a lot of concerns with regards to institutional interventions on research activities that would motivate the researchers for the entire research process.

- Challenges of research publishing.

The lecturers III who are the junior researchers expressed serious concerns about how to publish their research works as the local publishers such as UNZA press and Ndola press charges are too high. The estimates are between \$150 and \$200. The experienced researcher's in this regard stated that they have managed to publish articles over the years through research collaboration where the researchers involved in collaborative works share the costs for publishing. Hence, they make personal arrangements with publishers and bear the cost of publishing their works. Despite the publishing challenges, the lecturers III indicated that they somehow manage to publish their research work by using personal resources for the sake of their job progression. The high costs charged by publishers are beyond what individual researchers can sustain as this is usually in foreign currency. For this reason, senior lecturers observed that the lack of institutional memorandum of understanding with publishers which would help lower the publishing costs can lead to a reduction in research activities by the academics.

4.2.8. Expected ideal research environment

The research study asked the respondents to describe an ideal research environment they expected to have. The responses included the following;

- Availability of funds

All the eighteen (18) academics interviewed stated that an ideal research environment must have research funds to support the research process. The associate professor in this regard explained further that availability of research funds makes research work easier as the data collection process tends to be cumbersome. Hence, in some instances, assistance of some people to help with data collection is sought and these people require readily available funds. Therefore, if funds are not readily available, the process is derailed and may fail to take off.

- institutional support

Senior lecturers observed that for the research activities to be successful in the university, there must be institutional support. One senior lecturer was specific by stating that this institutional support can be inform of direction which should be stated in the research policy with regards to how research should be conducted , published and disseminated. He stated that it is not enough to just ensure that academics engage in research but how the whole research process is managed should be a major concern. Lecturers II observed that an ideal research environment must have the institutional support to provide capacity building programs for researchers as this will broaden the knowledge base of the institutional researcher.

- well developed ICT infrastructure

The lecturers III observed that an ideal research environment must have a well developed ICT infrastructure as this can enhance the management of the research activities. One of the lecturers III stated that research activities in the information age can be challenging as information processes and access is determined by how well developed the ICT infrastructure is.

- Motivation of researchers.

All the eighteen (18) research academics stated that an ideal research environment must be where researchers are motivated. One of the senior lecturers was specific by stating that motivation in this regard must be where there is a deliberate reward system of the best researchers in place in order to encourage the researchers who are not self motivated. This mechanism according to the proponent was seen as having great yielding benefit to individual researchers and the institutional at large.

4.3. KNOWLEDGE SHARING BY ACADEMIC RESEARCHERS

The study was interested in identifying the knowledge sharing practices by academics at the University of Zambia. In this regard, knowledge sharing practices could be conducted by way of exchanging tacit and explicit knowledge among and by the researchers. This can be conducted through different platforms that the study in this segment sought to establish.

4.3.1. Knowledge sharing by academics at UNZA

Table 2; Knowledge sharing by academics

	Frequency	Percent
Yes	18	100
NO	0	0
Total	18	100

Table 2, represents the knowledge sharing behavior of the academic researchers who acknowledged that they share their knowledge. Out of the 18 interviewed, all of them indicated that they share knowledge in one way or another of which the response was at 100%.

4.3.2. Platforms of knowledge sharing

The 18 research academics stated that they all share their knowledge through publishing, conferences and workshops as this is part of their requirements as academics. In addition to these platforms, 13 out of 18 academics stated that they also use institutional repository as a medium of knowledge sharing while the other 5 who are the lecturers II and III made mention of LinkedIn as another platform for knowledge sharing.

4.3.2.1. Conference presentations

The aim of this question was to find out how many conference presentations the academics attend each year. This was in order to establish how frequent knowledge is shared by academics at this level. The findings of the study according to the figure below were that those who made conference presentations once in a year were 12 with a percentage representation of 66.7%, 2 times in a year were 3 at 16.7% and lastly 3 times in a year were 3 at 16.7%. The results indicate that most researchers attend conferences at least once in a year. Most of the junior lecturers also stated that often times they are able to attend a conference in a year through the associations they are affiliated to that tend to organise such annual conferences for its members. For such conferences, the university helps to meet the travel and lodging costs to support academics professional affiliations.

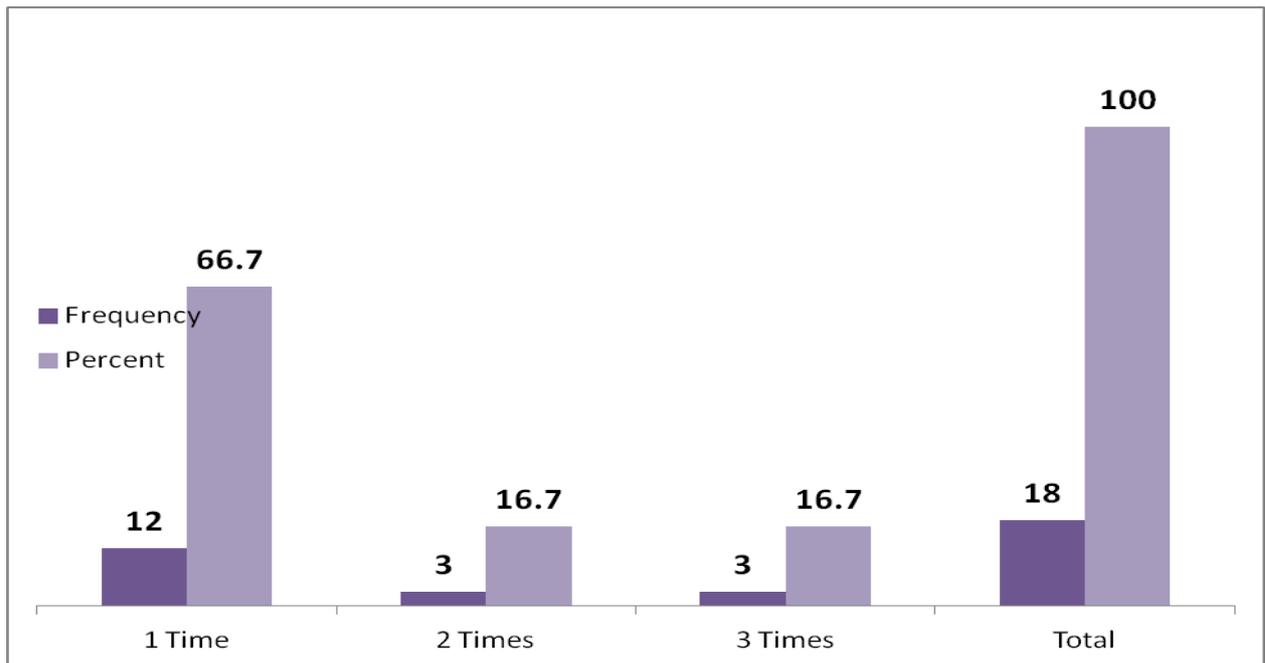


Figure 6. Conference presentations

4.3.2.2 Research publication.

This question was aimed at establishing how effectively knowledge is shared by academics through the publication of research works such as journal articles in the last one year.

Table 3. Research publications

	Frequency	Percent
Below 1	6	33.3
1-2	7	38.9
3-4	5	27.8
Total	18	100

The findings of the research were that; 6 academics published below 1 journal articles giving a percentage of 33.3%, 7 published between 1 and 2 (38.9%) of which most of them were lecturers III and II, 5 published between 3 and 4 (27.8%) journal articles. Therefore, most research academics published at least 1-2 journals in a year. Those who published between

3 and 4 were senior lecturers who do a lot of collaboration and others are journal editors for scholarly associations.

4.3.2.3. Research collaboration

In order to establish the levels of knowledge sharing and identify the reasons why researchers collaborate, research academics were asked this question. All the interviewed academics acknowledged the need for collaboration except it was at different levels.

4.3.2.3.1. Research collaboration at departmental level

Figure 5 represents research collaboration at departmental level. The findings of the study indicated that 14 (77.8%) academics interviewed indicated they collaborated at departmental level while 4 (22.2%) did not collaborate at this level.

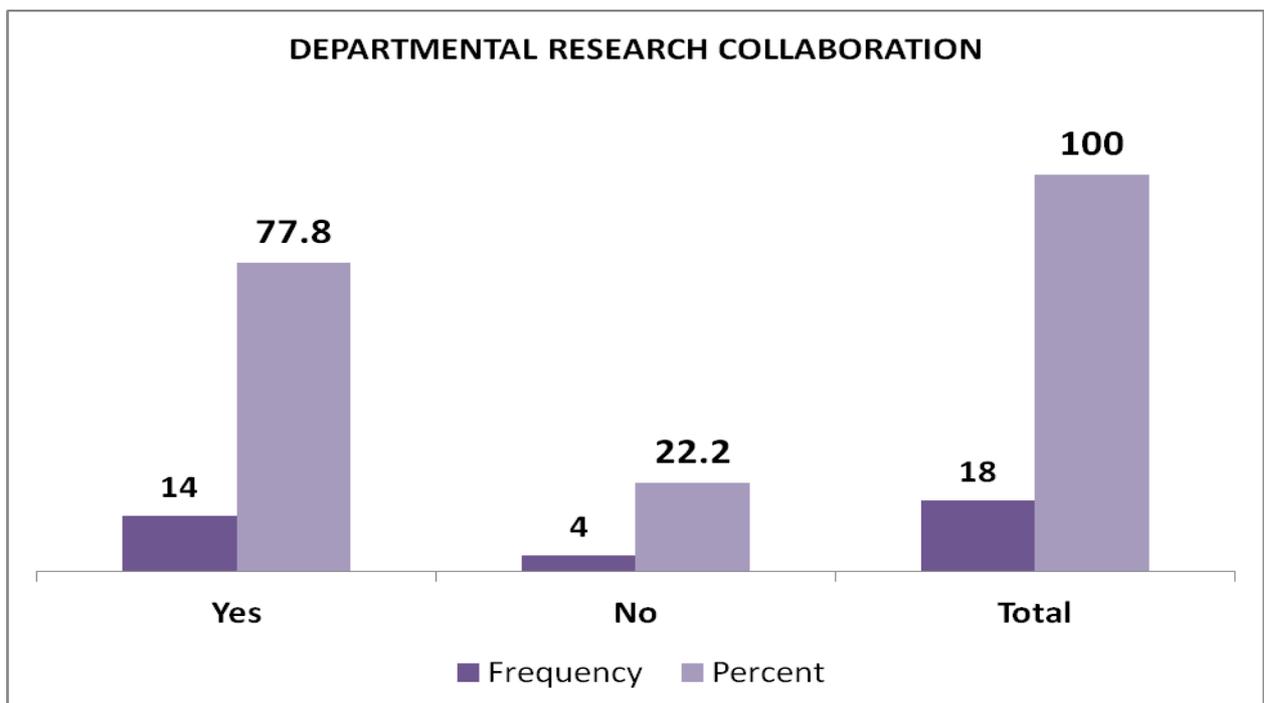


Figure 7; Departmental research collaboration

4.3.2.3.2. Research collaboration at institutional level

The question at this level wanted to know how research academics collaborated at institutional level. This was in order to establish the interdisciplinary research patterns among the academics. The findings according to figure 8 below indicates that, 3 (16.7%) of the academics interviewed were engaged in institutional collaboration whereas, 15 (83.3%) are

not. This means that there is less collaboration at institutional level and this information is across disciplines.

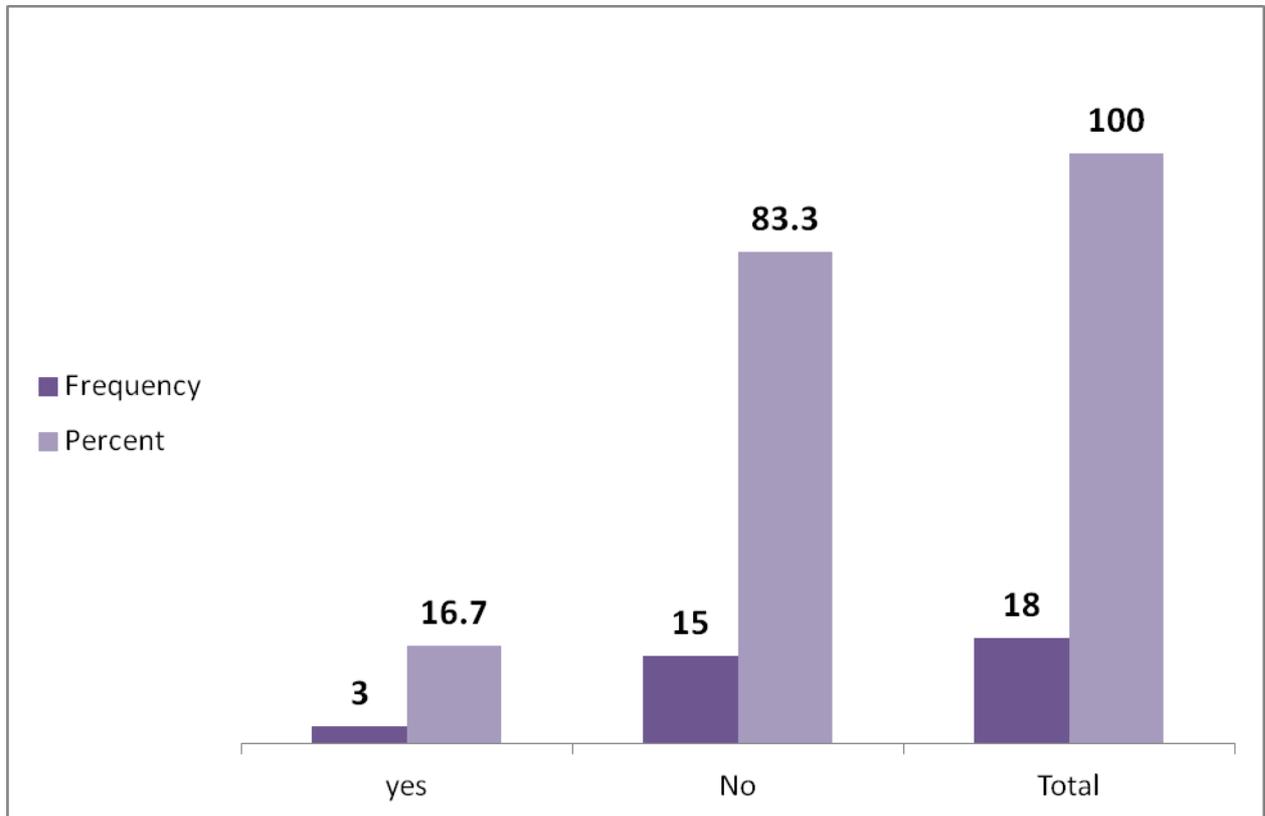


Figure 8; Institutional research collaboration

4.3.2.3.3 Research collaboration at national level

The study in this segment wanted to establish how many research academics collaborated at national level. This meant the interaction of the research academics through research activities such as publishing or authorship from the University of Zambia and other surrounding universities within the country so as to establish how effective the knowledge sharing at the national level is.

Table 4; National research collaboration

	Frequency	Percent
Yes	3	16.7
No	15	83.3
Total	18	100

Table 4 represents the frequency table for national level collaboration. The findings indicate that 3 (16.7%) participated in research collaboration at national level while 15 (83.3%) indicate they did not. Factors leading to this low level may be attributed to lack of institutional support which should spearhead research collaboration among and between institutions.

4.3.2.3.4. Research collaboration at international level

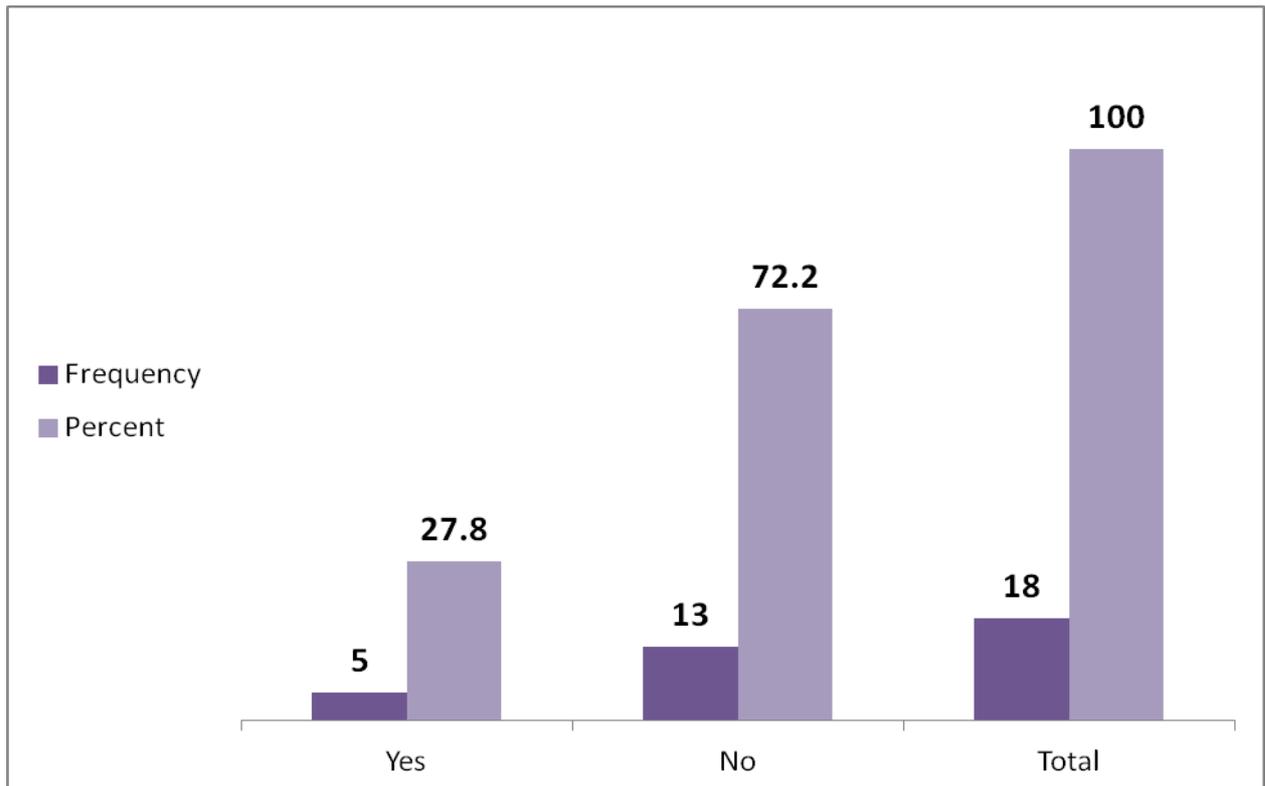


Figure 9; International research collaboration

Figure 9 was aimed at capturing the number of researchers at international level in order to determine the knowledge sharing practices of academics at this level. According to the findings, 5 (27.8%) collaborated at international level while 13 (72.2%) were not involved in international collaboration. The academics that collaborated at international level include the associate professor, the senior lecturers and some lecturers I. This category collaborated at international level because of the experience in academic research they have gained and have networked internationally through conferences and workshops.

4.3.3. Reasons for research collaboration

The research study in this question was aimed at establishing reasons for research collaboration and why research collaboration should be encouraged in order to understand the varied research practices of academics. The findings from the research indicate that all the researchers encouraged research collaboration and the reasons they cited for supporting research collaboration were varied which include;

- Cost sharing purposes.

Most researchers especially the experienced researchers like the associate professor, senior lecturers and lecturers I cited cost sharing as a reason for collaboration. These academics explained that it is costly to bear the costs required for conducting research from data collection to publication stage. This is because the institution does not allocate resources for individual research activities. However, the university in some situations allocate research funds to departments but it is not sufficient to meet the entire research costs. Furthermore, research funds are made available to research projects. These funds only benefit researchers who get attached to the project research and not individual research.

- In order to share expertise.

All the academic researchers interviewed explained that research collaboration is vital in the academic world as no one is a master of knowledge. People differ in opinions and interpretation of ideas. Therefore, the general perception from the respondents was that it is just in order to share expertise to broaden the personal knowledge base and learn from one another in order to have an understanding of where you have limitations.

- It is a global trend

Some lecturers III from the school of engineering stated that research collaboration is conducted because everyone in the world today is collaborating. Follow ups of this explanation revealed that global trends are necessary for they dictate the new environmental shifts and behaviours of conducting research. The researcher in this case explained that if they do not respond to such trends, they will lag behind as it is from such new trends that they can learn something new and never be left out.

- It enhances quality in research and authenticity

Lecturers III observed that research collaboration enhances research quality and authenticity. As a less experienced researcher, one respondent narrated that if research is conducted with a well known person who has done a lot of publishing, the outcome of the collaborated works will have that authenticity considering the value the person they are collaborating with has in the research circles.

- For mentoring and motivation of young researchers.

One of the senior lecturers stated that research collaboration is usually undertaken for mentoring and motivation of young researchers. The researcher narrated that research within the university is conducted under very difficult conditions but despite such conditions, an academician has to still publish in order to remain valuable in the academic profession or they perish. He stated that the only way to motivate and mentor the young researchers is through collaboration in order to orient the young researchers. As an experienced researcher, he suggested that collaborative works with the young researchers would encourage them to settle in the profession.

4.4. INFORMATION SOURCES FOR RESEARCHERS

The research study in this question was aimed at establishing the types of information sources that researchers at the University of Zambia have access to.

4.4.1. Information sources for researchers'

The research study found that among the information sources mentioned, they included electronic journals as the main electronic resources. One of the senior researchers from the department of library studies added that the library subscribes to about 50,000 electronic journals of which some of them are full access while others are not. There is no single database that offers all full text except for JSTOR databases as database as it is an open access. Other databases such as science direct which consist of Elsevier journals is a combination of full text and non full text access. The Cambridge university press provides 323 full text journals online. These cover all subjects ranging from social sciences, Education and natural sciences. The limitation in offering full text is due to limited subscription funds. Hence academics conducting research in other subject matters that are not full access resort to using print materials as well as the internet which is just too wide. Another source of

electronic information is Google scholar that provides easy access to electronic books, articles and only one junior researcher cited the use of Mendeley.

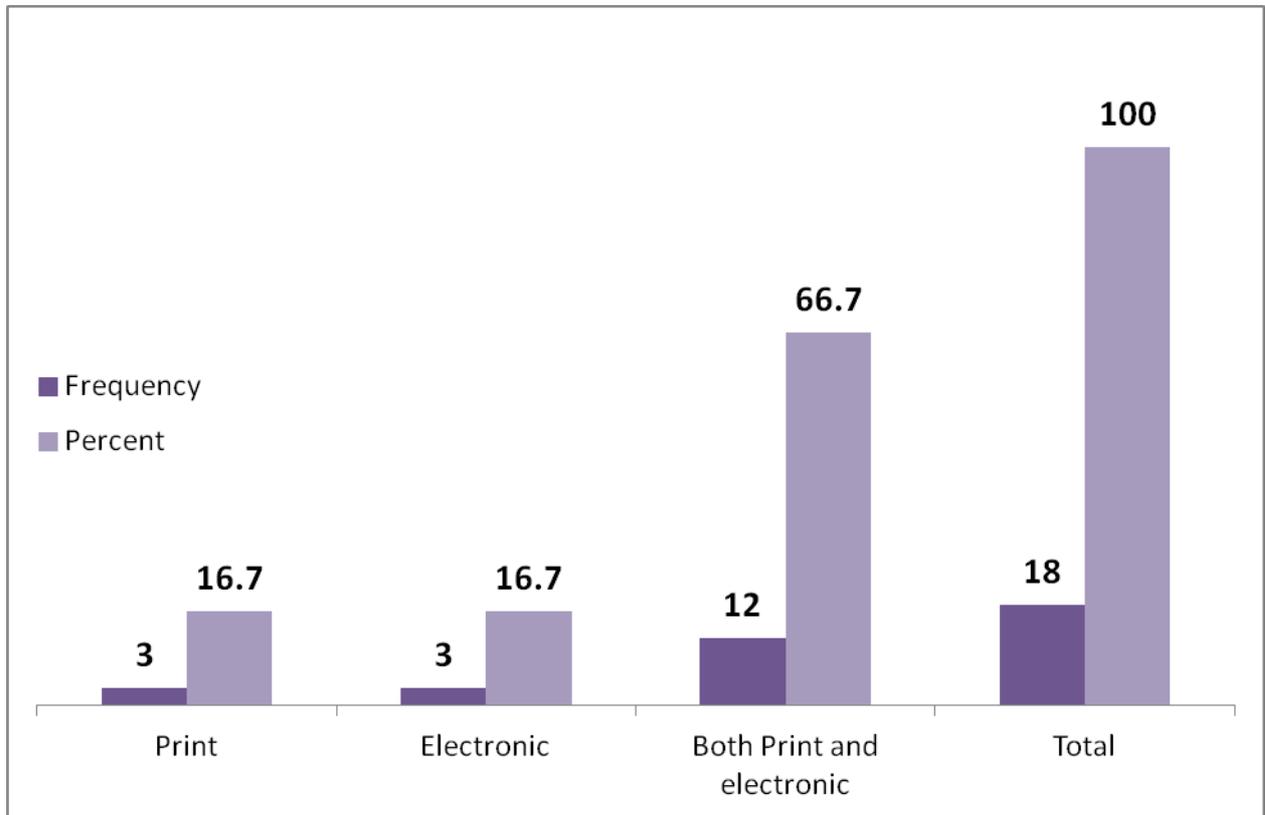


Figure 10; Information sources for researchers

The results according to Figure 10 indicate that; 12 (66.7%), researchers still use both print and electronic resources while those who use Print materials only were 3 (16.7%), and those who use electronic resources only were 3 (16.7%).

4.4.2. Problems in accessing information for research

In order to establish the role of an academic library in supporting research activities, a question was asked to establish the challenges researchers face to access information. The research found the following problems;

- Poor internet connectivity.

The researchers from the department of library studies narrated the challenges of the library in accessing internet as they usually interact with the library due to the courses that are library related. It was stated that the library experience intermittent internet connectivity due to power outages from the main supply line the Zambia electricity supply Cooperation

(ZESCO) which controls power supply to all areas in the country. Although the university has a power generator set, it can only supply power to a few designated places during power outages which entails that most places during power disruptions cease to operate normally.

Further, another researcher from the same department of library studies stated that internet connectivity is poor due to low bandwidth. Although the university has expanded internet access by use of wifi, the low bandwidth cannot allow fast downloads of documents. Moreover, there are restricted places where the wifi connections can be accessed from. The challenges of internet connectivity were identified as a major setback in information access for academic researchers.

- Lack of research skills by some researchers.

The researchers from the department of library studies stated that researchers fail to access valuable information due to lack of skills for information search which leads to information overload. The researcher pointed out that to most research academics; it is a challenge to find what information is appropriate due to information explosion. There is too much information and sorting out for relevance is a problem. Another experienced researcher added that it is pointless for someone to struggle with new ways of accessing information when they can still use old means which are books for they can still get similar information required as the process does not require any skills.

- Inadequate e-journal subscriptions causing limited access to e-resources

The research academic in the department of library studies stated that it is difficult to access all the electronic journals as the University of Zambia academic library does not subscribe to all electronic resources. The challenge the researchers brought to light was that they cannot have access to such electronic resources due to non subscriptions for some electronic journals. The information was echoed by one senior lecturer who stated that the library selects electronic journals to subscribe to due to insufficient resources. Therefore, the only popular electronic journals are paid for to supplement the print materials available in the library.

- Limited computers for information access in the library computer laboratory.

All the research academics interviewed cited limited access to public computers in the Library. They explained that the current library computer laboratory has inadequate number

of computers that can allow the researchers access online information resources anytime unless an individual has personal laptops.

- Obsolescence of print materials in the library as there is no restocking of new print materials.

All the eighteen (18) research academics interviewed stated that the University of Zambia library rarely restocks the library. The academic researchers narrated that the library is an archival centre with obsolete materials that has been overtaken by current editions. The expressions were that the old print materials are worn out and pages that may be of interest are torn.

4.4.3. Library services that support research

The research was interested in establishing other library services that supports research and the findings were that;

- Libraries offer a reading space for researchers

The senior lecturers stated that the library offers reading space to the researchers by creating a quiet conducive environment that is appropriate for reading. In ensuring that there is maximum utility of this service, the special collection in the library is specifically meant for researchers.

- Lecturers III and some senior lecturers observed that the librarians offer information services by identifying relevant materials for researchers in electronic or print format and make it available to the researchers who may require it. This is done through identification of databases as in cases of online resources which they in turn inform the lecturers about the availability of such information sources. It was established that the library subscribes for these online materials on behalf of the institution in order to support the research activities of the institution.
- Libraries provide information literacy skills

The lecturers from the department of library studies stressed that the university library provides information literacy skills to the academic researchers which are mostly inclined to access to electronic materials and not research skills.

- Libraries provide reference services

All the research academics interviewed stated that the library provided reference services in their research process. One of the lecturers II narrated his experience in the access of information in the library and appreciated the reference services rendered to him during the information search process.

4.4.4. An ideal academic library that supports research

The research study in this category wanted to establish the expectations the researchers had about an ideal academic library that supports research. The following were outlined as their expectations;

- All the 18 academics stated that an ideal academic library must have a fast and reliable internet services that can allow quick downloads of research materials. The academic researchers stated that in order to have quick access to the subscribed e-resources, the internet in the library must be fast and reliable.
- One lecturer from the department of library studies stressed that an ideal library must have efficient and skilled librarians who are quick to attend to the information needs of the researchers. This is from the realization that the research environment is dynamic and requires people who can quickly adjust to such challenges.
- All the academic researchers suggested that an ideal library must fully subscribe to all e-resources without restricting access to only some limited materials. The researchers explained that a library with full subscription to all e-resources would provide satisfaction in information provision as there is no limitation in accessing of other electronic information sources.
- The lecturers III proposed that an ideal academic library must have a latest stock of print and electronic information sources supported by an advanced information communication technologies facilities for easy access and retrieval of information.

4.5. VALUE OF KNOWLEDGE MANAGEMENT IN RESEARCH

This research objective was aimed at establishing UNZA knowledge management practices by assessing the knowledge management practices and processes within the University in order to determine the value of knowledge management in research.

4.5.1. Knowledge management processes

The findings were that:

- One of the senior lecturers in the department of library studies narrated the knowledge management process at UNZA by stating that the institution uses ICT to transfer organizational knowledge by embedding systems which are regarded as best practices. The lecturer explained that the university has a computer centre called Centre for Information Communication Technologies (CICT) which manages all the information technology related programmes. The centre is also responsible for managing research data by creating a link through the university website that provides information relating to research. The articles and other research output are forwarded to the library which is the custodian of the university information while the management of the software is done by CICT. For Instance, software called DSpace is embedded in the CICT main system and is used to upload explicit knowledge of the researchers which can be accessed through the main website under the institution repository. Academics are requested to submit their soft copies of the research publications which must be uploaded to the DSpace by the library. The information is later shared with others as open source information through the institutional repository.

4.5.2. Knowledge management practices

- The associate professor narrated that the institution has an organizational culture that embraces everyone through its management philosophy. He explained that the University of Zambia has a very strong organizational philosophy which embraces everyone. These strong connections are from departments where individual lecturers and staffs share teas and laughter in their respective places at tea break and lunch time. At institutional level, there is a staff canteen where during lunch time academics

have some social interactions over lunch. The respondents narrated that it is during such close interactions that serious academic discussions erupt and people share their feelings and inner expressions about certain things they know well. (Tacit Knowledge)

- Organized conferences and workshops

Most of the academics interviewed stated that academics conduct and attend conferences and workshops within and outside the university which are organized from departmental, institutional, national and international levels. The frequency of such meetings is determined by the availability of funds for participation by the university. It was brought to the attention of the researcher that most academics attend international conferences only if it is fully funded by the sponsors or the concerned researcher decides to sponsor the trip. However, there are certain instances when the university supports the researchers by funding the entire trip. The academics therefore explained that it is from such forums that experts transfer knowledge using different ways such as; storytelling, face to face interactions, and through formal conversations.

4.5.3. Barriers of knowledge transfer

The research study in this regard sought to identify barriers to knowledge transfer among researchers at the University of Zambia. The research findings were;

- Lack of motivation to share knowledge

The research academics complained that knowledge sharing is not effective as there is no motivation for sharing. The respondents brought out the importance of incentives in form of rewards as a way of encouraging those sharing knowledge with others. This activity enhances recognition that would encourage academics to share knowledge. One researcher suggested that it would be more satisfying to have a deliberate strategy of recognizing those who share their knowledge with others as a motivation strategy. The soft reward was said to have benefits not only to the individual but also the entire organization which would eventually have people increasing their output based on the benefits they get. The motivation aspect would make the knowledge transfer more effective because of the reward attached to the process in the end.

- Limited ICT facilities to support knowledge sharing

The researchers pointed out that knowledge sharing is not effective as expected due to limited ICT facilities attached to the systems that can promote personal interaction among researchers. It was explained that the email system is not sufficient to promote prompt chats among academics. Prompt messaging facility was appropriate for feedback and interaction to ensure the effective knowledge transfer. The study established that ICT facilities are necessary platforms that can be used to identify the knowledge sharing gaps and enhance knowledge transfer.

- Staff are reluctant to share knowledge with other colleagues

The lectures III pointed out that some senior researchers do not want to share knowledge with junior researchers. One of the respondents stated that he had encountered this situation where he made such observations. This was observed during some staff tea break, where some academics avoid visiting common rooms for interaction to avoid close relationship ties with others and this trend hinders knowledge transfer and sharing. Further, it was also pointed out that besides the face to face interactions which are avoided, there is apathy in the use of system based knowledge sharing. For instance, the CICT had included intranet mailing platform where academics could share knowledge but it has been abandoned.

- General lack of time to share knowledge

Most academics stated that time constrained their knowledge sharing. The researchers stated that the university is a busy environment where academics find no idle moments for social activities and interaction. The academics were of the view that knowledge sharing knowledge sharing can effectively take place in a social environment where there is a two-way interaction with feedback from both participants. Thus, inability to allocate time for interaction is a barrier to knowledge transfer.

4.5.4. Suggestions on improving UNZA research environment.

The study in this question requested the respondents to suggest ways of improving the research environment at the University of Zambia after identifying the challenges the academic researchers are faced with. The academics proposed that the university must do the following to improve UNZA research environment;

- At least nine (9) of the research academics who were not sure of the existence of the proposed of having a clear research policy that will direct the actions and procedures of the research in the university.
- One senior researcher, a senior lecturer in the university proposed for a need to have a deliberate system in place to motivate the researchers as a way of encouraging people who are not enthusiastic about research. As the situation stands, there is no deliberate strategy to motivate “best researchers” and upcoming researchers. The trend is demoralizing the academics who are involved in research activities.
- Most of the academics interviewed from the schools of Education and Humanities were of the view that the university should have research funds readily available for researchers who are willing to conduct research at any given time. This category of researchers was concerned because they rarely or do not have project funded research. The lack of research funds was established to be a major hindrance in conducting research.
- All the academics interviewed stressed that the library as an essential unit that support research in the university has to be modernized to acceptable standards of other academic libraries. Modernity in this regard involves providing a well ventilated and comfortable reading space to the researchers and offering online databases that can open without access limitation. The re-skilling of the librarians was another aspect proposed by the academics from the department of library studies who suggested that the research environment with the support of the librarians who are knowledgeable in their various designations can help in improving the research practices of academics.
- The academics from all the schools suggested that the ICT facilities such as intranet and other interactive forums be improved. ICT was seen as an enabler in research activities as it breaks boundary spanners.
- Lecturers III proposed encouraging the senior researchers to mentor the young researchers as there is less if not any research collaborations between young researchers and senior researchers. Therefore, the researchers III proposed that there should be a deliberate strategy to encourage mentoring of young researchers.

- All the academics proposed the promotion of strong collaboration among academics regardless of disciplines. This was purported to be a way of learning from each other.
- One senior lecturer from the department of library studies suggested the building of tools that gather research outputs such as big data. The researcher observed that in order to build a strong research environment, the institution must have an organizational memory where other people will refer to when conducting future research. As such, the suggestion that the institution must invest heavily in gathering research tools that are used to gather data and disseminate it accordingly.
- One senior academician who is also a journal editor for academic research papers in the department of library studies proposed the improvement of electronic publishing since it is cheaper to maintain. He stated that spending a \$100 for publishing as it is with some publishers is quite expensive. A number of academics interviewed expressed challenges in publishing their research works. As such electronic publishing can be the only solution to this problem.
- The associate professor who is seasoned in research proposed that there must be continuous capacity building for all the researchers such as training and workshops within the university for all the researchers. This was after expressing some irregularities that exist in the way research is conducted. The proposal is aimed at addressing some of these irregularities that can be corrected through such trainings.

4.6. CONCLUSION

This chapter presented the results from the conducted interviews. The findings of the study were presented in line with the research objectives which were further subdivided into specific sub topics to comprehensively present the findings. The topics included were; knowledge sharing; knowledge sharing platforms, research collaboration; types of research collaboration, information sources; types and problems in information access, library services to support research, value of knowledge management in research; knowledge management practices and processes, barriers to knowledge transfer and recommendations to improve research environment. The next chapter interprets and discusses the study findings as presented in chapter four. The interpretation and discussion will equally be guided by the research objectives which will determine the structure of the chapter.

CHAPTER FIVE

INTERPRETATION AND DISCUSSION OF RESEARCH FINDINGS

5.1. INTRODUCTION

This chapter interprets and discusses the findings presented in chapter four. The interpretation and the discussions are meant to explain the meaning of the findings from the study in relation to the objectives of the study. The research practices of academics at UNZA as presented by the findings will be ascertained from assessing all the four research objectives of the study. However, it can be mentioned that the first objective is the main objective of the study and all the other three objectives fall under its umbrella. Therefore, responding to the research question of the study will be conclusively attended to in the conclusion. At the end of this chapter, a summary will be provided.

5.2. RESEARCH PRACTICES OF ACADEMICS AT UNZA

The first objective of this study was to investigate the research practices of academics at the University of Zambia. The research study at UNZA established that the research trends of academics are characterised with many challenges just like many other universities in low income countries. Research behaviours and trends established regarding the research practices of academics at UNZA are not as to the expectations of the researchers due to factors such as; inadequate funding, lack of institutional support, and poor enforcement of a research policy. These factors have negatively impacted the Unza research environment. This resonates with the observations made by Olsson and Cooke (2013) that low income countries are still struggling with so many issues like policy frameworks that would respond to their knowledge economy. As such, they have failed to come up with a strategy that would help them establish a better research environment in their respective countries.

5.2.1 Research Funding

The study undertaken illuminated that the University of Zambia is going through a lot of financial stress to manage the university affairs such that sourcing of research funds is also constrained. The University of Zambia relies on the national government to finance the University operations of which the resources are never adequate. Just like it was stated in chapter two by Zeleza (2009), financing research institutions in Zambia is constrained by national policies and priorities by governments which allocate funds to various sectors of the economy based on immediate needs. For instance, the education sector where universities fall

under is not usually given priority attention as evidenced from the 2016 budget review which presented 17.2% of the overall budget, a reduction of three percentage points from 2015 (UNICEF, 2016). In 2006, the government provided only a k500 million kwacha to UNZA for research activities (UNZA Research Policy, 2009). These allocations do not match with the UNZA research requirements which are beyond such allocation support research activities. It is from these inconsistent budgetary allocations that the university does not allocate funds for research to individual researchers unless the research is on project which is introduced with its own budget due to financial constraints.

However, some respondents stressed that a small amount is allocated to departments for research which is equated to just \$200 per individual researcher and this amount may not always suffice to conduct research. This makes the whole process of research impossible and difficult. In other situations, academics from other research disciplines such as natural sciences and medicine manage to conduct research with the support of project funds as these are faculties that have an advantage of projects funded by donors from time to time due to the nature of the subjects which have an advantage of global support. Therefore, academics who are left out of such favours still sacrifice their personal salaries to fund their own research. They also engage in research collaboration to cushion the research related costs. This study in this regard adopts Katz and Martins (1995)'s observation who stated that most researchers have gone into research collaboration for cost sharing purposes as this is what is obtaining at the University of Zambia.

A culture of quality research and inquiry is essential in a University to promote a quality output. Due to financial challenges explained above, it is difficult to live to these expectations as quality of research at UNZA is compromised. Altbach and Balan (2007) in this respect suggested that African University must adopt new trends of research that is funded than emphasizing on the basic research that may not yield any profits. This is through the commercialization of research that can have significant implications for universities as research institutions. Probably this would be the only option to rescue the current financial situation of research activities in most African universities.

5.2.2. Institutional Support

The study in this regard established that the University of Zambia as an institution has a management philosophy that embraces everyone by promoting unity and having shared values for attainment of a common goal. To a large extent this has helped research academics

to conduct research in the manner they do because of this institutional support. Organizational culture according to Clegg et al (2011:221) comprises the deep basic assumptions and beliefs as well as the shared values that define organizational membership and habitual ways of making decisions and presenting themselves and their organization to those who come into contact with it. This will inculcate in members a spirit of team work among all researchers. Research activities in universities must have the institutional support that will ensure that positive change to conduct research. This can be achieved through many platforms such as establishing an organizational culture and philosophy that embraces all members of the organization and provide appropriate systems that support such activities.

However, there is discontentment in the way the institution responds to some research academics demands which affects their research activities creating a situation that the research activities are not supported by the institution. For instance, in the area of research publications, academics are dissatisfied with the institutional commitment. Institutional support provides the basic foundation of organizational activities through the guidance from the leadership. The research academics at UNZA complained of the absence of the institutional support in their research which they stated is the reason their publications are low. In view of this, the assertions of Nakimuli and Abanis (2015) that there is a positive correlation between institutional support and member's performance as stated in literature supports the findings of this study. Further, institutional support involves capacity building which concentrates on providing new skills and retraining the staffs on conducting a particular assignment. Apparently, the findings of the study were that the university rarely conducts research training to the members of staff to equip them with the new skills and refreshing their memory. The findings are in line with the observations made by Mony et al (2005) that researchers in developing countries are seriously underrepresented in various areas of research and observed that capacity building is essential to improve and bridge the gap that exists in research standards. Therefore, the University of Zambia must consider capacity building as a means to improving research standards within the university.

5.2.3. Research Policy

Research policy is critical in establishing a research environment for researchers. Research policy is supposed to offer guidance on what is expected of academics in their research. The policy must be clear on following the research ethics. However, at national level, government is keen in supporting the knowledge economy through research development. This is evident

from a number of documents the Zambian government has endorsed to support research such as the Zambia Telecommunications act of 1994, the science and technology policy of 1996, the vision 2030 in 2005, the national ICT policy of 2007 and the Ministry of Education policy of 2009 (UNESCO,2017). All these policy documents highlight the need and importance of the knowledge economy.

At institutional level, the research policy as obtained from the findings is available but not enforced in ensuring that it clearly offers clear guidelines on how research should be handled in the university. The evidence according to the findings of the research indicates that 50% of the respondents were not aware of the existence of the research policy while the 50% were aware. Among those who are aware, they added that even if the policy is in place, it is not very elaborate hence a controversy as to whether it is a policy or just some paper offering some guidelines. The desk top research findings and what was obtained from one senior academic researcher clarified this dilemma by proving that the research is available and what is not in place for research academics is the research publication policy which is still in draft format. (See Appendix 5) This is a reason for the confusion that exists as to whether the policy is in place or not. A research policy however has not been publicised and enforced as it was only established in 2009 and lacks some important components like the publication policy that must go with it. This is an indication that the University of Zambia as an institution conducts research in an unfavourable research environment without proper research guidelines such as the publication policy. What is therefore required is a research board that must oversee the research activities in the university. The findings of this study therefore supports Njuguna and Itegi (2013) observations that a complete research policy is one of the factors that can contribute to having a favourable research environment. Without this research policy, all research activities can be conducted in a haphazard manner

5.2.4. Research Motivation

Motivation is one of the critical issues managers of research organizations should consider in assuring quality of research work. Motivation is necessary whether you are a researcher or you are a leader of others. Hence, Clegg et al (2008: 153) observed that there are two key concepts to motivation. These are intrinsic and extrinsic. Intrinsic motivation arises when internal states drive us towards behaviours that directly meet self actualization and belongingness needs. Extrinsic is motivated by extrinsic factors such as the promise of

reward or threat of punishment. Hence, an individual's ability to perform a particular assignment is driven by these two factors.

5.2.4.1. Motivation factors

Conducting research in an environment that is encountering so many challenges requires a lot of motivation. In research practice, the study sought to establish the underlying factors that were regarded as push factors in conducting research at the University of Zambia despite the many challenges the study established. The research academics at the University of Zambia are motivated to conduct research because of the following factors; promotions, personal motivation and experience.

In view of promotions, the study established that academics are promoted to higher ranks based on the number of publications an individual researcher publishes in a year. The promotional factor pushes many academics to engage in research in the quest to get promoted. The promotion in this respect acts as an extrinsic factor as academics conduct research based on the reward of promotion being assured. The assertion is backed by the findings of the research where a large number of researchers who published more research papers indicate that they were in their mid career the lecturers III and lecturers II. This is the category of staff that is enthusiastic in their job rise hence they commit to conduct research in order to grab the opportunities that may come their way as the more they research, the more chances they get to be promoted.

On the other hand, experience was identified as another push factor to conduct research. This was evident from the research findings where the second highest category was the researchers who conduct research using personal experience and seem not to be affected by the research challenges but manage to survive amid challenges using their own experiences. The main reason they are actively involved in research is to do more publications in order to remain in the profession. Hence, job is the reward system.

The last factor was personal motivation. Some research academics stated that their research activities were driven by personal enthusiasm. Clegg et al (2008) pointed out that personal motivation is an intrinsic motivation which is characterized by a behavior motivated by intrinsic factors such as self expression, interest and enjoyment. In relation to this research study, academics were motivated to conduct research as an enjoyable activity as well as an interesting process.

However, what was clear from the findings was that there is no deliberate mechanism of motivating research academics who conduct research often besides getting promoted in the career due to many publications. Therefore, this study supports the finding of Njuguna and Itegi (2013) that research conducted under such environments can be characterized by manipulation and loss of authenticity for it is conducted under conditions that are not motivating.

5.3. KNOWLEDGE SHARING IN RESEARCH

The aim of this objective was to examine how knowledge is shared by academic researchers at UNZA. This is in relation to their research behaviours in the creation of new knowledge and how they finally disseminate what they individually produce.

Knowledge sharing in research practice is an interactive social phenomenon where researchers have to identify a platform of knowledge sharing by fully understanding the research partners in generating new knowledge. Langerak et al (2004) concluded that satisfaction with member to member interactions and inter organizations and organizer member interactions have positive effects on member participation. Trust has been identified as a key element in fostering the level of participation or knowledge sharing in research activities. Further, knowledge (Tacit Knowledge) sharing as observed by Nonaka (1998) can only take place where there is a shared place for interaction “Ba” –a context which harbours meaning. Nonaka subdivided “Ba” into four categories which included originating ‘Ba’, Interacting Ba, cyber Ba and exercising Ba the place where individuals develop empathy, share feelings, emotions, and experience and mental models. It relies on face to face interaction. Therefore, knowledge sharing can take place in an environment where people interact and this happens either formally or informally as long as there is successful knowledge transfer.

5.3.1. Knowledge Sharing at Unza by researchers

There is no explicit knowledge management practice regarding research activities at UNZA as there is no research policy to offer the guidelines. Nonetheless, Knowledge sharing in relation to research activities was exhibited through various means such as, research collaboration, workshops and conferences, and journal publications.

5.3.1.1 Research Collaboration

Research collaboration at UNZA was established as one of the means of knowledge sharing as earlier observed by Jacobs (2008) that most African researchers engage in research collaboration for expertise and cost sharing. The research collaboration at the University involves the conducting of research between two or more academics as well as engaging into research projects between the University and other research organization locally and internationally. Therefore, research study established that the University also conducts a number of research projects in collaboration with other organizations who fund these research projects. Mostly, the projects are scientific in nature hence involving the academics from science related faculties such as natural sciences and medicine.

Further, the study established that higher levels of research collaboration are at departmental level where academics conduct research in partnership and co –author the research study. The departmental knowledge sharing is made easy because of daily interactions among staffs within their offices which enhance the collaboration. This justified Nonaka’s (1994) views that tacit knowledge can be shared when there is a place created within the organization for socialization. The social interaction that takes place at tea break at UNZA reinforces the personal interaction and trust among the researchers. It is in relation to this that, Langerak (2004) observed that the need to trust the person you are relating with is cardinal in order to share tacit knowledge. This is because tacit knowledge is personal and can only be told in different forms such as stories. Because of its nature, it is prudent to trust the person you have a conversation with. These findings confirm what Nonaka and Takeuchi (1995) found in their Japanese companies study that personal relationships developed in the context of organizational retreats often resulted in the sharing of tacit knowledge.

At institutional level, research collaboration is minimal. Institutional collaboration is where researchers collaborate across disciplines. The study established that 16.7% academics interviewed collaborate across disciplines while 83.3% indicated they do not. In research, it is important to collaborate in all areas of study to allow for expansion and adoption of new skills of research from others. The findings are similar to what Qin et al (1979) observed that there are variances in research collaboration among interdisciplinarity. However, the research did not establish why the research collaboration variances occur among different disciplines. Moreover, it concentrated more on the scientific disciplines where as this study was interdisciplinary. As a result of these findings, this study is able to conclude that the inability

among academics to collaborate with each other at institutional level is because of the challenges in capturing the content and context of research topics which is perhaps difficult to harmonize among the researchers of varied disciplines. These challenges can be overcome especially considering that some research disciplines within the University tend to have more opportunities in terms of finances for research which is a great window for many to conduct research favourably.

The research collaboration at national and international level indicates that 16.7% academics collaborate at national level while 83.3% do not. At international level, 27.8% collaborated at while 72.2% did not. These findings reveal that knowledge sharing at UNZA is minimal at national and international level reiterating challenges attached to this collaboration by Newell (2000) that when partners in research projects are in two different localities, they tend to fail to make progress and communicate due to boundary spanners which can only be overcome by the enhancement of ICTs. ICT at Unza is not fully developed to facilitate research activities within and outside the University as it is still under development. The UNZA website is limited to mostly information platforms and not interactive platforms that can enhance knowledge sharing.

It should also be stated that this research study did not discover any variations in research collaboration arising from various research disciplines which earlier studies in chapter two alluded to. Instead, this research discovered that most researchers collaborated within their research disciplines and what was different was just the level of collaboration. Further, the study established that the academics that have been in research for a long time are the researchers who collaborated at international level. This is because of their experience and connections in the research practice rendering them an advantage over the young researchers that are still trying to get a grip of the practice and establish international connections.

5.3.1.1.1. Reasons for research Collaboration.

The research study established a number of reasons why researchers engage in research collaboration at Unza. The researcher in this regard wanted to establish the research practices of academics and reasons why academics at UNZA conduct research in the manner they do. The reasons that were established include; cost sharing, sharing expertise, global trend, enhancing quality and authenticity, and for mentoring and motivation of young researchers.

The research study discovered that one of the reasons the research academics collaborate is for cost sharing purposes. The researchers conduct research in partnership with their colleagues which they eventually share costs. The costs cover the entire research process from data collection to publishing. As it was earlier established, the University does not provide research funds to individual researchers unless the research is under a project. Therefore, research collaboration is a sure way of managing to conduct research in an environment with poor funding.

In addition, research collaboration is meant for sharing expertise. The research academics interviewed acknowledged that in the academic environment, *researchers must remain open to others in order to learn new things*. These findings are similar to the research findings of Katz and Martins (1995)'s research which established that research collaboration can take a form of sharing data or ideas by visiting each other through performing part of project depending on the form the research is undertaken. Therefore, the main aim in this context is to share the expertise and adopt new skills from each other.

The study also discovered that research collaboration is conducted because it is a global trend. The academics who were interviewed cited global changes as having an influence on their research activities. As such, it was mentioned that every researcher is involved in research collaboration hence they cannot lag behind as it can be associated with some positive outcomes which they wish to be part of. The findings of this research have brought out a distinct reason for research collaboration for it seems to stand out from other studies that the literature reviewed. Therefore, this becomes a gap of this research with previous researches as it has revealed a unique phenomenon which other studies could not identify.

Research collaboration is necessary to enhance quality authenticity. Research academics pointed out that in instances where the young researchers collaborate with the seasoned researchers and publish their research, there is usually a desired recognition as the paper may be considered to be of quality and have some authenticity. Hence, research collaboration is considered as a means of establishing oneself in the profession as it will help the research academics to publish quality work. In this regard, research collaboration is also considered as a means to mentor young researchers as well as to motivate the young research academics. In the quest to gain expertise from each other through collaborative works, there are salient benefits that young researchers obtain from such actions which include learning from senior researchers on the trends of research.

The research findings on the reasons for research collaboration departs from Katz and Martins (1995) research which included factors like; requirement for more complex instrumentation and increasing specialization in science of which this research did not establish. The differences in the two research findings emanate from the differences in the nature of the research. Katz and Martins research was more of a scientific project research while the current study was centred on the academic scholarly work that did not require assessing how project research is conducted. However, both types of research acknowledged that the main aim of conducting collaborative works in research is to help each other with ideas and materials for easy undertaking.

5.3.1.2 Conference presentations

Conference presentation was another factor that was used to investigate how academics share knowledge. The findings of the study from the conducted interviews were that academic researchers make conference presentations at least once in a year. The junior researchers also stated that this once in a year is made possible because of the professional affiliations they make to the subject associations that tend to organise annual conferences. The researchers stated that such annual conferences attract financial support from the university as it is part of the professional development of the affiliated academics. Hence it is an opportunity to share their knowledge. The less frequency in conference attendance and presentation is attributed to lack of opportunities to share knowledge and equally tap some tacit knowledge elsewhere. This affirms the UACES (2014) observations that attending academic conferences helps scholars improve their own skills and knowledge about their field. It is also regarded as the only way to network and establish research partners. Therefore, the more researchers interact with others, the better the opportunities in their research practices. The study in this regard observed that the academics did not have opportunities to attend conference meetings due to financial limitations which are needed for every trip to cover all related conference costs. The research academics in this regard expressed concerns for lack of funds to attend such conferences. Hence; they rely on sponsored conferences that can help mitigate their financial challenges. In some instances, the research academics sponsor their individual trips depending on the importance they attach to that particular conference. Conferences are platforms that researchers use to get the much desired connections in their careers.

5.3.1.3. Research publications

The study established that academics also share their knowledge through Journal publications. In the academic environment, publishing is the only means of surviving as it is the only way academicians rise in their job profession. According to Guedon (2001) research centres and universities often use journal impact factors to gauge or measure institutional ranking by looking at how many publications are made from the research centre or university by various researchers. The research through the desk top findings established the academics have no stipulated standard of how many journals they can publish at a time since the publication policy is still in draft form (see appendix 5). Hence, from interview findings, most research academics publish one to two journals in a year of which the majority were lecturers II and lecturers III. A number of academics did not publish any journals at all. The academics who published between three to four journals in a year were senior lecturers that had an advantage of collaborating with other researchers elsewhere and had also a privilege of being journal editors which became a push factor to publish as well. The rate at which journal publications are conducted at UNZA is sufficient considering the research environment the academics are in.

The findings are in line with what was observed by Zeleza (2014; 1) who stated that African research institutions have made an improvement in publications despite financial challenges. He stressed that there was a positive increase of publications from 11776 in 2002 to 19650 in 2008. Another comparative growth emerged from the latest assessment using the Scopus database for peer reviewed publications that over the period 2008-2010, African publications grew by 43% compared to the world average of 18%. (African observatory for science, technology and innovation, 2013). The motivation for publishing is promotion to higher ranks within the academic circles. This can be confirmed from the findings of this study where the majority of academics who made an effort to publish between 1 and 2 journals were lecturers III and II who are working hard to get promoted to higher ranks. Therefore, the need for scientific journal publishing in the academic circles cannot be overstated.

5.3.2. Knowledge transfer channels.

The knowledge transfer channels fall under the knowledge management system which according to Alavi & Leidner (2001) refer to a class of information systems applied to managing organizational knowledge. These include information technology based systems

developed to support and enhance the organizational processes of knowledge creation, storage /retrieval, transfer and application. Knowledge transfer channels as earlier stated by Holtham & Courtney (1998) can be formal, informal, personal or impersonal. This is similar to what the research established that research academics transfer knowledge using different Medias like social Medias such as LinkedIn .They also use open source access such as Institutional repository provided the channels are efficient. However, the efficiency and effectiveness of these Medias at UNZA has been determined by the systems in place that support such knowledge transfer and not necessarily the research academics. The study established that researchers opt to share their research output through the institutional repository which is an IT based system with embedded software that allows for uploading and retrieval of the codified knowledge. These channels according to previous literature reviewed are best practices of sharing and transferring knowledge. They include common applications like; coding and sharing of best practices .However, research academics expressed other concerns regarding the nonexistent of the knowledge networks that are interactive in order to allow researchers exchange ideas and best practices with the system and research partners. Previous research by Ruggles (1998) proved that creation of knowledge networks was functional in allowing for quick communication among expertise across and within organizations which brought people together to build collective knowledge. It is assumed that if such networks are put in place at UNZA, researchers can easily learn from each other and adopt new ways of research.

5.4. ROLE OF ACADEMIC LIBRARIES IN RESEARCH

The aim of this objective was to investigate the role of academic libraries in research in a University. The extent to which the academic Library supports the research practices in a University determines how favourable the research environment is for research activities.

5.4.1. Academic libraries

Academic libraries according to Dowler (1997) are primary gateways to knowledge. In research, the role of an academic library is to enhance access to information. Research information can be presented in different formats such as electronic or print as long as it is of value to the researcher. In a digital age, academic libraries have assumed new roles of digitizing their information sources and provide information that is in electronic format. This is similar to the views of Campbell (2006:17) that libraries in the new digital age are involved

in providing quality learning spaces, creating metadata, offering virtual reference services, teaching information literacy, collecting and digitizing archival materials and maintaining digital repositories. Therefore, libraries that have not managed to provide these services in the digital age are considered to have disadvantaged its researchers in accessing quality information.

5.4.2. Information Sources at UNZA for research

The findings of the research were that most research academics at UNZA use both print and electronic materials for their research. The library does not provide for full access of electronic resources. The assertions are drawn from the research findings which clearly indicate that the library subscribes to almost 50,000 electronic journals which are not all full texts. The articles are indexed from many databases as no single database covers all journals in providing full text. For instance, the Cambridge journal online provides 323 Cambridge university press online in all subjects such as Arts and Sciences. In addition, the American institute of physics offers publications on conference proceedings. There are other databases such as JSTOR and Science direct where the journal articles are drawn from. (<http://library.unza.zm/e-journals>). This is contrary to libraries in Europe that subscribes to complete full text electronic journals for its researchers. The comparison can be drawn from the earlier observation made in chapter two by Jubb and Green (2007) where the research that was conducted in the United Kingdom indicate that researchers use more of digital materials than print for their research which is an indication that the digital materials are fully accessible. This finding becomes a concluding point that there is a discrepancy in research practices of academics between universities in an African setting and those of European countries. However, the researchers at UNZA indicated that they can access some electronic resources such as electronic journals and Google scholar although with challenges because of unreliable internet connectivity as well as failing to have full access to electronic journals due to limited subscriptions. The findings of this study affirm what was earlier observed by Hawkins (2000) that libraries must learn to adapt by appropriately modifying supporting and discarding services while maintaining the core value that are important. The University of Zambia academic library to the contrary has not adopted the new ways of information provision based on the findings of the study.

5.4.3. UNZA library services that support research

The Library as an essential department in the research institution is expected to support research activities by providing supporting services. The study in this regard established that the University of Zambia academic library provides the following services to support research; reading space, relevant information, research skills and reference services.

5.4.3.1. Provision of reading space.

The University of Zambia Library provides reading space to the academic researchers. The space for research academics is made available in the special collections department which provides the favourable reading and research environment specifically for the researchers. The special collections department is one of the departments in the library that stocks books that are indigenous to the Zambian situation, and also publications from international organizations such as World Bank, and UNICEF. The department also stocks government publications. As such, the department is reserved mainly for research activities of the university. The value of this service is that it specifically promotes research activities which are a motivation to research academics. As such the department is a closed access to undergraduate students to avoid congestion. The academics therefore expressed gratitude over this service as it creates an enabling environment for them to conduct research in an organized atmosphere. The research academics stated that without this deliberate arrangement, it would be difficult to access the reading space due to the large population of students wanting to use the library as the capacity is limited.

5.4.3.2. Information provision.

Library provides relevant information to the researchers. It was established that the University of Zambia Library provides relevant information to the research academics by sourcing for both print and electronic sources of information. The print materials are usually sourced through donations and Library purchases made through the collections development that may be made upon special request. However, the Library mostly relies on donations as funds are always insufficient to suffice for such requests.

On the other hand, the electronic materials are accessed through subscriptions that are made through the consortium called the Zambia Library Consortium (ZALICO). This is an organizational body of the Libraries in Zambia. The members include; University Libraries, College Libraries and polytechnic special libraries. Since 2001, the consortium has been

working with Electronic Information for Libraries (EiFI) to provide electronic information access to libraries. Members subscribe to the consortium which eventually subscribes on behalf of the member libraries. Each Library has the mandate to select the electronic databases they feel will meet the needs of their users. As such, subscription to journals is not comprehensive due to limited resources. This is one of the challenges that the University of Zambia Library faces in failing to provide comprehensive access to e-resources to its members.

Access to electronic resources was further established to be limited by the poor internet access which is characterized by low bandwidth. The research academics narrated that internet access within the university is chanced. Sometimes access is enabled but it would indicate limited access. This is because of the low bandwidth. The findings are in line with what Ruwako and Otike (2014) established in their research conducted in Kenya that most African universities have a challenge of low bandwidth and high costs of internet bundles which limits access to researchers. Despite efforts to provide the internet services, the university under the auspices of the ICT is overwhelmed due to the number of students that demand access to the service for their research activities. The implications of these findings are that UNZA library in terms of offering digital resources for researcher is still not to the satisfactory levels hence the library must be digitized to improve access especially in critical resources.

5.4.3.3. Information literacy skills

The University of Zambia library provides information literacy skills to the researchers through short training workshops. The training programs are meant to enlighten the research academics on how to access the electronic materials and adopt new ways of research. However, most academic researchers *stated that these trainings are not adequate as they do not provide the research skills which most academics lack* but are concentrated on how to access the electronic resources. It is therefore, the academic library task to include research skills in order to enhance the research activities of the University. The lack of research skills by academics slows the research progress. Information literacy is critical in the knowledge economy as it provides lifelong skills for researchers.

5.4.3.4. Reference services.

The University of Zambia library provides reference services to the researchers. This is a section under public services department that gives advice on library collection and services and expertise on multiple issues relating to the library. Reference services are however changing in the knowledge economy. According to Moore (1964) reference librarians are increasingly engaged in a variety of specialized functions and responsibilities which go greater responsibility for collection building and selection of materials in specialized fields. In this regard, they assume the role of knowledge workers in a knowledge economy who possess special skills in their field of specialization. In view of this, Rothstein (1960) proposed that the reference librarians must overcome some of their inhibitions against the direct provision of information such as not just suggestions or instruction as to where or how the research ought to find the material but recognize information service as a principal and worthy obligation of the library.

Therefore, the library remains to be the providers of information for research in universities. These findings complement the theoretical framework of Spender that libraries are repositories of information in research institutions and help to disseminate the stored information to the researchers. However, these findings are not exhaustive in comparison with the findings of a research study that was conducted in the UK by RIN & RLUK (2011) that highlighted factors like; the library must help retain top researchers, libraries help researchers win grants and Libraries help exploit technologies. The above findings point to the fact that academic libraries in developing countries are still performing their traditional roles and have not fully realized their new roles in the digital age. What the academic Libraries in the United Kingdom have realized is that they have to compete in order to match with the new digital challenges while maintaining their core value of existence.

Academic libraries in developing countries must realize their changing roles in the digital age in order to remain relevant in supporting research in their countries. In view of this the study established some of the expectations that researchers have from the Library services which include; having a library with skilled manpower, a library with full subscription of digital information sources and a library with the latest stock of print and electronic resources. These findings are in line with the observations made by Tebbets (1991) that for academic libraries to move from limited or local access to universal access which require internet access

coverage it requires expandability, flexibility and compatibility which will enhance easy storage and retrieval more efficiently.

5.5. VALUE OF KNOWLEDGE MANAGEMENT IN RESEARCH

The aim of this objective was to establish the knowledge management practices at the University of Zambia and assess how they help in improving research activities.

5.5.1. Knowledge management overview

Knowledge management is a mix of processes which comprise of various activities such as knowledge creation, codification, sharing and innovation. This research study was basically centred on research practices of academics which is a knowledge creation component of knowledge management. Organizational knowledge creation as observed by pentland (1995) involves developing new content or replacing existing content within organization's tacit and explicit knowledge through the social and collaborative pressures. This knowledge is shared and transmitted, amplified and enlarged to reflect organizational knowledge (Nonaka; 1994). For this research study, knowledge creation was about generation of new knowledge by research academics who engage in research practice. Thus, the study adopted the SECI and spender's knowledge creation model to represent what goes on in knowledge creation especially in research institutions where knowledge is generated and stored and later is disseminated to the researchers. In the knowledge economy, knowledge management has been realized to play an important role for competitive advantage.

5.5.2. Role of Knowledge management in research for competitive advantage.

Knowledge management in research organizations helps to leverage their existing knowledge to create new knowledge through research activities. According to Gold et al (2001) organizations can accomplish this if they create an absorptive capacity which is the ability to use prior knowledge to recognize the value of new information, assimilate it and apply it to create new knowledge and capabilities. In research universities, competitive advantage can be enhanced by ensuring that the data that is collected through research is managed well through the creation of data research management systems that can capture, store and disseminate the research data as required by the university with the use of appropriate tools.

In this respect, Gold et al (2001) observed that three key infrastructures, technical, structural and cultural enable the maximization of organizational performance. Structural infrastructure refers to the presence of norms and trust mechanism. Shared contexts comprise the cultural

dimension. The technology aspect addresses the technology enabled ties that exist within the firm. In order to leverage infrastructure, knowledge management knowledge management processes must be present to store, transform and transport knowledge created in the firm. It is in view of the above that Lee Choi (2003) suggested three factors for managing knowledge which include enablers, organizational performance or structure, and processes. These factors will be used to assess the knowledge management practices at Unza.

5.5.3. Knowledge management at UNZA

The research study in this regard established that Unza as an institution was involved in some knowledge management practices which helps to leverage its research activities. In accordance with the existing research policy, (2009) the university has an explicit knowledge management as stated from the policy statement that the university will encourage university staff to explore and innovate ways of establishing such alliances, networks and partnerships with relevant public, private and other research institutions for mutual gain .As such the university requires the academics to explore and be innovative in order to create new knowledge for the benefit of the nation. To fulfil this mandate, the university has put in place some enablers, processes and organizational context although with some challenges. This is an initiative by the university which is also contained in the university's strategic plan for 2013-2017.

5.5.3.1. Enablers at Unza.

5.5.3.1.1 Information Communication Technology

The University of Zambia manages its knowledge through the ICT department that manages information in the university. This is a knowledge management enabler as it stimulates the knowledge creation through research, protects the knowledge and facilitates the sharing of knowledge within the university. The ICT uses best practices where software's are embedded in the system for easy management of routine works such as DSpace for management of research data. These findings are supported by the views of Alavi et al (2005/2006) who stated that ICTs by most firms are used as strategic enablers of formal knowledge management initiatives by incorporating knowledge management systems with various technologies like information repositories, data warehouses, intranets, and search engines. While the study agrees with the above assertions regarding the usage and relevance of the knowledge management systems, this study takes into consideration the difference in the

nature of processes and selection of the systems that is applicable in knowledge generation and transfer. If the right systems are put in place, efficiency will be enhanced. In this regard, Gold et al (2001) observed that technology is multi-faceted; hence the organization must invest in a comprehensive infrastructure that supports the various types of knowledge and communication that are critical. The technology dimensions must include; business intelligence, collaboration, distributed learning, knowledge discovery, knowledge mapping, opportunity generation as well as security. It was therefore established that the University of Zambia in relation to use of ICTs to share knowledge is still limited as the systems are not developed to support some of these technology dimensions among the researchers. For instance the researchers interviewed pointed out that *there is limited networking in their research practices as the university has not put in place the mechanism to enhance interaction among researchers*. This is the opposite of what exists in the UK as observed by Jubb and Green (2007) who stated that researchers in the UK expressed satisfaction to the kind of ICTs that are available for them to conduct research.

5.5.3.1.2 Organizational performance or Structure.

The organizational performance at UNZA is influenced by the institutional culture and philosophy that the University adopted which embraces everyone. Organizational Culture existing is that of a community practice. Community practice according to Cadz et al (2006) is formal or informal groupings of employees whose common goal is to share operational knowledge. This is notable from the research findings where researchers admitted to research collaboration at different levels as well as having face to face interactions during tea breaks a phenomenon that encourages knowledge sharing among the academics. These findings justify the assertions of Alavi et al (2005/2006) that knowledge management processes are influenced by social settings in which they are embedded and subject to interpretation based on the organizational norms of that organization.

In addition, the University of Zambia has a policy of upgrading the researchers to higher ranks depending on how much research contribution they have made in each academic year. This system is considered as a way of rewarding the hardworking academics which is to some extent a global phenomenon. Gold et al (2001) observed that along with policy and process, an organization's system of rewards and incentives can determine the channels from which knowledge is accessed and how it flows. As such, these systems can create barriers to knowledge management or can enhance knowledge management. At Unza, it was established

that apart from the above mentioned process of rewarding academics in their career development, there is no other deliberate system in place of rewarding researchers for sharing knowledge. In this context, the system in place has become a barrier to knowledge sharing as there is no other mechanism in place of supporting research sharing. Gold et al (ibid) suggested that incentive system should be structured so that workers are motivated and rewarded for taking time to generate new knowledge such as, share their knowledge and help others outside their own division of function. The ideal situation for the research academics was to probably find a mechanism that would help them publish their research as a motivation aspect. This follows the concerns of the academics interviewed *that the resources for publishing are insufficient as such we cannot afford to conduct research on a regular basis*. Knowledge sharing among researchers should be encouraged and this can be done by the leadership through policy direction.

5.5.3.2. Processes.

It was also established that the University is involved in the knowledge creation as a process through research. This was the reason the study adopted the SECI (socialization, externalization, combination, internalization) model by Nonaka and Takeuchi (1994) for it includes the knowledge creation of which this study is centered on. The model further encompasses transfer of the knowledge that is created by the academics which is critical in the study to determine how the knowledge flows after it has been created. In this regard, the research study observed that there is lack of organizational efficiency in managing research activities at UNZA as most research academics interviewed complained of the poor management of research data. Research data management involves the organization, storage and maintenance of researched data which must be protected and made accessible both during the life span of the research and in the long term. The study however established that the University is in its early stages of creating a portal research data management implementation. As such, the academics interviewed proposed the introduction of research tools like big data that would lead to an organizational and storage of research data for the University. This organizational strategy will enhance organizational performance.

5.5.3.3 Context

As a result of the lapses in the knowledge management enablers and organizational performance, the University of Zambia's research environment is not very favourable. There is no integrative approach to enhance the research activities in the Universities using the

knowledge management approach. These findings are contrary to what was established by a research conducted in Leuven as stated by Oosterlinck (2001) which gives an overview of a mix of tools and processes which were used as enablers in the transfer of knowledge. Leuven gained a competitive advantage because of the incorporation of knowledge management strategies in its research activities.

It can also be stated that knowledge management enablers affect the organizational performance. For instance, in research activities if the enablers are not effective, the entire research activities of the particular University is affected. As such leaders have to ensure that they establish enabling conditions for achieving organizational outcome.

5.6. CONCLUSION

This chapter has presented the interpretation and discussion of the research findings in this study. The interpretation according to the discussion is that the research practices of academics at Unza vary from the research practices of researchers in developed nations. UNZA researchers conduct research under difficult conditions but get motivated through promotions and personal satisfaction. The library helps to make the research activities possible by providing the information in both print and electronic formats as well as ensuring that the academics access the library for reading. It is also very clear that the Library is operating under difficult conditions as these electronic resources are not provided to the satisfaction of the academics due to limited subscription. The Internet bandwidth is equally low for downloading of the research materials. The challenges in conducting research are enormous but academics still survive and manage to even share their research through institutional repository, journal publications, conferences and workshops. Research activities in some situations seem to be favourable due to some strategies in place, the general perception is that that knowledge management enablers are not in place while processes are in place. Hence, the lack of proper mix and integrative approach to manage research activities has negatively affected research at Unza.

CHAPTER SIX

CONCLUSION AND RECOMMENDATIONS

6.1. INTRODUCTION

This chapter will conclude the research study based on the findings in accordance with the set objectives of the study. It will be presented in two parts with the first part concluding the research practices of academics at Unza and the second part providing the recommendations based on the gaps established during the study. The purpose of the study was to investigate the research practices of academics in an African university setting: a case of UNZA. The focus was on how research academics at Unza conduct their research, how the academics share their knowledge, how the academics collect their information sources and establish the knowledge management practices at Unza in relation to how they assist research activities in general. The research however established some challenges associated with the research practices in general at UNZA and these challenges explains why UNZA academics conducts research in the manner they do.

6.2. SUMMARY OF RESEARCH PRACTICES OF ACADEMICS AT UNZA AND THE IMPLICATION OF THE FINDINGS.

The study was based on the research practices of academics in an African university setting; a case of the University of Zambia. Its aim was to establish the research trends of academics through data collection, knowledge sharing and transfer and how the entire research output is managed. From the findings, it is clear that the research practices of academics are conducted under very difficult conditions making the research environment unfavourable.

The first objective was to investigate the research practices of academics at UNZA. The research in this regard sought to establish the trends and behaviours of research academics and challenges they encounter in conducting research. From the findings, it can be concluded that research academics at UNZA conduct research with constraints in research funds, Institutional support and having a clear policy in place that would guide their research activities.

The study established that the University of Zambia is poorly funded by the central government as this is a trend in most higher learning institutions in Zambia. This has affected

the smooth operation of the university activities. Hence, there is usually limited or no allocation for research funds to cover research activities within the university. However, it was established that some disciplines like natural sciences and medicine receive research project funds from the donors who have interest in certain programs and thus engage such academics for research activities due to their expertise.

Further, the research academics stated that conducting research at UNZA is enhanced by the institutional support through the management philosophy adopted by the organization which states that UNZA will embrace a participatory management style that will motivate employees, provide a work environment that is conducive to high productivity, teamwork in which leadership is by example. The academics in this environment work as a team and share knowledge in different ways as they interact through institutional established forums such as; departments and staff canteens. Nevertheless, the study established that the institutional support rendered to the academics is not according to their expectations as research academics complained of lack of institutional interventions in most areas of their research. For instance, capacity building and publishing of academic research were cited as areas of serious concern.

The study established that research at UNZA is conducted without a properly enforced research policy that should guide the research activities of the academics. Academics manage to conduct research out of personal interest, experience and motivation for promotional purposes. Although the research policy is in place, there is lack of enforcement for it to be followed. The department that is keeping it which is directorate of postgraduate studies probably is interested in it to implement academic research for students. Hence, the academics expressed ignorance about the contents of the document. For those who are aware that it exists stated that it was not elaborate as it had a lot of gaps in it. One gap that was established was the publication policy which this research discovered that it was in its draft stage. This entails that UNZA's research policy has to be revisited and made public to the academics that need to be aware of what is expected of them as researchers.

The second objective was to examine how knowledge is shared and transferred by academic researchers. Knowledge sharing by academics was established to be an interactive social phenomenon. UNZA researchers' share and transfer knowledge through various platforms. These include; research collaboration, journal publications, workshops and conference presentations, institutional repository and social Medias like LinkedIn. The average number

of journals published in a year by each researcher was established to be at least between two to four. The frequency in publication is considerable despite the financial costs attached to the process. This development has complemented the recent development in most African research Universities where there is a growth rate in journal publications. The increase in journal publications is attributed to promotions attached to publishing in the academic hierarchy.

In addition, researchers share knowledge through research collaboration which is at different levels starting with departmental, institutional, national and international. The research collaboration at UNZA is more at departmental level than at national and international level basically because of the organizational cultural norms adopted by the institution. For instance, at departmental level, staffs share tea breaks. This enhances the social interaction and facilitates the knowledge sharing which eventually helps in knowledge generation. The knowledge creation process follows what Nonaka (1994) proposed in the SECI model that knowledge creation can be done when there is socialization, externalization, combination and internalization. It was also established that, research academics in their research practices appreciate the research collaboration for the following reasons; cost sharing, sharing expertise, enhancing quality in research and authenticity, and for mentoring of young researchers.

Further, the research academics at UNZA share knowledge through conference presentations which they attend at least once in a year. The ability to attend international conferences reinforces the sharing of knowledge and strengthens international collaboration among the academics. There is less frequency in conference attendance because of poor funding. Hence researchers rely on sponsored trips to attend the international conferences and also attend the annual professional associations where they are affiliated to which are held annually.

Knowledge transfer by research academics is through various Medias such as LinkedIn and the institutional repository. The study established that UNZA has an ICT department that manages the institutional technology system. The department manages the institutional repository the DSpace where all the academic theses are uploaded to and retrieved from. As such the research academics submit their soft copies of their research output which is later uploaded to the system for access. This means of knowledge dissemination by research academics was established to be effective as there are no cost implications attached.

The third objective was to investigate the role of academic libraries in promoting research in a University. Academic libraries are primary gateways to information. In research, the academic libraries enhance access to information that the researchers require. This information can be either in print or electronic format or both. In a digital age, academic libraries have emerging new roles of providing information in electronic format a trend that signifies how technologically advanced a library is. The new trend promotes efficiency in the delivery and access of information. As such, the trend requires knowledge workers to discharge their duties by digitizing the existing information resources and embed them in the available software's for easy access. There must be also complete subscription to online databases that will enhance complete access.

In this regard, the study established that the academics use both print and electronic materials. The usage of electronic resources was however not to the levels the academics expect as the academics complained of the non subscription of some journals due to some financial challenges. Therefore, the library in this regard has not fully supported the research activities in the university. This is contrary to the findings of a research conducted in Europe by Jubb and Green (2007) where the researchers use digital materials for research an indication of a well developed library that supports research in a knowledge economy

However, Library support to research is evident in other library services such as provision of reading space and provision of references services. In terms of reading space, the library has designated a place for researchers called the special collections amidst reading space pressures from the students. The Library for easy access opens its library for reading up to midnight. As such, the research academics appreciate the efforts by the Library to provide research support at any time.

The Library is committed to meeting the researcher's information needs through the provision of information literacy skills to the incoming researchers. This is done through workshops and trainings. The study established that these trainings are not adequate to equip the researchers with the much needed skills they require in research. Librarians in this respect are challenged to revisit the contents of the researchers training workshops in order to remain relevant in their core business of supporting research and teaching in a University.

The fourth and last objective was to assess the value of knowledge management practices in improving research output. Knowledge management in a knowledge economy is perceived to render a competitive advantage to organizations that utilize it. In research organizations,

knowledge management can ensure that data is collected through the processes and it is managed and disseminated for innovation purposes. Therefore, knowledge management must be a complete package that must have enablers, processes and the context must be enabled in order to sustain a competitive advantage.

The study established that UNZA has an enabler such as ICT department which manages its information. The ICT stimulates the creation of knowledge while facilitating the sharing of knowledge. However, there are limitations in ICT infrastructures as some researchers pointed out that there is limited sharing of knowledge through the system. The findings of the study highlighted the fact that African Universities have challenges in their ICT infrastructure as it is still undeveloped. Further, the study established that research was enabled by organizational performance which is influenced by the institutional culture and philosophy which is of community practice. This was evident from the various forms of research collaboration especially at departmental level. These findings confirmed Alavi's (2005/2006) findings that knowledge management processes are influenced by social settings.

In the context of processes, the University is fully engaged in research activities through the knowledge creation. In view of this, academics generate new knowledge which is later deposited in the institutional memory the institutional repository. The processes of knowledge management are conducted well although other processes are still undergoing some development process as the institution does not have the capacity to do so. For instance, the process of capturing through data research management system is not yet in place.

Therefore, the knowledge management at UNZA has some lapses as it was found that the ICT infrastructure as enablers is not fully developed to support research in the University. Despite having some processes to conduct these activities smoothly, it is difficult to get the maximum benefits of knowledge management for enhancing research activities as the mix of practices is not appropriate. In view of this, the context is not fully enabled leading to an unfavourable research environment for academics.

6.3. RECOMMENDATIONS

- The findings of this research established that the major challenges to research activities is funding. There are concerns that lack of prioritization to research activities could be attributed to inadequate information and knowhow on the value of research in this knowledge economy. It is therefore recommended that future research

should be conducted on the value of research towards innovation in a knowledge economy. This will attract the attention of the governments and decision makers to prioritize the financing of research activities in research universities.

- Academic libraries as information custodians must be upgraded to a digital standard in order to discharge their new roles in the knowledge economy of storing, codifying, dissemination and sharing of information more effectively.
- It is also recommended that research academics should be rewarded for sharing of knowledge unlike just being concerned more on the number of journal publications that they publish which will earn them a job rise. Knowledge sharing will help in capturing that tacit knowledge from the researchers which will be of lasting benefit to the institution and the nation as a whole.
- The University of Zambia should prioritize the setting up of a research and data management department for academics that should oversee and manage research publications in the university. This will resolve some of the research problems such as research policy, funding, storage and dissemination of research publications. As the situation is currently, the directorate of postgraduate studies helps to manage research activities for students while the academics seem to have no much guidance and direction.

6.4. CONCLUSION

The research practices of academics at UNZA have illuminated a broader perspective of how research is conducted in an African University setting. Although some African Universities have a better research environment, most of them still experience similar experiences as UNZA. African research universities should realize the role of a research university that has shifted from a traditional view of a higher education as a public university centred on providing community service by improved human capital through training to a knowledge creation university. The findings of this study therefore can conclusively state that research practices of academics in an African university setting are conducted under very difficult conditions coupled with financial challenges making it difficult to conduct research in a favourable atmosphere. There is also need to adopt the knowledge management styles in the way information is accessed, processed and disseminated for the sustenance of research activities. This can be done through improving research support services like the library

where information for research resides. It is from this perspective that this research adopts the observations of Spender's framework with the view that it is not enough to only consider the knowledge creation process but it is important to take interest in areas where knowledge resides. Hence, if libraries are refurbished to modern standards where all the library services are improved, they can help in helping in improving the research environments of most African universities.

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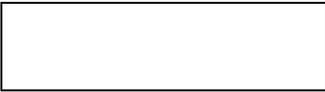
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APPENDICES

INTERVIEW GUIDE

UNIVERSITY OF ZAMBIA RESEARCH ACADEMICS'S INTERVIEW GUIDE

PERSONAL INFORMATION

1. Name of the Department
2. Position held in the University
3. Number of years in Research Practice

As a researcher at this institution, I am sure that you have a wealth of experience in research work of which I would like you to share this information with me.

SECTION A.

Research Practices of Academics at the University of Zambia

4. Are you aware of the research policy that governs your research activities in the University?
5. If yes to Q1, how does it guide your research practices?
6. If No to Q1, what guides your research activities?
7. Do you get any research support from your University
8. If yes, what kind of support?
9. What are some of the challenges you encounter when conducting research?
10. What would be an ideal research environment you would want to see?

SECTION B

Knowledge sharing among academic Researchers

11. Do you share knowledge from your researched works?
12. If yes, please explain.
13. Have you presented any research paper before?
14. If yes, how many Paper and Conference Presentations do you attend in a year?
15. How many journal articles have you published in the last one year?
16. Do you collaborate with other researchers in conducting research?
17. If yes, at what level?
 - a) Departmental level
 - b) Institutional Level
 - c) National Level
 - d) International level
18. Would you encourage collaboration in research and why?

SECTION C

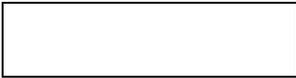
Information Sources among Researchers

19. What information sources do you use to collect data for your research?
20. Are they electronic or print materials?
21. Mention the sources.
22. What problems do you encounter during information search process?
23. You can mention as many as possible
24. How does the Library help you meet your information needs for your research?
25. What are your expectations of an ideal effective and efficient academic Library that support research?

SECTION D

Assessing the Value of Knowledge management practices in improving Research output at the University of Zambia

26. How do you manage and make available your research findings to the public? (i.e. using platforms such as institutional repository, LinkedIn, open access or subscribed journals)
27. Explain how the platform you use in managing your research publications is effective in sharing your knowledge.
28. Is there any additional information you would like to share regarding the improvement of research practices of academics in a university?



THE UNIVERSITY OF ZAMBIA
LIBRARY DEPARTMENT
INTERNAL MEMORANDUM

TO : The Registrar
FROM : Ms Ellah Twaambo (Assistant Librarian, Library Dept- 009620)
DATE : 23rd November, 2016
SUBJECT : **PERMISSION TO CONDUCT RESEARCH WITHIN UNZA.**

With reference to the subject matter above;

I am currently studying with Stellenbosch University for my **Master of Philosophy in Information and Knowledge Management (MIKM)** through part-time study. I am at the data collection stage and require a consent letter that permits me to conduct interviews with UNZA academic staff and investigate some processes and services relating to the topic under study within UNZA. My research topic is **Research Practices of Academics in an African University Setting: A Case of the University Of Zambia**. I therefore request your authority to conduct this research within the University and interview some of your academic staff that is part of my sample. Find attached a copy of an approved ethical clearance letter for my research from Stellenbosch University that demands for the consent letter in order to proceed with this research.

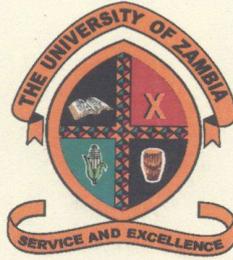
Your positive consideration of this request will be highly appreciated.

SIGNED 

Ellah Twaambo (MS)

Assistant Librarian (Library Department)

Cc. Deputy Registrar (Administration)



THE UNIVERSITY OF ZAMBIA

: registrar@unza.zm
ix +260 211 253952
ZA 44370

Registrar's
P.O. BOX
Lusaka, Z

23rd November, 2014

Ms Ellah Twaambo
C/o Main Library
UNZA

Dear Ms Twaambo,

RE: PERMISSION TO CONDUCT RESEARCH AT THE UNIVERSITY OF ZAMBIA

Reference is made to the memorandum dated 23rd November 2016, on the matter captioned above.

This serves to inform you that your request to do research work on “**Research Practices of Academics in an African University Setting: A Case of the University of Zambia: A case of the University of Zambia**” at the University of Zambia and for you to conduct interviews with UNZA academic staff and investigate some processes and services relating to your topic under study has been granted. This is to enable you complete your Master of Philosophy in Information and Knowledge Management (MIKM) Programme at Stellenbosch University.

By copy of this letter, the Deputy Registrar (Administration) and other relevant Offices are hereby notified of the approval.



Sitali Wamundila (Mr.)
REGISTRAR

c.c. Vice-Chancellor
Deputy Vice-Chancellor
Deputy Registrar (Administration)



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CONSENT TO PARTICIPATE IN RESEARCH

Research Practices of Academics in an African University Setting: A case of the University of Zambia.

You are asked to participate in a research study conducted by **Ellah Twaambo** pursuing Master of Philosophy in Information and Knowledge Management [MIKM] from the Information Science Department at Stellenbosch University. Your contribution will be valuable and useful in the completion of a thesis being undertaken by the researcher. You were selected as a possible participant in this study because of your experience in research work as well as being part of the area under study which is of interest to the researcher

1. PROCEDURES

If you volunteer to participate in this study, we would ask you to do the following things:

- a) Accept to be interviewed by the researcher who will be guided by the interview guide.
- b) Allow the researcher to record the interview for the sake of coding so that the interview will be transcribed and translated.
- c) Spare at least 10-15 minutes of interview time.
- d) Advise on the appropriate time to interview you in your office

2. POTENTIAL RISKS AND DISCOMFORTS

I am aware that you have very busy schedules and allocating time for this task is not easy. However, I wish to assure you that we will not exceed the proposed time frame of interview. Further, I am also mindful of the discomforts you may have in having the interview recorded for it affects issues of privacy. I wish to reaffirm my assurance of protecting your privacy and strictly use the recordings for coding purposes of this research.

3. POTENTIAL BENEFITS TO SUBJECTS AND/OR TO SOCIETY

This Research is intended to be a gateway to a better research environment of most academics in African Universities. Research in the Knowledge economy is a major driving force for innovation in all production activities and service delivery and as such it must be conducted in a favourable environment to ensure consistency and efficacy of the studies to be researched on. The research will also offer a platform upon which challenges faced by the African academics will be addressed.

PAYMENT FOR PARTICIPATION

Being part of this research is on voluntary basis. There is no remuneration attached to it for it is purely on academic grounds.

CONFIDENTIALITY

Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission or as required by law. Confidentiality will be maintained by means of not disclosing your personal details no availing the recorded information to the third party. The recorded information will be transcribed, coded and analyzed for research purposes only. The Final theses will be submitted to Stellenbosch University for academic use that will benefit many scholars for it will be accessible on institutional repository.

4. PARTICIPATION AND WITHDRAWAL

You can choose whether to be in this study or not. If you volunteer to be in this study, you may withdraw at any time without consequences of any kind. You may also refuse to answer any questions you don't want to answer and still remain in the study. The investigator may withdraw you from this research if circumstances arise which warrant doing so. This can arise if you frequently not show up on the interview date as agreed on.

IDENTIFICATION OF INVESTIGATORS

If you have any questions or concerns about the research, please feel free to contact Ellah Twaambo from the University Library (0975281705) the Principal Investigator, or Supervisor, Christian Maasdorp my Co-Investigator on chm2@sun.ac.za

5. RIGHTS OF RESEARCH SUBJECTS

You may withdraw your consent at any time and discontinue participation without penalty. You are not waiving any legal claims, rights or remedies because of your participation in this research study.

If you have questions regarding your rights as a research subject, contact Ms Maléne Fouché [mfouche@sun.ac.za; 021 808 4622] at the Division for Research Development.

SIGNATURE OF RESEARCH PARTICIPANT

The information above was described to me *the participant* by **Ellah Twaambo** in *English* and *lam* in command of this language. I was given the opportunity to ask questions and these questions were answered to my satisfaction.

I hereby consent voluntarily to participate in this study I have been given a copy of this form.

Name of Subject/Participant

Signature of Subject/Participant

Date

SIGNATURE OF INVESTIGATOR

I declare that I explained the information given in this document to _____ He/she was encouraged and given ample time to ask me any questions. This conversation was conducted in English and no translator was used.

Signature of Investigator

Date

FOREWORD

A university that does not consider and take research and publishing seriously is a “dead” university. The University of Zambia Management attaches great importance to research and publishing and, therefore, has decided, through the Senate Library and Publications Committee to revitalise research by coming up with a publishing policy that entails among other things:

- (a) That academics and the community are afforded an opportunity to do research in a conducive environment.
- (b) That those who want to do research are afforded an opportunity to publish their research findings.
- (c) That researched knowledge is captured and disseminated timely.

This document, therefore, will guide the University of Zambia and its community to re-align its position in the world of academia and march with other progressive universities in publications.

Dr Wilson M.N. Mwenya
Deputy Vice-Chancellor

ACKNOWLEDGEMENT

The Secretariat would like to acknowledge the professional input of the Ad hoc Committee of the Senate Library and Publications Committee, considering that the members had to abandon their teaching programmes to sit and draft this Policy. In some cases, the meetings were called at short notice and took longer than the normal working hours.

1.0 PREAMBLE

The University of Zambia did not have a Publishing Policy in place since inception. Therefore, the Senate Library and Publications Committee decided to appoint an Ad hoc Committee comprising all Chief Editors of officially approved journals in the University and a representative of the School of Medicine, who are all members of the Senate Library and Publications Committee, with UNZA Press being the Secretariat to draft the Policy document.

The University of Zambia's main function is to provide a conducive environment for learning, research and publishing. To achieve this, the University through the Senate Publications Committee set up the University of Zambia Press (UNZA Press) in 1989, by first merging the Publications Office and Material Resources, which had originally operated as independent entities. In 1996, the printing section became UNZA Printer as a separate entity leaving the publications section which retained the name UNZA Press.

The mandate for UNZA Press has since developed to operate as a business venture while still maintaining the position of the Secretariat to all University of Zambia approved journals.

2.0 MISSION STATEMENT

The Mission of the Senate Library and Publications Committee of the University of Zambia is to enhance teaching of students, provision of public service to the nation, research and publications of quality literature by academic staff, and marketing academic and non-scholarly works developed by individual schools, directorates/institutes of the University of Zambia and other educational institutions within and beyond the boundaries of Zambia.

3.0 POLICY AIM AND OBJECTIVES

3.1 Aim

The University of Zambia Publishing Policy aims at ensuring the production at the University of high-quality publications, thereby making a Zambian contribution to the world's research literature.

3.2 Objectives

To this end, the specific objectives of the Policy are to:

- (i) Create an enabling environment for research and publication at the University;
- (ii) Promote a publishing culture at the University of solicited and unsolicited manuscripts from within and outside following a set of prescribed requirements and standards;
- (iii) Ensure regular/timely production of publications.

4.0 POLICY MEASURES

4.1 Research and Publications

In order to create an enabling environment the Policy shall ensure that:

- (i) Each academic Unit has a vibrant programme of seminars, workshops, conferences, symposia, colloquia etc;
- (ii) Each academic Unit produces biannual Research and Publications Reports, including seminar presentations;
- (iii) UNZA Press produces biannual Research and Publications Reports;
- (iv) The Research and Conference Travel and Grants Committee, under the Directorate of Research and Graduate Studies (DRGS), shall be fully revitalised through mobilisation of resources.

The Policy will require:

- (i) Each academic Unit, each semester, to submit work for publishing either to UNZA Press or any external UNZA-recognised publishing house; and
- (ii) Senate receives each semester a Publications Report from UNZA Press and a Research and Publications Report from each academic Unit.

The Policy will ensure that:

- (i) Both the Central Administration and each income-generating Unit provides on a regular basis financial contributions to UNZA Press, which shall hold a separate account to do away with the

practice whereby publications are directly funded by Schools.

5.0 UNIVERSITY OF ZAMBIA PUBLICATIONS

In order to stem the misuse of the University logo:

- (i) The University shall approve publications under the University logo.

6.0 RESOURCE MOBILISATION

For effective funding of publications in the University:

- (i) The University of Zambia through the Senate Library and Publications Committee, shall mobilise funds for publishing literary works.

7.0 QUALITY ASSURANCE

In order to produce high quality publications:

- (i) The University of Zambia through the Senate Library and Publications Committee shall ensure that all manuscripts submitted for publication are subjected to peer-review process for academic worthiness, accuracy, avoidance of plagiarism and copyright infringement.
- (ii) The University of Zambia, through UNZA Press, shall ensure that all publications bearing the logo of the University of Zambia are professionally done before they are disseminated to the public.
- (iii) All submitted manuscripts shall conform to the relevant requirements set by specific Editorial Boards.

8.0 CONTRACTS

As an obligation:

- (i) The University of Zambia shall enter into contracts with authors whose manuscripts have been accepted on specified terms and references.
- (ii) The University of Zambia shall pay royalties on agreed terms.
- (iii) The University of Zambia shall adhere to all applicable intellectual property rights as specified in the contracts (UNZA, 2010).

9.0 MARKETING AND SALES

To encourage academics:

- (i) The University of Zambia shall market books and other publications through UNZA Press as specified in the contracts.
- (ii) The University of Zambia through UNZA Press shall encourage online publishing in addition to production of hard copies.

10.0 ACADEMIC FREEDOM

In order to promote academic freedom:

- (i) The University of Zambia shall, within the constraints of the law, ensure that academic staff involved in research are not hindered in carrying out research and publications thereof.

11.0 PARTNERSHIPS

To enhance interaction of knowledge:

- (i) The University of Zambia may, through the Senate Library and Publications Committee enter into strategic partnerships and alliances with progressive publishers and corporate entities.
- (ii) All strategic agreements entered into prior to the formulation of this policy shall continue to run.

12.0 MONITORING AND EVALUATION OF THE POLICY

As an enforcement measure:

- (i) The Senate Library and Publications Committee shall regularly monitor and evaluate the publishing activities through quarterly and annual reports to Senate.
- (ii) All academic units should ensure that they produce bi-annual research reports failure to which the head of that academic Unit will be required to appear before Senate to explain why this was not being adhered to.

This Policy shall enter into force upon approval by Senate.

CHAIRPERSON:

DATE:

SECRETARY:

DATE: