

**DETERMINANTS OF RESEARCH INFORMATION SEEKING
AND USAGE: A CASE OF POSTGRADUATE STUDENTS AT THE
UNIVERSITY OF DAR ES SALAAM, TANZANIA**

BY

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DECLARATION

I declare that this thesis is my original work and has not been presented for a degree in any University/Insitution for certification. The thesis has been complemented by referenced sources duly acknowledged. Where text, data (including spoken words), graphics, pictures or tables have been borrowed from other sources, including the internet, they are specifically accredited and references cited in accordance with anti-plagarism regulations.

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DEDICATION

To my husband Daudi and my children Prudence, Nelson, Faraja and Sinyati.

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ACRONYMS

ACTS	African Centre for Technology Studies
AEE	Agricultural Economics and Extension
ASK	Anomalous States of Knowledge
CHET	Centre for Higher Education
CRs	Class Representatives
CRU	Communicating Research for Utilization
DCs	Developing Countries
DPGS	Directorate of Post Graduate Studies
EIRs	Electronic Information Resources
EIS	Electronic Information Sources
FAO	Food and Agricultural Organization
FGD	Focus Group Discussion
GoT	Government of Tanzania
HERANA	Higher Education Research and Advocacy Network in Africa
HSRC	Human Sciences Research Council
ICT	Information Communication Technology
IDRC	International Development Research Centre
ISP	Information Seeking Process
IT	Information Technology
KU	Kenyatta University
LDCs	Least Developed Countries
MBA	Master of Business Administration

MU	Mzumbe University
MOE	Ministry of Education
MOH	Ministry of Health
MS	Mean Score
NACTE	National Council for Technical Education
NGO	Non Government Organization
NIMR	National Institute of Medical Research
OUT	Open University of Tanzania
PhD	Doctor of Philosophy
PLE	Principle of Least Effort
RIS	Research Information Seeking
RISO	Research Information Sources
RU	Research Output Utilization
R&D	Research and Development
SD	Standard Deviation
SJMC	School of Journalism and Mass Communication
SNAL	Sokoine National Agricultural Library
SoED	School of Education
SPSS	Statistical Packages for Social Science
SRS	Simple Random Sampling
SUA	Sokoine University of agriculture
TPB	Theory of Planned Behavior
TCU	Tanzania Commission for the Universities
TRA	Theory of Reasoned Action

UDBS	University of Dar es Salaam Business School
UDSL	University of Dar es Salaam School of Law
UDSM	University of Dar es Salaam
UEA	University of East Africa
UI	University of Ibadan
UK	United Kingdom
UNAAB	University of Agriculture Abeokuta
UNISA	University of South Africa
URT	United Republic of Tanzania
WLT	Web-based Learning Technologies

ABSTRACT

Research information is a variety of information required by a researcher who needs to conduct a scientific inquiry on how to select, formulate and develop a research theme of a subject matter in relation to the identified problem within a well-designed methodological framework (Bailey, 2014). Being an assortment of information, it is obtained from individual needs of the researcher and various information sources embedded within the necessities for new knowledge in order to expand or validate the already known information through the process of research information seeking (RIS). The purpose of this study was to investigate on key determinants of postgraduate students' research information seeking and usage at the University of Dar es Salaam, Tanzania in order establish appropriate ways for exploring research information and how the new knowledge gained in form of research findings can practically be shared and utilized for further developments. The study used a sense-making theory to inform the study. The descriptive research design was used. The study used a target population of 1043 Masters' students, from which a sample of 115 was drawn using a multi-stage stratified sampling technique. The study was conducted at the University of Dar es Salaam and data were collected using self-administered questionnaires. To ensure reliability and validity, a pilot study was conducted and generated a Cronbach' Alpha 0.76 which was acceptable. Data were generated using the Statistical Package for Social Sciences (IBM-SPSS Version 25). Descriptive statistics such as percentages and frequencies were used for analysis. The study established that the most influential determinant of postgraduate students' research information seeking (RIS) and use is the research information needs that tend to differ subject to students' research stage and the problem at hand. It further established that postgraduate students use different information sources where, the likelihood of information sources to be selected and used is determined by perceived accessibility, ease of use, quality and source' convenience. The study also revealed that most (62%) of students valued e-sources which were the most frequently used, and they were strongly satisfied with the internet source. It further shows that students have no intention to disseminate their research findings at the end of their degree program except for few (28%), who indicated they need to disseminate their research findings. In addition, the study revealed that the students' research findings' utilization was triggered by a number of obstructions. The study recommended that the government needs to provide postgraduate degree sponsorship. It also recommended that specific research submission policy should be put in place. A deliberate and transparent process of transferring research-based knowledge in practice should be instituted as well. In addition, the study recommended that there is a need to conduct further research to identify the obstacles to better research policy communication, capacity and willingness to utilize research findings from postgraduate students.

CHAPTER ONE

INTRODUCTION AND BACKGROUND TO THE STUDY

1.1 INTRODUCTION

This chapter presents background information regarding' determinants of postgraduate students' research information seeking and usage. It also covers the problem statement, purpose, objectives, research questions, assumptions, limitations, delimitation, theoretical framework, conceptual framework and operational definition of terms.

1.2 BACKGROUND TO THE STUDY

Research information is a variety of information required by a researcher who needs to conduct a scientific inquiry on how to select, formulate and develop a research theme of a subject matter in relation to the identified problem within a well-designed methodological framework (Bailey, 2014). Being an assortment of information, it is obtained from individual needs of the researcher and various information sources embedded within the necessities for new knowledge in order to expand or validate the already known information through the process of research information seeking (RIS).

Research information seeking (RIS) encompasses the ways in which individual researchers inquire about, evaluate, select and use information. As a purposive

process, it attempts to find pertinent information from different contexts through need recognition, searching, retrieval and application of the meaningful contents to satisfy the research goals (Ikoja-Odongo & Ocholla, 2004). Since it is a course of action, RIS is confined to the problem situation that links together the personal characteristics, needs of the individual researcher, situational contexts and research activity through the strength of information sources. However, recent developments in information environments and technologies have brought significant changes in how researchers search for appropriate information to satisfy the research purpose (Wilson, 2006). Equally, the determinants of research information seeking (RIS) are likely to shape the behavior of individual researchers in the process of conducting a research work.

The necessities to become more knowledgeable have influenced the required research information needs (RIN), its mode of acquisition, selection, and usage that evolve from a vague awareness of something in an attempt to locate the information that contributes to the understanding of the meaning (Ntiamoah, 2008; Singh & Satija, 2008). RIN manifest itself in a dynamic character with constant changes not directly observable though has unseen structures within the consumptive minds of the researcher. Postgraduate students' RIN is also subjective to information uses, its background, motivation and professional orientation which demand them to seek information through various research information sources (RISO).

Postgraduate students like other researchers, research information seeking (RIS) arise when they feel a need to seek information for encountered problems within their schooling research environments in wake of identifiable knowledge gap by using the right research information sources (RISO). However, the likelihood of RISO to be selected depends on perceived use, accessibility and quality of information sources (Thani & Hashim, 2011).

Research findings usage (RU) as a valuable and ethical process by which specific research-based knowledge (science) is implemented in practice, links research work with opportunities to inform policy, programs, practice, and implementers. As stated by Squires, Estabrooks, Gustavsson and Wallin (2011), research findings usage (RU) focus on transforming research knowledge into a set of products, processes and application of research evidence to improve outcomes in order to guide administrative decision-making. Although RU is essential, it is, however, a multifaceted concept and process of knowledge transformation into conceptual for influential consumption and not clearly defined process beyond being published as journal articles (Gira, Kessler, & Poertner, 2004).

Among the major problems regarding the postgraduate students 'research - practice - output usage originates from lack of propagation of new knowledge from research for use in practice (Turale, 2011). In least developed countries (LDCs), there exists

inadequate research funding and low government investments in research activities for postgraduate students, lack of morale to conduct research, inadequate motivation to disseminate findings, inability to digest research outcomes in policy development process and low scientific understanding among policymakers as a result little research is done with less dissemination of findings for use (Aguolu & Aguolu, 2002; Moller, 2006). Therefore, there is a need for more measures to address the challenges through evidence-based practices.

Postgraduate students' research findings in African countries, often receive insignificant awareness and remain exclusively by researchers (students) themselves and their immediate supervisors with fewer impacts to targeted research beneficiaries. Since knowledge acquired from research alone cannot in its own bring a solution for the problem sought, more actions are needed for effective dissemination and to be used in practice. Postgraduate students' research findings thus need not be ignored and remain merely as partial fulfillment of their degree programs' requirements. As Xia (2006) and Christian (2008) put it, carrying out a research study whose yields remain exclusively within the minds of the investigators is meaningless.

According to Popoola (2006), transforming scientific research findings into practice is both a demanding task and an art requiring intellectual rigor, discipline, and creativity. Despite the existing few developed models of information seeking

behavior in general, there still exist a gap arising from different levels of understanding, interests and surrounding cultural contexts. In Tanzania for example, a report on Evidence-informed Policy Making as indicated by the National Institute of Medical Research ((NIMR), 2008) that aimed to identify the obstacles to better research-policy communication, capacity and willingness in research policy dialogues revealed that, although the Universities have satisfactory capacity to carry out researches, they have low capacities to repackage the research findings into user-friendly language to be consumed by policymakers.

1.2.1 UDSM Functional Developments and Postgraduate Programs

One of the key functions of the Universities as learning and training centers is to generate new knowledge through research work with an emphasis to develop systematic investigation skills for knowledge extension (Mutula, 2009). Most students in postgraduate programs are therefore required to carry out research works as preconditions for enrollment. As a result, this has led to greater needs for them to undertake research activities. Postgraduate research works are often made up of basic research aspects that are potential sources of information to be used for developments although their findings' utilization is not given attention by many scholars (Chaurasia & Charasia, 2012).

The University of Dar es Salaam (UDSM) as a major training and research institution for postgraduate programs in Tanzania was initially established in 1961 as an affiliate college of the University of London and later became an affiliate of the University of East Africa (UEA) in 1963 soon after Tanzania gained its independence from the United Kingdom. Thereafter, in 1970 the University of East Africa (UEA) split into three independent Universities, that is, Makerere University in Uganda, the University of Nairobi in Kenya and the University of Dar es Salaam in Tanzania. The University of Dar es Salaam (UDSM) as a public University has thus become one of the oldest public Universities in East Africa.

At present, the University of Dar es Salaam (UDSM) offers more than ninety-four (94) postgraduate degree programs which are trained in different discipline and fields. UDSM is considered as a unique University from its inception that has charted the distinct pathways to academic excellence, aptly described as the ‘first and oldest, comprehensive in scope with core functions of; training and knowledge innovation through research works and publications. Like many other Universities around the globe, at the UDSM, most postgraduate students research finding are often kept in the thesis collection (East Africana Collections) without clear distribution to designated end users for knowledge sharing and administrative decision making for further developments. Majority of the theses are however accessed by succeeding students to be used as references (empirical studies) to enrich their research proposals and thesis report writings as partial fulfillment of

their degree programs requirements. For postgraduate students' research impacts to be realized there should be a process of transferring the acquired research-based knowledge into practice

1.3 Statement of the Problem

The conduct of postgraduate students' research information seeking (RIS) can be traced back to its roots on the concept of research information needs (RIN) and usage that arose in the late 1960s with persistent shifts from a system orientation with their artifacts and venues such as the Universities, books, articles, libraries and students toward information seeker and user orientation to frame a scientific inquiry of a phenomenon of interest (Savolainen, 2007). While research information seeker and user orientation aimed to obtain knowledge to support administrative decision-making, the approach has been criticized due to insufficient supporting theories and does not take into consideration the needs of definitive users for research information. As Wilson (2006) put it, the conception of research information seeking (RIS) and research information use (RU) cannot be seen in isolation in clarification of the concerned research substance.

The rationale for postgraduate students' RIS as a process to generate knowledge gain has led to high recognition for research thesis in partial fulfillment of the postgraduate degree programs (Masters' degree in particular). The previous studies, however, focused on information seeking behaviour in general with less attention

paid to specific investigations on postgraduate students' RIS and utilization of the findings over decades (Padma et al., 2013). Although research aims to generate knowledge to be shared in practice, there is no substantial evidence related to postgraduate students' research findings utilization. Studies by Harle, (2009), and Nwagwu and Segolila, (2013) on 'Empirical Overview of Eight Flagship Universities in Africa' undertaken by the Higher Education Research and Advocacy Network in Africa (HERANA) in 2001 to 2011. The studies involved a number of Universities, namely: The University of Botswana, University of Cape Town, University of Dar es Salaam (UDSM), Eduardo Mondlane University, University of Ghana, University of Mauritius, Makerere University and University of Nairobi. The studies which were concerned with the performance indicators of research programs in linking the postgraduate students' research to practical implementation in the continent, revealed the inadequate existence of scholarly articles on RIS and findings' utilization.

In Tanzania for example, a report on the 'Roles and functions of higher education councils and commissions in Africa' indicate that there is no substantial evidence whether postgraduate students' research outputs are often being put into use (Bailey, 2014). This is in spite of the fact that the University of Dar es Salaam (UDSM) has been in operation for more than six (6) decades and became one of the leading Universities in East Africa in terms of postgraduate programmes and students' enrollments. Out of its ninety-four (94) offered Master's degree

programmes, 80 (85.1%) are done by coursework and thesis and 14 (14.9%) are by thesis only as a precondition for enrollment (Appendix, III). Their postgraduate students' research practices were, however, being viewed with few critiques (Dulle, 2010). This study, therefore, aimed to establish on determinants of postgraduate students' research information seeking and usage at the University of Dar es Salaam.

1.3.1 The purpose of the study

The purpose of this study was to investigate on key determinants of postgraduate students' research information seeking and usage at the University of Dar es Salaam, Tanzania in order to ascertain appropriate ways for exploring research information and how the new knowledge gained in form of research findings can practically be shared and utilized for further developments.

1.3.2 Objectives of the Study

The objectives of the study were:

- (i) To identify the key determinants influencing research information needs among postgraduate students at the University of Dar es Salaam, Tanzania.
- (ii) To establish the research information sources used by postgraduate students while conducting research works at the University of Dar es Salaam, Tanzania.

- (iii) To establish the ways in which the postgraduate students' research findings are being used by targeted addressees.

1.3.3 Research Questions

The study was guided by the following research questions:

- (i) What are the methods of acquiring needed research information among postgraduate students at the University of Dar es Salaam?
- (ii) What are the sources of information used by postgraduate students while seeking research information at the University of Dar es Salaam?
- (iii) What is the frequency of use of the selected research information sources by postgraduate students at the University of Dar es Salaam?
- (iv) Do students have the intention to submit their research findings to research addressees at the University of Dar es Salaam?

1.4 ASSUMPTIONS

The underlying assumptions in this study were:

- (i) Postgraduate students often conduct research relating to community or organizational aspects and their findings are effectively utilized.
- (ii) Research findings utilization requires great support from the researched institutions and policymakers for development.
- (iii) There is a written policy which requires postgraduate students to submit a copy of their research reports/thesis/dissertation to the researched organization at the end of the research study.

1.5 SIGNIFICANCE OF THE STUDY

The study will be useful in several ways: First, it is anticipated that this research study will add knowledge on research information seeking and usage among postgraduate students and contribute information to curb underutilization of the research findings for further development. In addition, the study acts as a strategic tool of diagnosing appropriate ways of seeking research information, conducting the research activities and dissemination of the findings for postgraduate students.

Secondly, the findings will provide information that can help policymakers to make decisions about the appropriate ways of execution and usage of research findings and assisting in setting policies on how to improve dissemination of postgraduate students' findings. Thirdly, the research results will guide the Government of Tanzania (GoT), non-governmental organizations, the Ministry of Education (MoE) and other organizations to develop the framework for supporting postgraduate students to carry out their research studies and ensure that their findings are available or being used by the targeted audience for development.

1.6 LIMITATIONS AND DELIMITATIONS

Since the study intended to interrogate students who were in the stage of proposal and report writing at different stages of their research work at the time of data collection, among the constraints encountered in this study were; inability to use

different data collection techniques (triangulation) e.g. in-depth interviews, focus group discussions and observation due to the nature of hectic academic activities of the postgraduate students arising from lecture sessions, class assignments, tests and examinations which were beyond the control of the researcher. The strengths of other data collection techniques were therefore not exploited to complement and lessen the weaknesses of self-administered questionnaires.

To ensure completeness, the researcher ensured that data collection was done once in each of the selected school until the required information is fulfilled before proceeding with other strata in different schools. The findings from this study cannot be generalized due to its narrow area of study since the study population and sample concentrated only on the four selected schools at the main campus of the University of Dar es Salaam (UDSM) and covered students pursuing master's courses in the academic year 2014-2015 only who were at the University premises during the data collection sessions. The underlying motive behind the selection of this unit of inquiry was that they covered the postgraduate students whose degree programs were taught by both coursework and thesis which was in line to the purpose of this study.

1.7 THEORETICAL AND CONCEPTUAL FRAMEWORK

The study is based on sense - making theory (Dervin, 1998) of information seeking behavior which focuses on making sense from available information toward the aspiration of research information seeking for development. The theory was initially developed by Dervin (1983) and undergone periodic modifications, and underlies on the importance of asking respondents about their individual processes of making sense within research settings. It is a set of the meta-theoretical methodology of framing questions, data collection, and analysis for various disciplines in research information needs. The aim is to ascertain how researchers experience and make sense regarding the phenomenon being studied find patterns in them. The theory assumes that researchers move through space, time, situation and contextual changes.

The sense-making theory was appropriate in this study since it required the study to be framed in a way that participants have opportunities to share own experiences and understandings to be presented analytically through reporting. The focus is on the situations, gaps, how the situations and gaps defined, ways used to bridge gaps and making sense of those situations and the outcomes of bridging gaps. Ideally, a researcher is seen as facing a gap (a sense-making need) arising from a situation. Through the process of gap bridging, researchers seek inputs and engage in activities of seeking information through the time-space continuum that leads to information needs and ultimately outcomes.

Sense-making approach has the ability to uncover the hidden and untested biases on the part of the researcher for validating research questions. Postgraduate students as researchers are assumed to use their own experiences, theories, understandings, and hunches to make sense of their research work. The approach further takes into consideration the framing of research questions, data gathering and the expertise of individual researchers. Its broadness and flexibility can be applied to almost all situations of research information behavior. However, in interdisciplinary studies, it is often difficult to use a single theory to address all concerned themes sufficiently but sense-making approach provides an opportunity for emerging information when felt lacking needed to satisfy the research purpose. Postgraduate students' RIS begins with the realization of a problem (a gap that needs to be filled) which leads to a search for pertinent information through appropriate research information sources (RISO).

1.7.1 Conceptual Framework

A number of variables and their relationships as regard to postgraduate students' research information seeking and usage are presented in Figure 1.1 below.

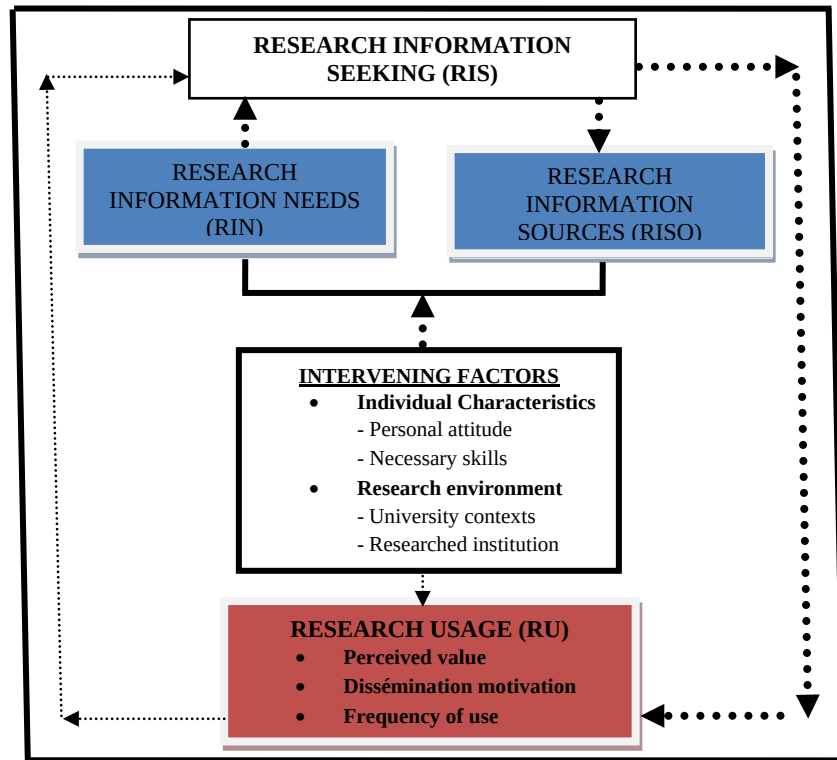
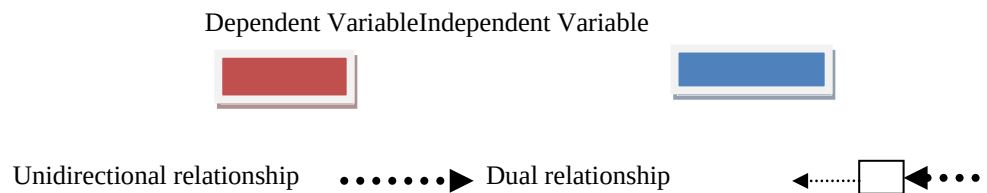


Figure 1.1: Conceptual Framework.Source: Researcher, (2017).



From the conceptual framework, a felt problem as perceived within the minds of a postgraduate student (a researcher) influences the initial feeling for research information seeking (RIS), that in turns leads to alternative of research information needs (RIN) through various research information sources (RISO) as inputs to generate new ideas or innovations in respect to the identified research problem which will ultimately determine the usefulness of the research findings and usage.

The context of research information seeking and usage may also be influenced by personal individual characteristics or research environmental contexts which the research work takes place. These variables may, however, affect individual research information seeking and use in many ways; for example, the inaccessible information source may affect the use of available valuable information. In the same way, if postgraduate students lack the necessary knowledge and technical skills in information filtering, may fail to use the right information sources. Moreover, if the environmental context does not support the students' research information seeking and use, will equally affect their approaches of information seeking and usage.

1.8 OPERATIONAL DEFINITION OF TERMS

Individual characteristics: Are individual traits possessed by researchers e.g. attitudes, perceptions and skills that can influence the personal conduct of research work of the postgraduate student.

Research: Involves an investigation of a phenomenon by postgraduate students for the development of knowledge which emanates from searching for missing information using various information sources by taking into consideration the quality, ease of use and access of the sources (Okafor, 2011).

Research environment: Include both physical and abstract environments e.g. the University contexts and researched institutions which influence both the conduct and use of postgraduate students' research works.

Research information: Is information required by an investigator who wants to conduct a scientific inquiry. It include information on how to select or to formulate a topic regarding to the existing problem, how to select the research design, study methodology and significance of the study.

Research information seeking (RIS): Refers to the consequence of a felt information need by a user who may then make demands upon formal and informal research information sources or services in order to satisfy the research needs (Baro et. al., 2010). In the context of this study, research information seeking refers to the way postgraduate students seek research information.

Research information need (RIN):In information science, it stem from a vague awareness of something missing and as culminating in locating research information that contributes to understanding and meaning It is an anomalous state of knowledge or a gap in individual's knowledge in sense making situations. For a person to experience a research information need, there must be a motive behind it (Wilson, 2006). In this study, it refers to the postgraduate students' research information needs.

Research information sources (RISO): This is a place where a researcher can visit to access their required research information. According to Napoli (2001), research information sources can be categorized as: formal, informal, commercial and media sources. For the purpose of this study it refers to all possible sources referred and used by postgraduate students to seek for research information regarding to their research needs.

Research Usage (RU): Refers to the process by which specific research-based knowledge (science) is implemented in practice. For the purpose of this study, it refers to the process whereby postgraduate students are supposed to transform the research knowledge into practice so as to solve the identified problem within the study area.

Postgraduate students: This is a category of the students in higher learning institutions who are taking higher degrees. In this study it refers to students undertaking masters degree programmes both by coursework and thesis.

Thesis: It is a compilation of research report that proves the postgraduate student is knowledgeable about the information researched. It shows the ability to think critically about a topic and to knowledgeably discuss the information in-depth used to expand upon a subject that is most relevant to a specialized area pursued

professionally. In this study, it implies a research project that marks the end of a Master's degree program.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1 INTRODUCTION

This chapter reviewed relevant literature based on the study objectives namely: determinants influencing research information needs among postgraduate students at the University of Dar es Salaam (UDSM); research information sources used by postgraduate students at UDSM while conducting research works and ways in which the research findings from post graduate students are being used and the description of a research gap.

2.2 POSTGRADUATE STUDENTS RESEARCH INFORMATION

SEEKING DETERMINANTS

RIS is a broad term and multi-faceted concept which involves actions of individual researchers to express the ways of diagnosing, perceiving and conducting a research endeavor to satisfy the research information needs. Being situational bound construed by individuals where researchers need to shift from the traditional system-centered approach to a more user-centered approach, information needs and seeking became the central part of research in information studies (Patricia & Kelly, 2002).

Research by Baro, Onyenania and Osaheni (2010) on RIS behaviour of students from three Universities in the South-South Geo-political zone of Nigeria which intended to establish the RIN, RISO and information searching strategies revealed the influencing factors to include: information needs on academic issues for class assignments, seminar papers and class discussions (93.2%), personal information (4.0 %), and sports information (2.8 %). The study however covered undergraduate students in history and included interviews and observation methods as data collection methods. This study investigates on determinants of RIS and usage among postgraduate students with a focus on how postgraduate students seek research information, the needs and sources and how findings are being put into use. Their research, however, exploited triangulation strengths from different data collection methods unlike a single technique of data collection of self-administered questionnaires.

A paper presented by Majid, Hayat, Patel and Vijayaraghavan (2012) in a conference on GenNext Libraries titled “ Emerging Technologies in New Direction for Libraries” with the aim to investigate on factors influencing information needs, seeking behavior and usage of different information sources by postgraduate students undertaking Master of Business Administration (MBA) in Singapore indicate that the basic purpose of students to seek for research information was mainly for academic performance. However, data collection in the paper was through a pretested questionnaire and snowball sampling technique, and it did not

indicate the study population, the respondents' sample size and how it was selected, and how data analysis was undertaken. The paper used only one category of MBA students while the current study population was students from four different schools of the University.

A research study by Kakai, Ikoja–Odongo and Bukenya (2004) on “Information seeking behavior of undergraduate students of Makerere University, Uganda” show that the academic information was the highest rated with (64.1 %) by the interviewed students. A case study design and quota sampling technique were adopted to draw a sample of 115 of undergraduate students in the 2001/2002 academic year from the selected faculties were used. Their research number in each stratum (each quota) however was derived using Walpole's formula, adopted quantitative data analytical techniques (Ellis' model & the chi-square statistics) to test hypotheses, the sample included both students and academic staff using questionnaires, interview and observation methods for data collection without indicating how collected data were analyzed.

Another research study on Information seeking behaviour of postgraduate students at the University of Agriculture Abeokuta (UNAAB) for 2010/2011 academic year which was conducted by Oluwafemi, Adeniyi, Oluseun and Olatunde (2013) with the aim to evaluate on how the students behave towards seeking knowledge they need for academic activities, indicated that students need mostly scientific/technical

information, methodical, patents standards, and conference proceedings. Their study differs from this study since they covered only Agriculture graduate students using an in-depth semi structured interview in data collection to examine information seeking behaviour and covered only a one-year period but did not take into consideration on the use of research findings.

The article titled “Scholarly use of information: Graduate students' information seeking behaviour” by George, Bright, Hurlbert, Linke, St. Clair and Stein (2006) was aimed at describing the graduate students' information seeking behaviour and their use of information to support their process of inquiry and scholarly activities. The results from the article indicate that the graduate students' information seeking behaviour is mainly influenced by consulted people. The basic population and sample in the article comprised both doctoral and masters’ students from seven colleges within the University and used exploratory research approach with semi-structured, in-depth interviews for data collection and employed both qualitative and quantitative data analysis paradigms.

2.2.1 Stages Undergone in RIS Process

The attitude of an information seeker can be perceived as the individuals’ feelings about performing that behaviour where overall attitude can be assessed as a product

of individual consequences and attractiveness estimation for all anticipated consequences of that behaviour.

Different schools of thoughts assert that individual behaviour is determined by behavioural intentions which are the functions of personal feelings toward the behaviour and subjective norms surrounding the routine of that behaviour.

The Anomalous State of Knowledge ASK Model which was propounded by Belkin, (1980) indicates a series of stages that an information seeker goes through. First, a person encounters a problematic situation in some aspects, then the individual recognizes anomaly between his/her knowledge about the problem and what he/she needs to know to solve it accompanied by a feeling of uncertainty. The information seeker is pushed to seek relevant information and the problematic situation is resolved when an intermediary provides the needed information.

In addition, another theory of information seeking behavior as developed by (Fishbein & Ajzen, 1975), commonly known as the theory of reasoned action (TRA) can be represented as;

$$\beta = \beta_1 = \gamma_1 A\beta + \gamma_2 SN$$

Where;

β = Behavior

β_1 = Behavioral intention

$A\beta$ = Attitude toward behavior

SN = Subjective norm

γ_1 and γ_2 are weights of the importance of each term.

In the course of information seeking, the subjective norm represents an individual's perception of whether people care on the behavior to be performed. The role of individual opinion is weighted by the motivation that an individual has to conform to the wishes of that referent. Unlike the sense-making theory, the notable weaknesses include its significant threat of compounding between norms and attitudes and assumption that an intention to act will be free without limitations. In reality, constraints such as time, ability to act, environmental contexts and unconscious habits will hamper the freedom to act.

2.2.2 Control of Personal Behaviour in Relation to RIS

The human behaviour is driven by behavioural intentions which are functions of individual's attitudes, subjective norms, and perception of the ease of behavioral control (Ajzen, 1991). Personal behavior is an individual's perception on the simplicity of performing a behavior. As stated in the theory of planned behavior (TPB), the control individuals have in relation to their behavior is lying on the continuum from behaviors that are effortlessly performed to those requiring

substantial efforts. That is, the more effort is put into research, the more value will be realized. The remarkable weakness of this theory is its proposition that the relationship between behavior and behavioral control should be between behavior and actual behavioral control rather than perceived behavioral control that direct to the use of perceived control as a substitute.

2.3 DETERMINANTS OF POSTGRADUATE STUDENTS' RESEARCH INFORMATION NEEDS

The root of research information seeking (RIS) is assumed to arise from research information needs (RIN) which falls into various categories; the need for new information; need to expand or clarify the information obtained, and need to confirm or validate the known information. As stated by Kebede (2002), in the University of Kwa-Zulu Natal the goal of information seeking activities is to find out information that satisfies the information needs. Essentially, RIN is a situation that depends on many aspects and changes as the person goes from one stage of the task to the next. The need to become informed and knowledgeable leads the individuals' process of identifying information needed. The process, however, depends on how individuals articulate, seek, evaluate, select and finally use the required information (Zawawi & Majid 2001). Understanding both information needs and seeking behavior is essential as it helps in the planning and

implementation of the type of task performed by individual researchers to shape the ways of acquiring, selecting and use of information.

A study conducted by Thani and Hashim (2011) titled ‘Information Needs and Information Seeking Behaviors of Social Science Graduate Students in Malaysian Public Universities showed that majority of postgraduate seek for information; to solve a problem at hand, need for new information to expand, validate and clarify the obtained information, recognition of existence of uncertainties, increase the current stage of knowledge, understand the meaning of information and fulfill their research requirements.

Nwagwu, and Segilola, (2013) carried out a study to examine the information needs, information sources and information seeking behaviors of engineers in breweries in Nigeria, the findings indicated the major information need of engineers is to acquire more knowledge not necessarily for academic, research, or product related purposes but rather about new discoveries in the field and how to use newly acquired types of equipment. Engineers seek less information about clients, social and political activities. However, the internet was the most preferred source and considered most relevant by the respondents. They also need promotion of social Web technologies e.g. blogs, wikis, podcasts and other social networking services for better job performance through innovations. Data collection instrument (administered questionnaire) was similar to the method applied in this study.

2.4 DETERMINANTS OF POSTGRADUATE STUDENTS' RESEARCH INFORMATION SOURCES

It is essential to understand that postgraduates are basically research students who require lots of research information for academic assignments and other requirements. However, the likelihood of a source being selected by graduate students depends on the perceived accessibility and quality of information, amount of effort and time needed is a strong predictor of information uses (Chandel & Saikia, 2012). Sources of information are information earners that can possibly meet the information needs of different categories of users based on the speculated and desirable, useful and realistic benefits from a source (Harle, 2009).

Research information sources can appear in different forms e.g. primary, secondary or tertiary categories that can be consulted to meet research requirements. For example television watching, radio listening, newspapers readings, expert consulting, attending seminars, workshops, reading articles from refereed journals, books, oral communication and use of the internet (Kebede, 2002). As stated by Bronstein (2010), the end users tend to seek research information basing on availability, accessibility, ease and ability to use the information source. Other research information seekers make use of library collections and search engines e.g. Google scholars. However, Ugah (2000) and Rassool (2005) argued that some of

research information sources cannot be effectively utilized due to illiteracy level, economic status, availability as well as insufficient time.

A research study conducted by Anyaogu (2014) titled “Postgraduate law students information needs and seeking behaviour” with the purpose to find out various legal resources available to postgraduate law students; their information sources/services utilized by them and their level of satisfaction from information obtained from the sources revealed that the sources used by academic to seek for information was mainly through browsing on the shelves, followed by subject/author/title catalogues. The study however differed with this study since it was limited to printed sources only and different mode of administration of the survey instrument.

A paper titled Health Information-Seeking in the Digital Age in the Journal of American College Health by Percheski & Hargittai (2011), examined the sources of health information among first-year university students and whether the predictors of information-seeking varied by the information source. The findings showed that young women are much more likely than young men to seek health information. However, the characteristics associated with looking online for health information are different than those for using other information sources, and students who look online for health information also report greater use of other information sources.

In addition, the researcher used internet uses and regression analyses to examine predictors of source-specific health information-seeking.

A study titled “Information sources used by postgraduate students in Library and Information Science” by Echezona et., al., (2011) which intended to find out what journals were most cited by Masters students who graduated from 1997-2007, the major subject areas covered in the research and the extent to which different library and information science resources were cited by in the Department of Library and Information. The study population however, covered all master’s and doctoral students’ theses of library and information science. The results showed that from 1997-2001 no online information was cited but was most cited in 2007 and makes journal articles to be the most cited sources by the postgraduate students mainly due to developments of information technologies.

Another research by Cláudia and Ana (2010) titled “Applying to higher education: information sources and choice factors” centered on students’ decision-making process focusing on the information sources and choice factors students draw on when selecting a higher education institution revealed that the university website was rated among the most three used sources of information by the majority of students. However, the research was administered to students who were enrolling for the first time at Portuguese Universities didn’t mention the level of education or degree sought and applied data analysis techniques.

Additionally, a study by Okiki et al., (2011) titled, " The use of electronic information sources by postgraduate students in Nigeria: Influencing factors" The research aimed to establish factors influencing the use of EIS in Nigerian Universities. It was found that the strongest factor that influenced postgraduate students to use electronic information sources (EIS) is the need to carry out a research work, writing the term paper and completing course assignment respectively. The research however used a stratified disproportionate random sampling technique to select a study sample from two Universities i.e. University of Ibadan (U.I.) and the University of Lagos using non- probability sampling techniques. Another study by Otulugbu (2017) titled "Awareness and use of online information sources among University of Ibadan (UI) students intended to investigate the awareness and use of online information sources among UI undergraduate students showed majority (97.9%) of the students were generally aware of online information sources though very few were however aware of individual online sources that are made available within the university and satisfied with available online information sources.

A study by Fasae (2012) about 'Citation Analysis of Dissertations and Theses Submitted to the Department of Agricultural Economics and Extension' exposed that journals were the most consulted information materials, closely followed by books while resources from the web/Internet was least utilized by Agricultural

Economics and Extension (AEE) students in which recent Journals of Agricultural Economics was the most cited journal followed by books and resources from the web/Internet. The study however used purposive sampling techniques to select a total sample size of 68 including 52 master's dissertations and sixteen 16 doctoral theses examined between August and September 2010.

2.4.1 E-journal Information Sources Used by Postgraduates Students

In Malaysia, a study by Majid and Kassim (2011) concluded that e-journal was widely used by education lecturers and has the potential to be diffused in teaching and learning as proposed by the diffusion theory by assessing the usage of e-journal amongst education lecturers in the public university in Malaysia. The responses rated as “agree” to the 10 statements of preference for using e-journal formed positive results preferred to use e-journal for academic purposes compared to printed journals. The weaknesses, however, were limited itself to education lectures exclude non-education professions, examined one source of information without mentioning the sample size and targeted population.

Maloto (2014) conducted a study about Information behaviour of fourth-year students at Mzuzu University in Malawi. The results of the study revealed that most of the students needed information for their academic studies. Although they preferred electronic sources, they relied mainly on the internet and search engines

like Google. They neither prefer printed information sources nor did they use e-journals, subscription databases or printed journals. Majority of students also did not use truncation and Boolean logic when searching for academic information. Despite the fact that the target population was drawn from five faculties of the Mzuzu University like this study, both qualitative and quantitative paradigm was used to investigate the information students' seeking behaviour in general.

A study by Addisalem, Gebrekidan and Desta (2016) on the use of electronic information resources by postgraduate students at University of South Africa (UNISA) with the aim to investigate on the use of electronic information resources by postgraduate student revealed that postgraduate students had basic computer and information literacy skills but lacked advanced IT skills and ICT infrastructure which affected negatively their usage of electronic information resources due to inadequate internet connectivity and frequent electric power interruptions. The study however focused mainly on students' information-seeking behavior on electronic information resources' usage in academic matters without dwelling into their specific research information seeking and on how the acquired information from e-sources was being used in practice.

2.4.2 Determinants of Postgraduate Students' RISO preference

A study conducted by Fidel and Green (2004) about the information sources preferences criteria by library and information science students for their academic and personal information needs showed that the main preference criterion for networked sources was accessibility which was perceived as ease of use, time-saving, language and physical proximity. The main rated preference criterion was the quality and reliability of the information provided by the source. Diaries were also valuable tools for getting a glimpse into the participants' thought processes. The study, however, focused on the participants' preferences for information sources and the ways that brought them to look for information and the process, sequences and pathways of information sources used to clarify information source' preferences. The study also failed to show the exact population used to formulate the targeted sample.

2.4.3 Postgraduate Students' Web Search Behaviour and Accessibility

A research study about the Web search behaviour of postgraduates at Sokoine University of Agriculture by Sife (2013) with the purpose of understanding the search characteristics of postgraduates, reasons for using the Web, usage of various web features, web search skills and problems faced while using the Web indicates that most postgraduates were experienced Web users and accessed the Internet mostly through their own modems, relied on Web resources for researching class

assignments, communications, and had positive attitudes towards these resources. The study population, however, was not stratified on the basis of professional disciplines, departments or study programmes but comprised both s students pursuing masters and doctoral degree programmes at Sokoine University of Agriculture (SUA), Tanzania which may lead to non-representative sample.

Ani et.al., (2014) investigated on the effect of accessibility and utilization of electronic resources by academic staff on productivity at the University of Calabar and the University of Ibadan, Nigeria in order to determine the effect of accessibility and utilization of e-resources on the productivity of academic staff. The finding revealed that there is a significant correlation between accessibility and utilization of e-resources and that there is a positive effect due to accessibility and utilization of e-resources on productivity at the surveyed universities. The University of Calabar was found to be more productive than those of the University of Ibadan. The study, however, adopted quantitative and bibliometric research methods and a sample was drawn from a population of academic/teaching staffs only.

2.5 POSTGRADUATE STUDENTS' RESEARCH FINDINGS

UTILIZATION

Different theorists discussed the concept of research findings usage from different perspectives. Stetler (2001) perceived research findings usage as the process of transforming research knowledge into practice that can be viewed into research knowledge regarding the products of research and knowledge. Utilization of research products refers to the use of research findings to validate measuring instruments, the use of research components for the purpose of problem-solving. While utilization of information come into sight when the users start to put obtained information into use from information sources, research findings utilization refers to that process by which specific research-based knowledge or science is implemented in practice (Squires et.al, Estabrooks, Gustavsson, and Wallin, 2011). It is the action of application of evidence emanated from research work or scientific inquiry into policies, programs and practices to improve performing outcomes by involves various operational strategies.

A study by Walugembe, Kiwanuka, Matove, Rutebemberwa & Reichenbach (2015) about 'Utilization of research findings for health policymaking and practice in Bangladesh' which explored on activities implemented to promote research utilization and the extent to which individual researchers felt their research findings contributed to the policymaking process. The data collection was done between

September and December 2011 through interviews, focus group discussions (FGDs), database and documentary review. The results found most researchers often engage in a variety of activities to inform research utilization process including; holding dissemination workshops, publishing in scientific journals, developing policy briefs, provide technical assistance and holding one-on-one meetings with service providers and program implementers and believed their research findings had been utilized and contributed to influence policy and administrative practices within Bangladesh.

The study however used exploratory case study design and the study sample focused on health works only including key informants, researchers, policymakers and program implementers but failed to indicate the exact used sample size. Data were analyzed manually through thematic framework approach. Unlike other researches, this study provided a substantial evidence on efforts to be enhanced for effective utilization of research findings all the way through continuous stakeholder engagement before, during, and after the research process, making research findings more accessible, relevant, easy to use and with increased advocacy and communication efforts using multiple channels to reach the targeted research addressees.

The report on 'Evidence-informed Policy Making: Setting Reach-Policy Initiative Priorities for 2008-2010 in Tanzania' by NIMR (2008) which aimed to identify the

obstacles to better research-policy communication, capacity and willingness in research policy dialogues and recommendations on what should be done to facilitate research findings communication in Tanzania revealed that although the research and academic institutions have satisfactory capacity to carry out researches, they have low capacities to repackage research findings into user-friendly language for policy makers' consumption. The government also does not provide sufficient research funds to research institutions and hence they rely on international donor agencies to fund research works. This is also coupled with inability to consume scientific information in policy development process due to low level of scientific understanding among policymakers.

Furthermore, lack of motivation and incentives to receive new ideas scientific information in particular were found to hinder effective dissemination of research findings from higher learning institutions in general. The study, however, used survey method to draw opinions from researchers, academicians, civil societies, religious organization, development partners and policymakers. It was limited to workers within the health sector only without explaining how the study sample was drawn from the population and also failed to show how data analysis techniques.

A study by Oronje, (2015) titled 'Barriers to research use in the public health sector in order to assess the status of research use in the health sector in Kenya and Malawi'. Respondents included senior officials and technical staff within the

Ministry of Health (MoH) and members of parliament. The study discovered a wide range of barriers that hinder policymakers within the MoH and parliament from using research evidence in their work to include; lack of access to data and research to respondents so as to be able to apply the research theme and contents in their work, lack of information seeking technical skills, inability to interpret and adapt research for local contexts, synthesizing findings from research studies into policy recommendations, and summarizing research findings into clear policy use by senior officials. Thus the research-based evidence is often not well packaged for ease of consumption by policymakers including a limited appreciation of the importance of research use among senior ministry and parliament officials. On the other hand, the study failed to indicate the study sample size, and how data were collected and analyzed and was more specifically focused on medical matters.

2.5.1 Postgraduate Students Research Program and Stakeholders Engagement

Research finding utilization process links the undertaken research study to informed policy- practices' opportunities and can be used to inform new research themes. It is, however, a complex process in which knowledge is transformed from research findings into instrumental, conceptual or persuasive utilization. As argued by Saade, Nebede and Mak, (2009), research motivation influences human behaviour, actions and certain forms of recognition or incentives in sequential arrangements order from physiological needs to self-actualization. There should,

therefore, be significant motivating factors among postgraduate students regarding RIS and research usage. Effective utilization of research findings can thus be enhanced through continuous stakeholder engagement as it leads to increased advocacy and simplified communication efforts for optimal consumption of the postgraduate students' research findings.

A study about Research knowledge brokering program and evaluation in Burkina Faso conducted by Christian et. al., (2016) shows that research use often increased at the local level among health-related professionals, regional non-governmental organizations, the impacts at the Ministry of Health decision makers was negligible. The results highlighted on the need for better training in knowledge transfer for local and international researchers and proper identification of the gateways to reach high-level decision makers. Encountered obstacles were found to be: complicated access to decision makers, poor team communication, non-conducive working environment with a need to analyze on how to approach national and regional decision makers; invest time and effort in developing different actors and ensure adequate communications and resources for key research stakeholders' engagement. The study differ nonetheless used information brokers to comprise the respondents' sample in order to establish the knowledge brokering program.

2.6 RESEARCH GAP

From both theoretical perspectives and empirical evidence, there is a significant substantiation that the drivers behind the pace and direction for postgraduate students' research information seeking and usage are widely not covered within the existing literature. It was, therefore, essential to further investigate on this existing knowledge gap about the determinants on how postgraduate students seek research information and ultimately put their findings in forms of research reports, dissertation or thesis are being used by designated research addressees.

CHAPTER 3

RESEARCH DESIGN AND METHODOLOGY

3.1 INTRODUCTION

This chapter explains the methods used to conduct the study. It covers the research design employed, independent and dependent variables, the location of the study, target population and sampling techniques. Research instrument, pilot study, validity and reliability, logistic and ethical consideration and data analysis are also provided.

3.2 RESEARCH DESIGN

Research design is a conceptual structure within which research is conducted by involving a series of decisions regarding the way the research is expected to be undertaken (Kothari, 2008). It is considered important as it facilitates the smooth conduct of different research operations to make the research efficient and yield maximal information with minimum effort, time and other resources. Because the study intended to dwell on postgraduate students' opinions, attitudes, perceptions and views in regard to determinants of research information seeking and usage at the University of Dar es Salaam (UDSM), descriptive research design was found to be appropriate for validating the determinants of postgraduate students' research information seeking and usage as intended in this study.

The descriptive research design is undertaken to describe the characteristics of a phenomenon of interest since it provides possibilities for describing observable facts as they occur in details, it allows non-numeric data collection and analyzed while interpreting the meaning (Sekaran 2003; Hughes et. al., 2006). This was done by providing them a number of variables in order to base on them while indicating their research information seeking determinants and utilization of their research findings.

Both and qualitative data were collected. While quantitative data were obtained from closed-ended questions such as dichotomous questions, multiple choices and Likert scales, qualitative data from open-ended questions were used to get in-depth information from descriptive explanations through appropriate narration that have a tendency to be process oriented, subjective, and descriptive based on feelings and attitudes to enabled to description of events and free expression of feelings. It is a scientific method of evaluation that yields charts or tables in turn from a given population to represent viewpoints.

3.2.1 Study Variables

Due to the heterogeneity nature of this study, different techniques were used to measure the degree of relationship among variables. Since research information

seeking determinants are many, postgraduate students' research information needs and information sources were considered as independent variables. Research findings usage was considered to be dependent variable and intervening variables were individual students' (researchers) characteristics and research environmental contexts. While other variables such as perceived importance on research usage (RU), motivation to research findings, behavioural attitudes on RIS and RU, satisfaction level of RISO and RIS evaluation were examined by respondents' ratings on a 5-point Likert scale, others such as intention to disseminate research finding and research output utilization were dichotomously oriented i.e. ('Yes or No') which were afterward statistically analyzed using frequencies, percentages, mean scores and standard deviations.

3.3 LOCATION OF THE STUDY

The study was carried out at the University of Dar es Salaam (UDSM). The selection of the University was prompted by the fact that; out of its ninety-four (94) offered Masters' degree programs, 80 (85.1%) are done by coursework and thesis, while 14 (14.9%) are done by thesis only as a precondition for degree enrollment. UDSM has been in operation for more than six (6) decades and became one of the leading Universities in East Africa in terms of both postgraduate degree programs and students' enrollment.

The four schools at UDSM were purposively selected based mainly on the nature of their programmes which demand postgraduate students to seek for research information and disseminate the research findings or acquired new knowledge in forms of research reports or theses as partial fulfillments of their degrees. Therefore, University of Dar es Salaam was considered an appropriate study location to provide valuable information to satisfy the purpose of this study.

3.3 TARGET POPULATION

The study targeted a population of 1043 postgraduate students drawn from four schools (Master' students) who were enrolled postgraduate students at the time of the study in the year 2014 to 2015 (DPGS, 2014). Selected schools at UDSM include University of Dar es Salaam School of Law (UDSL); School of Education (SoED); University of Dar es Salaam Business School (UDBS) and School of Journalism and Mass Communication (SJMC). As stated by Gay et al. (2009), the study population is the larger group from which a given sample is selected. Postgraduate students in the four schools of the University of Dar es Salaam (UDSM) who were enrolled and continuing with their Masters' degree programs at the stage of research proposal and thesis writing were selected as the unit of inquiry in this study. PhD students were not included due to the fact that most of their dissertations are done for a specific purpose, often accessible online; their findings can be retrieved easily and easily used by the research addressees.

Postgraduate students who were undertaking the Masters' degree programs by coursework and theses were selected as target population since their degree programs include the research component in line with the study objectives, and they were at different stages of the research work, therefore, could give valuable information as intended in this study. Table 3.1 presents a distribution of targeted postgraduate students in this study as obtained from the Directorate of Post Graduate Studies (DPGS) of the University of Dar es Salaam.

Table 3.1: Target population distribution

S.NO	SCHOOL	STUDENTS ENROLLED	POPULATION PERCENTAGE
1.	UDSLW	107	10.5
2.	SoED	476	46
3.	UDBS	228	22
4.	SJMC	223	21.5
TOTAL	-	1034	100

Source: Directorate of Post Graduate Studies (DPGS, 2014/15).

Key: UDSL - University of Dar es Salaam School of Law
 UDBS - University of Dar es Salaam Business School
 SJMC - School of Journalism and Mass Communication
 SoED - School of Education.

3.4 SAMPLING TECHNIQUES

Sampling is the process of selecting a small number of individuals for a study in such a way that the individuals chosen will be good key informants who will contribute to the researcher's understanding of a given phenomenon (Gay, Mills &

Airrasian, 2009). The main goal of sampling is to obtain a representative sample so that the researcher can study a smaller group and produce accurate generalizations about the larger group. There are a number of sampling techniques that are used in social science research which are broadly classified into probability sampling and non-probability sampling. In this study, multi – stage sampling approach was used due to targeted population variation which required application of different sampling techniques such as purposive, stratified and simple random sampling (SRS) that were then used in different stages.

3.4.1 Purposive sampling

Since the researcher wanted to attain the population that is capable of being studied within the scope of resources, purposive sampling technique allowed selection of four schools of UDSM as unit of analysis. Four schools were purposively selected based on the postgraduate students who were undertaking their masters' degree by course work and thesis when this study was being carried out. Purposive sampling is useful when a need to limit the population of the study exists. This method allowed a researcher to use own research experience to select a representative sample and is suitable when the researcher makes judgments to select cases in the midst of preferred information (Saunders et al., 2007). Four schools that are School of Law, School of Education, Business School and School of Journalism and Mass Communication were purposively selected.

3.4.2 Stratified Sampling Method

This approach is useful in case there is a need to indicate the size of respondents from each stratum that is the number of postgraduate students to be included within a sample from each school. As stated by Green (2007), results from stratified random sampling are more reliable and capable of giving more detailed information. The researcher then divided the study population into sub-populations or schools according to the nature of master's degree programs in those respective schools.

3.4.3 Simple Random Sampling Technique

The choice of a random sampling (SRS) technique was to give equal opportunity to each student to be included in the sample. Since each school was more homogeneous than the total population (the whole University), it was easy to get more precise estimates from each school to represent the whole. In order to make sure that the selected sample from each school was truly representative, postgraduate students were selected using SRS sampling method since it utilizes some form of random selection to ensure different students from different schools have equal chances of being selected to be part of the sample. This was carried out using the students' attendance register obtained from the class representatives (CRs). The researcher asked the students' class representatives (CRs) to provide a class list of students from the attendance register (often used as a control

mechanism) in order to select randomly a list of students to be included in a sample in a respective school. The researcher therefore selected the students to be included in a study sample from targeted schools using SRS technique.

3.4.4 Sample Size

Sample size is the number of items to be selected from the universe or population to constitute a sample. Theoretically, the sample should be central to sampling theory which is based on the degree of accuracy and precision (Newman, 2011). The number of items to be selected from the population to constitute a sample, its adequate size should; neither be excessively large nor too small, must be best possible representative enough and not less than 10% of the entire population (Nachmias & Nachmias, 2000).

According to Kothari (2008), when there exists a known size of a study population, the minimum sample size can simply be computed as;

$$n = N / \{1 + N x^2\}$$

Where;

n = required minimum sample size

N = targeted population size

x = significance level (10%)

Therefore the proposed minimum sample size (n) was computed as;

$$n = 1034 / \{ 1 + 1034 (0.1)(0.1) \}$$

$$n = 1034 / \{ 1 + 10.34 \}$$

$$n = 1034 / 11.34 \}$$

$$= 92.$$

Since the nature of the population under study include different sub-groups or strata, a larger sample size than the computed minimum ($N > 92$) was required in order to give reasonable number of respondents in each stratum. From the targeted population of 1034 from four schools as seen in table 1.1 above, the optimal sample size of 115 postgraduate students was purposively selected, which is equals 11.12% of the targeted study population but greater than the computed minimum sample of 92.

In stratified sampling technique, Kothari (2008) argued that the sample size from each stratum can proportionately being selected using the following formula;

$$n_i = (N_i / N) n,$$

Where;

n - Represents stratum size required,

N_i - Represents the total number of students in each stratum

N - Represents the total study population, and

$n = \sum n_i$ - Represents total sample size.

From the above formula, the number of respondents or sample size from each school (stratum size n_i) were computed as;

(i) School of Law (UDSLW) $N_1 = 107$;

$$\begin{aligned} n_1 &= (N_1 / N)n; \\ &= (107/1034) 115 \\ &= 12 \end{aligned}$$

(ii) School of Education (SoED) $N_2 = 476$;

$$\begin{aligned} n_2 &= (N_2 / N)n; \\ &= (476/1034) 115 \\ &= 53 \end{aligned}$$

(iii) Business School (UDBS)..... $N_3 = 476$;

$$\begin{aligned} n_3 &= (N_3 / N)n; \\ &= (228/1034) 115 \\ &= 26 \end{aligned}$$

(iv) School of Journalism and Mass Communication (SJMC)..... $N_4 = 223$;

$$\begin{aligned} n_4 &= (N_4 / N)n; \\ &= (223/1034) 115 \\ &= 24 \end{aligned}$$

Therefore the total sample size (n) was;

$$\begin{aligned} N = \sum n_i &= n_1 + n_2 + n_3 + n_4 = 12 + 53 + 26 + 24 \\ &= \underline{115}. \end{aligned}$$

A sample size of 115(11.12%) respondents was therefore randomly selected out of 1043 of the total population as summarized in table 3.2 below.

Table 3.2: Population and Sample size distribution

S.No	School Category	Postgraduate Students Population(N_i)	Population Percentage	Sample Size Computation (N_i / N) n	Sub –Sample (n_i)	Sample Percentage (%)
1.	UDSLW	1070p	10.5	$(107/1034)115$	12	10.4
2.	SoED	476	46	$(476/1034) 115$	53	46.1
3.	UDBS	228	22	$(228/1034) 115$	26	22.6
4.	SJMC	223	21.5	$(223/1034) 115$	24	20.9
	TOTAL	1034	100	-	115	100

Source: Study Findings, (2017).

Key: UDSL - University of Dar es Salaam School of Law
 UDBS - University of Dar es Salaam Business School
 SJMC - School of Journalism and Mass Communication
 SoED - School of Education.

3.5 RESEARCH INSTRUMENTS

Self-administered questionnaires were the main instruments used to collect data from students in the selected schools. Self-administered questionnaires were suitable due to; its ability to provide an opportunity for respondents to give frank and anonymous answers, not affected by the presence of the researcher, enable respondents to give their opinions independently and can be filled by respondents in their own convenient time. Closed and open-ended self-administered questions were found appropriate due to respondents' inadequate time emanating from other academic activities which could limit effective participation to instruments such as in-depth interviews and focus group discussions (FGD).

The researcher and research assistants distributed the questionnaires to the respondents and gave them time to complete filling in the questionnaires and later collected them after two weeks. The researcher ensured that the questions were properly written and arranged in appropriate sequence to reduce the chances of misunderstanding and confusion. The sequence also ensured that relations of one question to another were readily appropriate to the respondents. In terms of wording, the researcher ensured that each question was clear in order to avoid misunderstandings. The questions were short, simple, and conformed as much as possible to research questions. All distributed questionnaires were returned with a response rate of 100%.

Among the factors that contributed to the high response rate in returning the questionnaires include; appropriate timing of data collection, inclusion of well trained and committed research assistants who were able to convince respondents to fill in and return the questionnaires, and effective follow-up in the collection of the filled questionnaires. Information from the questionnaires was complemented by the information collected from literature sources which were found to contain appropriate information for the study.

To acquire appropriate literatures the following phrases were used; determinants of research information seeking, needs, sources, and usage. The terms were combined and searched in other information sources including; subscribed databases, specific

open access sources, and the general web such as Google scholar and yahoo. The researcher also used web-search techniques such as simple searching, phrase search, Boolean operators (AND, OR, AND NOT), word truncation and query modifications including in title and file type.

To avoid repetition of the respondents, the researcher ensured that data collection was done once in each of the selected schools before and after the core subject session, that is, the time when a cross cutting course to all students was being taught in a particular school. This was done by seeking permission and support from both the time table master and course facilitators

3.6 PILOTING

Before administering the questionnaire to the respondents, a pilot study was conducted. Piloting is the feasibility study of a small-scale version of the larger survey which involves the preliminary investigation of a research with relatively small sample before the main study done in order to pre-test the research instrument, correct observed anomalies and act as editing tool before undertaking the main study (Alasuutari, Bickman & Brannen, 2008). A pilot study sometimes referred to as a pre-test, gives a researcher an opportunity to identify questionnaire items that tend to be misunderstood by the participants. A pilot study can also improve reliability and validity of the study (Connaway & Powell, 2010).

Piloting sample was randomly drawn from two universities namely Mzumbe University (MU) and Sokoine University of Agriculture (SUA) both located in Morogoro region, Tanzania. A sample of fourteen (14) master's degree students, 8 from Mzumbe and 6 from SUA were selected for piloting. This sample however, was not included in the final sample used in this study. The factors considered in the selection of these two Universities have similar characteristics with that used in the actual study. These Universities are second and third largest public universities in terms of their operations' duration, and offered postgraduate degree programmes. The questionnaire was administered to collect data from respondents in which students were asked to make any observations and comments while completing the questionnaire. Data were analyzed using techniques similar to those applied in the main study.

Results from piloting were used as a means of vagueness test, finding out how long a respondent would take in answering the questions, establish the usefulness of the content and whether the questionnaire would be appropriate for person and time of administration. Identified weaknesses were used to improve data collection process, help the researcher to understand the appropriate time to collect data and undertake modifications to match with study objectives. It also helped to understand respondents' behaviour and motivations. The questionnaires were adjusted, corrected and areas that are not well understood were improved.

The participants of the pilot study indicated that the instrument was reliable and valid, though few minor changes were made to; correct grammar, make instructions more explicit and correcting typing errors.

3.6.1 Validity

Validity indicates the extent to which an instrument measures what it is intended to measure (Powell, 2004). Content validity was achieved by ensuring that the research instrument adequately covered the area being studied. This was done by ensuring that, each theme under investigation had adequate representation. The research instrument was then pre-tested prior to the actual study using the tool and procedures to those that were employed during the actual data collection. This was done to make the data usable.

The content validity was also obtained through pre-testing of the instrument on selected respondents from Mzumbe University (MU) and Sokoine University of Agriculture (SUA). These were helpful in determining whether the instruments adequately addressed the study objectives. Finally, construct validity was achieved by ensuring that all the terms used were operationally defined as established after the pilot study.

3.6.2 Reliability

Reliability is concerned with a degree to which a particular measuring procedure gives equivalent results over a number of repeated trials (Antonius, 2003). It is concerned with the consistency of an instrument in obtaining similar results under the same condition over a period of time. It attempts to indicate the extent to which the research tool is without bias (error free) and hence offers consistent measurement across time and across the various items in the instrument (Kripanont, 2007).

According to Mugenda and Mugenda (2003), the quality of a research study depends to a large extent on the accuracy of the data collection procedures. That is, to say the instruments or tools used to collect data have to yield the type of data the researcher can use to accurately answer her questions. Therefore, data obtained from the pilot study was used to determine the reliability of the various items in the instrument. To ensure that the same results were consistently obtained from the study, during pilot testing the instrument was administered by the research assistants and researcher at varying conditions of time of day and venue. The instrument proved to be strong as there were no variations in the responses based on surrounding circumstances.

In order to determine the internal consistency of each test item in the instruments, a correlation coefficient was determined using Cronbach correlation coefficient. The closer Cronbach's alpha was to 1.0 the greater the internal consistency of the items in the scale. The reliability test yielded a Cronbach's alpha of 0.76 which is closer to 1.0. The reliability coefficient that was obtained from the pilot was accepted since it attained a coefficient which the researcher considered to be reasonable based on George and Mallery (2003) who provide a guideline for interpreting correlation coefficients where: >0.9 mean 'Excellent'; >0.8 – 'Good'; >0.7 – 'Acceptable'; >0.6 – Questionable; >0.5 – 'Poor' and <0.5 – 'Unacceptable'.

3.7 DATA COLLECTION TECHNIQUES

The researcher and research assistant visited each of the selected four schools before and after the teaching session for self-administering of the questionnaires to postgraduate students. The researcher kept on visiting each school until the required representative sample from each school was obtained to form a total sample of 115. This was done by undertaking the following steps; data collection permit was first obtained both from the office of the dean of postgraduate studies of Kenyatta University (KU) and of the University of Dar es Salaam.

Secondly, the researcher asked for the support from the officer in charge of the Masters' time table to find out appropriate time in which the session for core courses or cross cutting subject would be taught. Thirdly, the researcher asked for

the support of course facilitators/lecturers to inform the students about the researcher and the purpose of the investigation.

The fourth step included self-administering of the actual questionnaire to the respondents randomly selected from the list of students included in the sample. Finally the questionnaire were received two weeks after the date of admission since it was considered by the researcher a reasonable time to allow students enough time to fill in and return the questionnaires. This was done purposively in order to provide a balance between the filling of the questionnaires and other pressure from academic matters.

3.8 LOGISTICAL AND ETHICAL CONSIDERATION

The main reason for logistical and ethical consideration was to ensure that all concerned parties were informed of the purpose of the research study and thereby pre-empt any form of suspicion and ensure their co-operation. As stated by Neuman (2006), ethical consideration deals with one's conduct, serves as a guide to one's behavior, define what is right, what is not legitimate to do and what moral research procedure involves and depends on the integrity of the individual researcher' values.

Official permission to undertake the research was obtained from Kenyatta University, office of the Dean, and Graduate School and research permit was also

sought from the dean of postgraduate programme of the University of Dar es Salaam. This was done to ensure that all concerned authorities were informed of the impending research and thereby pre-empt any form of suspicion and ensure their co-operation. To avoid violation of copyright, works by other authors in this research are credited through citations.

Respondents were thus informed of the rationale of the study and assured confidentiality of information provided as stated in an attached transmittal letter. In other words, respondents were asked to freely and willingly involve in the investigation. The collection of data was done by the researcher and the research assistants who were deployed for that purpose. Research assistants were first trained by the researcher on basic research skills on data collection techniques. Their main responsibility was to distribute, collect and make follow up on all questionnaires to ensure timely returns.

3.9 DATA ANALYSIS

The principal data analysis used descriptive statistical analytical techniques of evaluation to yield tables, histograms and pie charts to represent views and opinions from the postgraduate students. Data analysis as the process of interpreting data and examination of what have been collected make deductions and inferences from a study (Mutai (2000)). Since there is no quick-fix method in analyzing available qualitative data from descriptive study, the researcher had to

make sense of relevant data gathered from the questionnaire and responsibly presented what the data revealed. The study generated both quantitative and qualitative data obtained through the use of questionnaires. Once all data was collected, cleaned, edited, coded and screened for accuracy, they were analyzed differently depending on their types.

The Statistical Package for the Social Sciences (SPSS) computer program was used to prepare and organize quantitative data from the questionnaires for analysis then tabulated with simple graphics using frequency distributions with appropriate percentages. Bar graphs, pie charts, mean scores and standard deviation were computed and used to form the basis for data analysis. Qualitative data were organized into themes, categories and patterns pertinent to the study. Data were analyzed after grouping, classified, examine perceptions and interpretations of free format responses and words from different cases. This technique was valuable in attempting to answer the what, how and why questions. To assess the impact of intervening factors on other variables, the study was designed in such a way that individual characteristics of postgraduate students and factors related to the university and researched institutions' environment were included within the scope of this study.

CHAPTER FOUR

PRESENTATION OF FINDINGS, INTERPRETATION AND DISCUSSIONS

4.1 INTRODUCTION

This chapter presents the findings of the study and discussion as interpreted under specific sections arising from the objectives and respondents' responses. It starts with respondents' general information based on research objectives which were as follows: to identify the key determinants influencing research information needs; to establish the research information sources used by postgraduate students while conducting research works and the extent of usage of the research findings from post-graduate students at the University of Dar es Salaam.

4.2 POSTGRADUATE STUDENTS' RESPONSE RATE

The sample of the study, 115, was formulated by one category of respondents from the population of postgraduate students who were pursuing the Masters degree by coursework in the year 2014/15 year. Self administered questionnaires were distributed to respondents and the response rate amounted to a 100% due to effective and close follow up of the researcher and research assistant.

4.3 DEMOGRAPHIC TRAITS OF POSTGRADUATE STUDENTS AT THE UNIVERSITY OF DAR ES SALAAM

Section (a) of the questionnaire related *inter alia*, to the background information and demographic characteristics of postgraduate students based on their gender, age and nature of postgraduate study enrollments. Demographic characteristics such as gender and age dominations are important parameters in social analysis because postgraduate students of different gender and age possess different traits and behave differently with specific experience that influences their ways of conducting their research works.

4.3.1 Postgraduate students' gender characteristics

Students' gender characteristics were used to unfold the nature of the postgraduate student enrollment so as to be able to assess the aspects of research information seeking and usage in terms of their sex. Fig. 4.1 presents the respondents' gender characteristics.

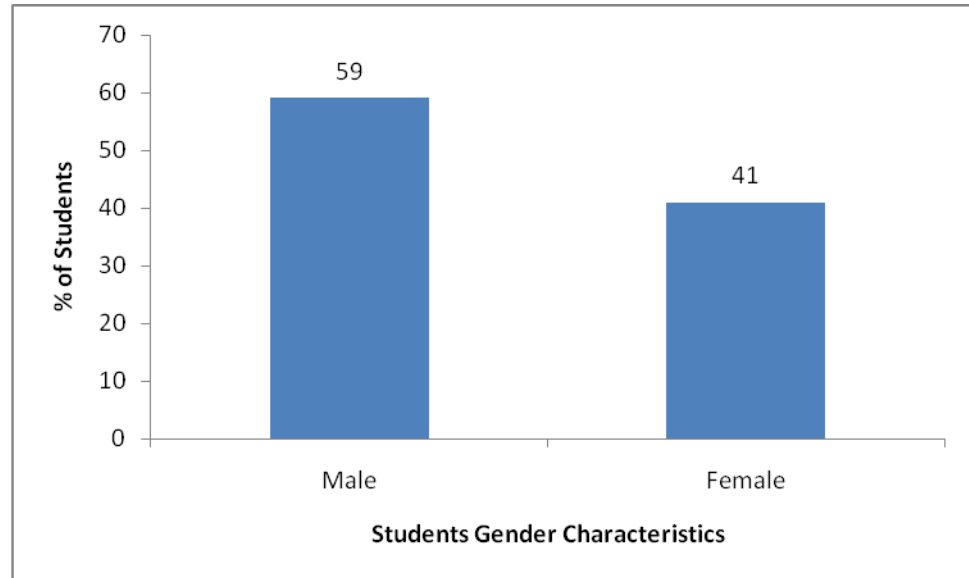


Figure 4.1: Students' gender characteristics.

While some of the information management studies have examined mediation and moderation effects of gender on new knowledge adoption and usage, others have approached the direct relationship of gender with adoption and usage found that men and women often differ in their information seeking perception as well as in the use of various sources of information (Baro et al., 2010). For example, male are most likely to adopt ICT as they perceive as reliable information sources than women. From figure 4.1 above, out of 115 respondents, 59% of the respondents were male and 41% of the respondents were female. This implies that the number of female respondents was lower than their male counterparts.

The male and female disproportion is partly contributed by cultural factors which tend to minimize women opportunities and privilege of attending educational institutions right from primary to higher levels. Previous studies in less developed countries in African societies indicated female disadvantage were attributed to a high dropout rate of girls due to; unplanned pregnancies, early marriages and family matters (Maloto, 2014). As a result, the number of female students' enrollment at tertiary education institutions, Universities and even in postgraduate degrees often become lower when compared to males. These findings call for responsible authorities and policymakers, in particular, to enact educational strategic alternatives to address the gender imbalance in educational enrollments at different levels.

In Tanzania for example, both the Commission for Universities (TCU) and National Accreditation Council for Technical Education (NACTE) law requirements call for advocating of equal chance of enrolment for both genders in higher learning institutions when postgraduate scholarship opportunities arise (URT, 2002a). The widespread obstacles faced by women in African societies include; societal stratification of roles with men controlling their wives, customs preventing women from undertaking certain decision-making roles and intra-household structures which give men more power over decision-making on what women should decide and do.

4.3.2 Postgraduate Students' Age Characteristics

The students were asked to indicate their age in years by choosing the appropriate age category. Figure 4.2 below depicted the distribution of age categories of respondents.

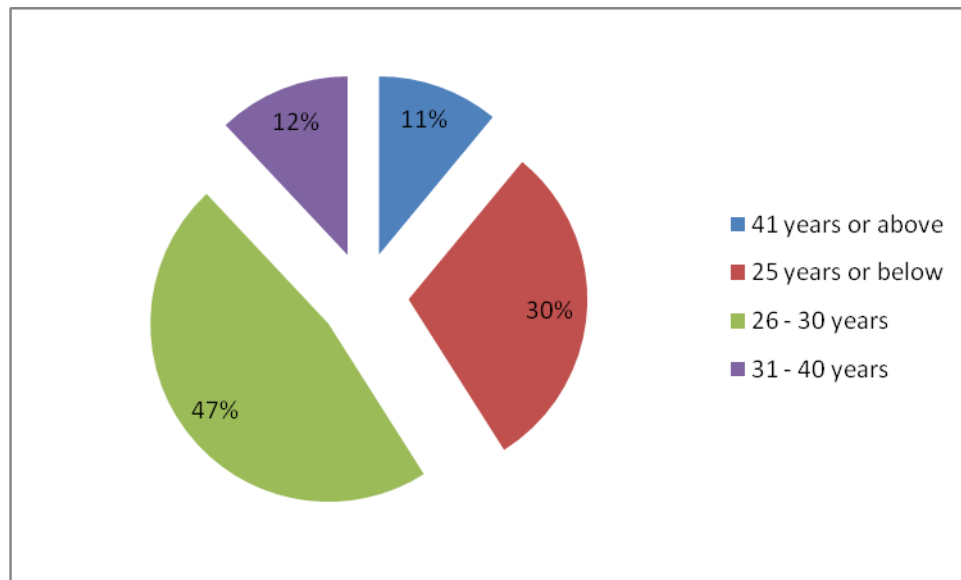


Figure 4.2: Postgraduate students' age profile.

It is a fact that individual people with different age possess differing traits, attitudes and subjective norms which tend to influence their ways of seeking information, information needs and usage and the way they perceive and value different sources of information. As seen in figure 4.2 above, 30% of the respondents (postgraduate students) indicated to be in the age of 25 years or below, 47% were in the age of 26-30 years, 12% were in the age of 31-40 years and 11% were in the age of 41 years and above. The above analysis demonstrates that the majority of the

postgraduate students during this research study were in the age between 26 -30 years (47%). Since the majority of students were in the age between 26-30 years, it implies that most of them often join master degree programs immediately after completion of their undergraduate degrees or securing employment for their future career developments. The findings for this young age group are supported by Lwehabura, (2008) who stated that the younger people have more energy and drive to attempt new things and determination with more open to new ideas than the older people to search for means of survival alternatives through higher educational developments.

4.3.3 Postgraduate Students' Registration Mode at the University of Dar es Salaam

The study intended to explore on the ways in which postgraduate students are enrolled and registered into Master's degree programs at the University of Dar es Salaam in order to establish whether postgraduate students' registration mode have any significant effects on individual seeking behavior and use for research information. The findings were captured and presented in figure 4.3 below.



Figure 4.3: Masters' students' course registration modality.

From the analysis above, it is clear that there are some factors which require the postgraduate students to undertake their studies as part-timers. Most students were found to be employees from different organizations, who are not granted permission to go for further studies and opted for part time degree studies to enable them to work and gain incomes in form of salaries to enable them to pay for their University fees. As seen in Fig. 4.3 above, the majority of postgraduate students, 57.4%, pursue their Masters' degree program study while registered as part-timers which is carried out at evening after working hours, and 42.6% were registered as full-time students.

As in other many developing countries (DCs), in Tanzania the working condition in the majority of public and private sectors does not allow their employees to

undertake further studies or scholarships; as a result, most of the postgraduate students opt to pursue their Masters' degrees on a part-time basis for their career development. It was further noted that those who opted for full-time registration modality were those who were granted permission by their employers particularly individuals who were working with higher learning institutions or who were sent by the employers as part of the requirements of their working conditions or demands from project undertaken by their organizations. When looking from organizational productivity perspectives, while part-time postgraduate students have the advantage that they do not lower their employers' productivity, the full-timers are the potential future employees with capabilities to march with the future demands of developments of their working organizations.

4.3.4 Forms of Enrollments in Masters' Degree Programs at UDSM

The study also intended to understand students' registration program. The findings were presented in figure 4.4 below.

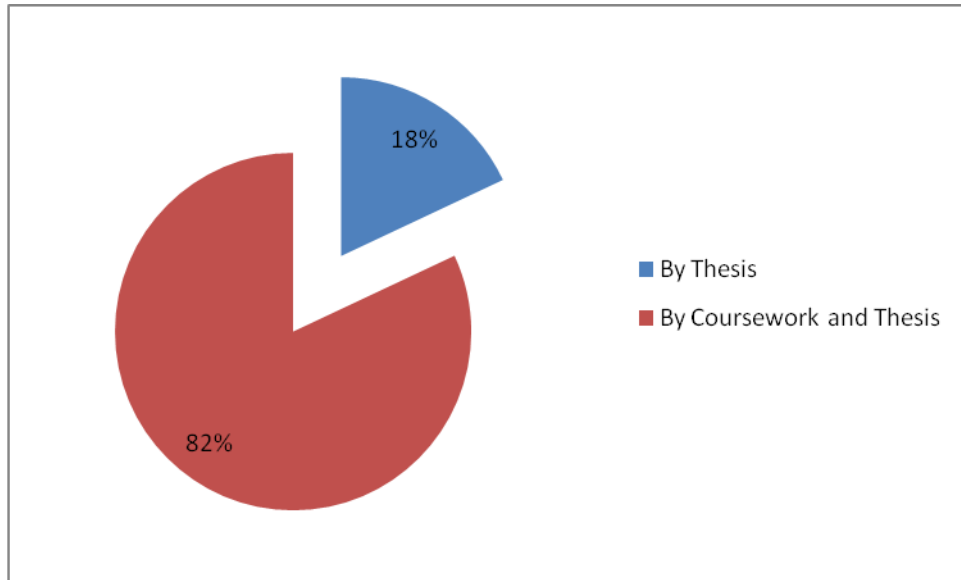


Figure 4.4: Forms of enrollments in masters' degree programs.

It was worth to use the University of Dar es Salaam to validate the findings on RIS and usage and whether the research findings of this segment are available for knowledge sharing as per the objectives of this study. From figure 4.4 above shows that more than three quarters of graduate students 82% undertake their study by coursework and by thesis only and was less than a quarter 18% undertake their study by thesis without any student who have undertaken the study by course work alone implying that the University of Dar es Salaam postgraduate degree programs were offered either by coursework and thesis or by thesis only as seen in appendix (III). These findings support the arguments from Zawawi and Majid (2001) who asserted that the need to become knowledgeable leads to the individuals' process of identifying personal needs, to articulate, seek, evaluate, select and finally use as

stipulated within information-seeking behavior. Thus, understanding individual needs from different groups is essential as it helps in the planning, and implementation and within a working environment and the type of task performed by individuals which eventually leads to selection process on how to acquire and utilize the information.

4.3.5 Stages in Postgraduate Students Research

To address stages undergone by postgraduate students while conducting research it was imperative to explore on the research stages of postgraduate students and information sought as presented in Figure 4.5.

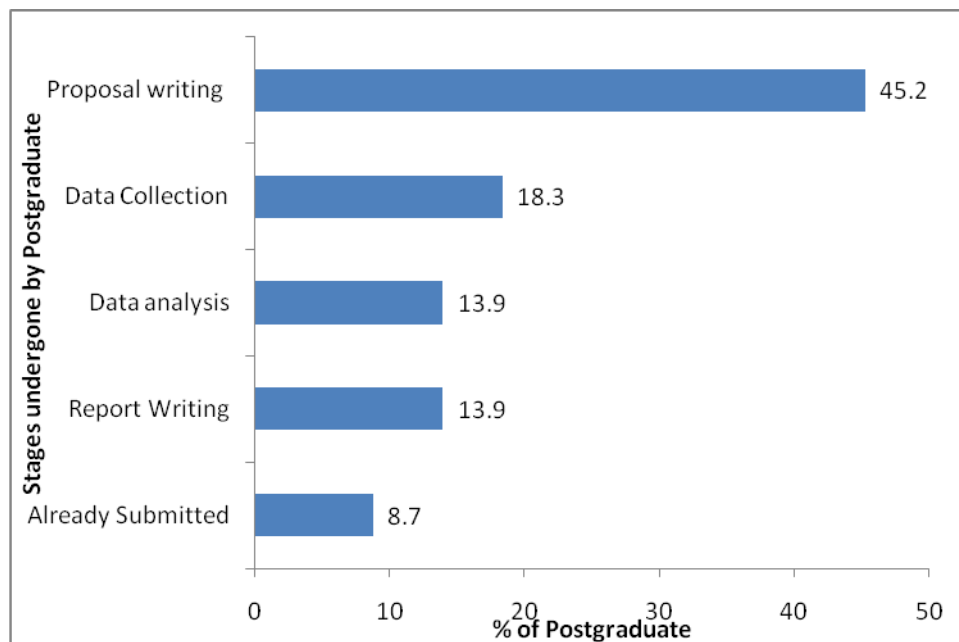


Figure 4.5: Stages undergone by postgraduate students while conducting research

Since different postgraduate students were in differing stages of conducting their research works, it was important to establish and determine their levels and stages in research activities. In accordance to Wilson's (2006) model on information seeking behaviour emphasized on the existing complexities within context for information seeking by explaining three important aspects of information seeking that is: First, why information seeking is more likely to occur in response to some needs compared to others; secondly, why some information sources get more use than others and finally why people's perceptions of their own efficacy influences their success in meeting informational goal?

The specific research information needs in relation to different research stages put emphasis on the information process as a feedback loop where information seeking is thought of as being iterative at various stages rather than being successive. As seen in figure 4.5 above, it is evident that majority of students 45.2% were in the stage of research proposal writing and 18.3% were in data collection stage and those who in data analysis stage were 13.9%. Those who were in the final stages of research report writing were found to be 13.9% and already submitted their theses comprised 8.7% respectively. It is apparent therefore, that postgraduate students have different but diverse research information needs based on the research stage that influences the ways they seek and use different information from a variety of sources.

4.4 DETERMINANTS OF STUDENTS' RESEARCH INFORMATION NEEDS (RIN)

To identify the postgraduate students' research information needs, response regarding determinants were captured and presented in the figure 4.6 below.

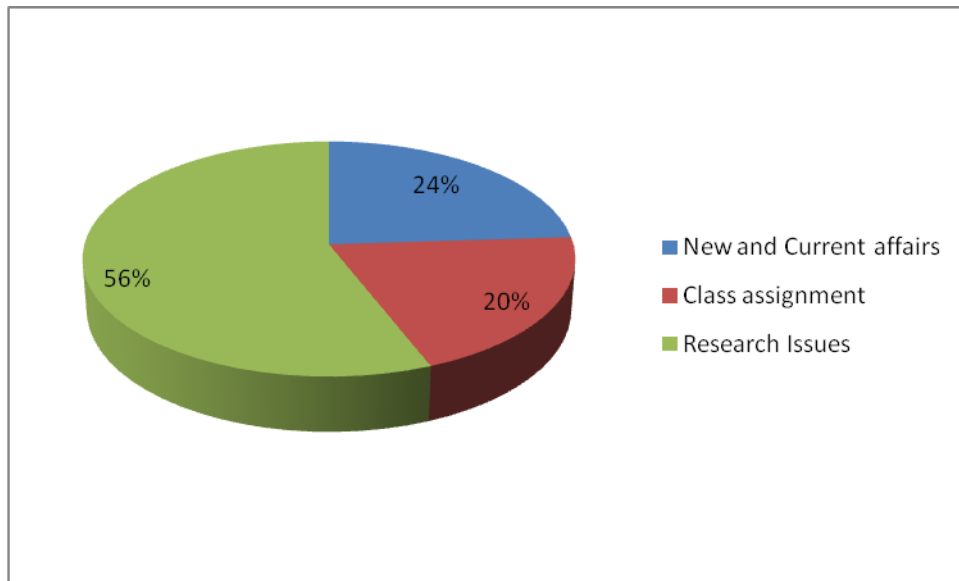


Figure 4.6: Postgraduate Students' determinants of information needs

The concept of research information seeking (RIS) depends upon the individual problem situation from which the need for information arises (Haruna& Mabawonku, 2001). In this outlook, research information need is a situation or task which depends on many factors but tend to change as the person goes from one stage of a task to the next stage. Research information need (RIN) is thus a gap in persons' knowledge when experienced as a question at the conscious level and gives rise to a search for an answer.

In order for the research information seeker to acquire the right information, she/he ought to know precisely what kind of information needed. Postgraduate students like other researchers therefore need to know information they need to bridge the identified gap. As seen in figure 4.6, it is apparent that (56%) of postgraduate students need information relating to research issues, (20%) need information regarding to class assignments and (24%) need information related to current affairs implying that students' information need is subjected to a specific problem at hand in a given time within the research stage.

Research information need (RIN) arises whenever individuals find themselves in a situation as they deem fit (Wilson, 2006) and affects individual researchers ways of obtaining answers to specific research questions in which a variety of determinants are tend to shape the behavior of individual researchers. Information seeking therefore depends upon the problem situation from which the need for information arises. It is a situation or task which depends on many factors that tend to change as the person goes from one stage of task to the next stage or level. As stated by Ikoja – Odongo and Ochola (2004), information need evolve from vague awareness of something missing and culminate in locating information to contribute the understanding of the meaning. These findings are similar to those of Anyaogu (2014) who revealed that information needs and seeking behavior of Lawyers in the United Kingdom (UK) are greatly influenced both by the nature and stage of the work they do.

4.4.1 Methods of Acquiring Needed Research Information

The study also intended to find out varying methods used by postgraduate students to seek for research information. Students' answers were captured and presented in figure 4.7.

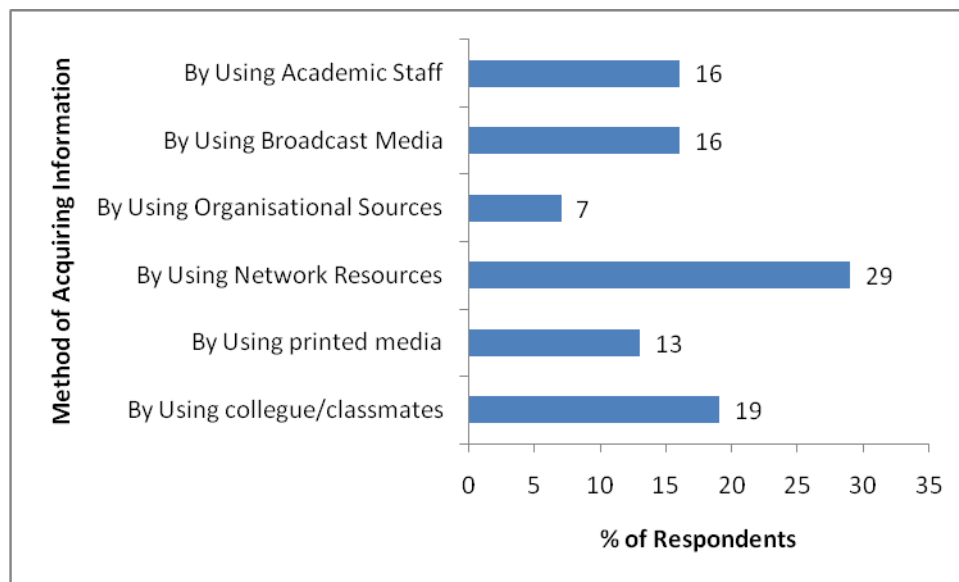


Figure 4.7: Methods of acquiring needed research information

The way researchers search for information to satisfy the research needs can vary greatly depending on the nature of the problem under study, individual technological knowledge, skills and individual trust on the information source. From figure 4.7, 29% of the respondents (postgraduate students) obtain their information by use of networked sources (whatsApp, internet, and Face book) and followed by 19% who acquire their research information by using

colleague/classmates. Others responded that 16% got information from broadcast media (radio and television), 16% acquire their needed information by consulting academic staffs, 13% acquire through printed media (newspapers, magazines, newsletters and books) and 7% acquire their information by using organizational sources e.g. public libraries and associations.

The above findings are in line with (Bronstein, 2010) who stated that the research information seeker often tends to seek information from convenient sources based on the principle of least effort (PLE) in terms of; perceived ease of use and accessibility and use more frequently than those that are more difficult to use. That is the likelihood of using a research information source depends also on quality of the information and the amount of effort and time needed to contact the source. While some students commented that; ‘We like to acquire information from our classmates because it is easy to understand them than our lecturers’, others claimed that ‘They like to acquire information from networked sources as they are more convenient for use’. Others acknowledged that, ‘they like to acquire information from academic staff as they contain current information relating to class assignments, handout and lecture notes’.

Moreover, other students from School of Journalism and Mass Communication commented; ‘They prefer to acquire information from printed media and broadcasting media as it helps them to gain confidence when they supposed to

appear before the audience or collect information from the audience'. Although the findings from figure 4.7 indicates light variations of information seeking methods arising due to the nature of subjects, research environmental contexts, technological skills e.g. internet and other individual students' characteristics and friends.

4.4.2 Postgraduate Students' Self- evaluation on Research Information Seeking (RIS)

The study adopted a five point Likert scale ranging from 1 to 5 to establish determinants regarding the students' self- evaluation on (RIS). Responses were captured and presented in table 4.1.

Table 4.1: Students' RIS evaluation

RIS self-evaluation statements	Strongly Disagree (1)		Disagree (2)		Don't Know (3)		Agree (4)		Strongly Agree (5)	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
1. There is usually something that motivates an individual to seek and use information.	4	3	11	10	2	1	31	27	67	58
2. Information seeking and use is not constant and can be influenced by a number of key determinants.	6	5	9	8	0	0	29	25	72	62
3. Various factors can affect the information needs and seeking behavior of an individual.	0	0	3	2.6	2	1.7	23	20	87	76

Individual information seeking and use can be associated with a number of factors which might differ in perception among postgraduate students. Students were then given variables to base on to indicating their information seeking and needs. From

table 4.1, statement number one (1) revealed that majority of the students 58% strongly agreed to the statement that there is something that motivates an individual to seek and use information, 27% rated the statement as ‘agreed’ and a small proportion of 10% were on the opinion of ‘disagreed’; 3% were strongly disagreed and 1% did not know/or had no idea regarding the statement. As students commented on the first statement, it is apparent that postgraduate students’ RIS and use is motivated by the needs arising from the problem situation. Their responses are in line with those of Anomalous States of Knowledge (ASK) model which was initially developed by Belkin in 1980, that a researcher encounters first a problematic situation in some aspects and recognizes knowledge anomaly about the problem and what needs to be solved.

The second statement, stated that information need is not constant and can be influenced by a number of influencing factors or determinants was the second highly rated at 62% to strongly agree, 25% agreed, 8% disagree and 5% were strongly disagreed that information need is not constant and can be influenced by a number of variables. These responses imply that information seeking and use is not static but a dynamic process from the individual person’s mind which needs to be addressed, solved and filled. Since majority commented they strongly agreed with the statements, their information seeking and use is a process that moves from one stage to another level. Thus, their information seeking and use was mainly determined by the existing problem at a given point in time. While some students

commented to seek and use information for research issues, others seek and use research information for modern responsiveness and employment purposes.

Students' responses are similar to those from Nicholas (2000) which states that thoughts of individuals often vary from stage to stage with corresponding feelings and actions. As other research information seekers, post graduate students once they experience a knowledge gap and realize that they lack required knowledge, they normally show the feelings of uncertainty and apprehension. When they found themselves in such kind of situation, students start to identify the information to fill the gap. As they managed to acquire information they need that seems can solve and fill the identified gap, uncertainty will diminish and confidence increased.

Findings from statement number three (3) indicated that majority 76% of students strongly agreed with the statement that various factors can affect the information needs and seeking behavior of educational'. On the other hand, 20% agreed that information need of an individual should be understood in his/her own context. Minority of the respondents 2.6%, indicated that they disagree with the statement and only 1.7% responded they didn't know/or had no opinion. This implies that students' information needs and seeking are affected by various factors as majority of them were on the opinion of strongly agreeing with the statement.

These findings concure with those of Savolaine (2007) who indicated that information needs and seeking behavior of educational administrators was affected by a number variables such as their individual work contexts, administrative responsibilities and work experience along with source preferences. However, the previous study findings did not showe how the aquired information was used. Students' information needs and seeking behavior can be affected by various factors such as individual, socio- economic status of individual students and information sources can adversely affect their information needs, seeking and even the use of research findings.

These research findings are also in line with Wilsons (2006) model of information seeking behaviour which pointed out that there must be an attendant motive when a person experiences an information need. The need is a situation or task which depends on many factors and change as the person goes from one stage of the task to another stage. In other words, individual information need to fall into various categories such as need for new information, need to expand or clarify the information already obtained and need to confirm or validate the known information in which the goal of user information seeking activities is to find information that satisfy his/her information.

4.5 RESEARCH INFORMATION SOURCES (RISO) USED BY POSTGRADUATE STUDENTS

Postgraduate students use difference source to seek for research information. However, the likelihood of information source to be selected and used is determined by perceived accessibility, use and quality of the information contained by the source (Bronstein, 2010). In order to determine information source used by students, they were provided with two main sources of information and were asked to choose one based on their interest. They were further asked to indicate which sources they mostly use to seek for research information. This was done so as to determine students' preferences. The responses were captured and presented in figure 4.8.

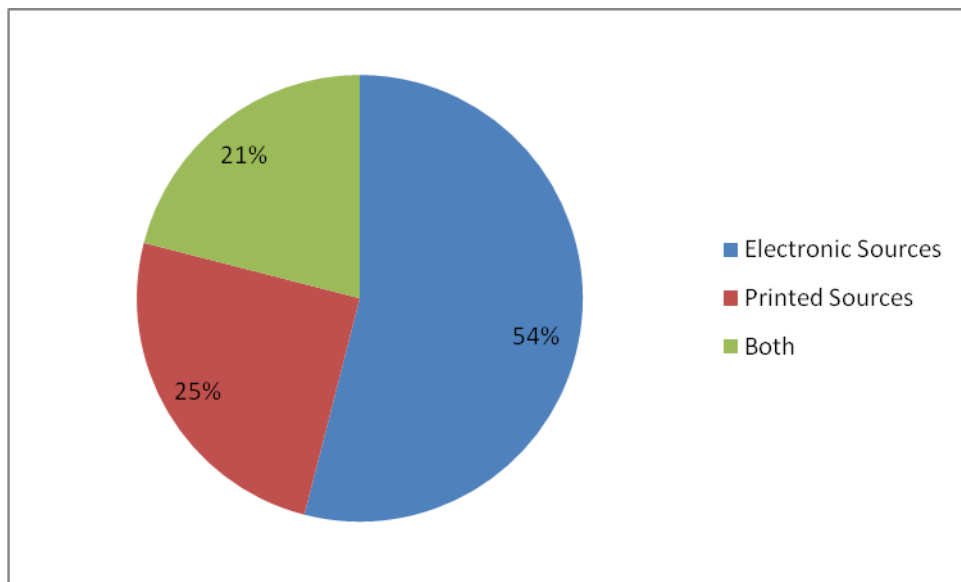


Figure 4.8: Research information sources used by postgraduate students

Source preference criteria represent an important aspect of the information seeking behavior of users. Although the reasons why users select a specific source have been investigated extensively, there is enough evidence to suggest that source preferences are situational. From figure 4.8, it can be seen that 54% admitted that they mostly prefer e-sources than printed sources. The popular use of e-resource by postgraduate students at the University of Dar es Salaam can be attributed to the fact that 56% of the respondents were aged 25. Thus they are part of the Internet generation – students who are characterized as being technology savvy, own electronic devices like tablets, uses ICT tools and have been using the Internet since a very early age. It can also be speculated that because of the difficulties in accessing printed sources, students tend to lose interest of using them. These findings confirm similar findings by Lee, Paik and Joo (2012) whose study revealed that online resources were more frequently selected than other types of sources. Furthermore, findings by George, Bright and Hulbert (2006) noted that the majority of students, amounting to 94%, prefer to use e-sources while seeking for information related to academics.

The assumption, however, was provided by the statements from some of the students in open ended questions. For example, one of the respondents stated that “it is easy to seek and use information available in e-source than printed source’. They further reported that printed sources had challenges of both accessibility and

cost. More comments were given that; “e resources are convenient as you can access information at any time, and anywhere at your convenience”. Another respondent said; ‘Printed sources take a long time to locate information due to poor arrangement of the materials from the shelves specifically in thesis collection’. To summarize, their findings can be put in this way ‘the information source preferences are determined by the accessibility of the source, cost effectiveness and the quality of its information which echoes the principle of least effort’ (Savolainen & Kari, 2004).

Similar findings are documented elsewhere in literature that electronic information resources are becoming more popular among researchers of the 21st century due to its convenient use than printed sources (Ka, 2005; Malekani, 2008; Law, 2009). The study findings also concur with Manda and Mukandara (2008) study who found that the use of e-resource by postgraduate students was high despite the challenges they were encountered. As the students have indicated to prefer to use mostly electronic sources than printed sources, more analysis need to be undertaken to examine their knowledge and skills regarding electronic resources use, though this was not in the scope of this study. However, these findings did not support the study of Oluwafemi et al., (2013), who found that the majority of the students, 71%, preferred print formats.

4.5.1 Use of Research Information Sources (RISO)

The researcher used descriptive statistics to analyze students' determinants of the frequent use of information sources. The frequencies were classified into four categories: (1) 1- 3 per week; (2) 4- 6 per week; (3) 7-10 per week and (4) >1 per week. Students'' findings were presented in the figure 4.9 below.

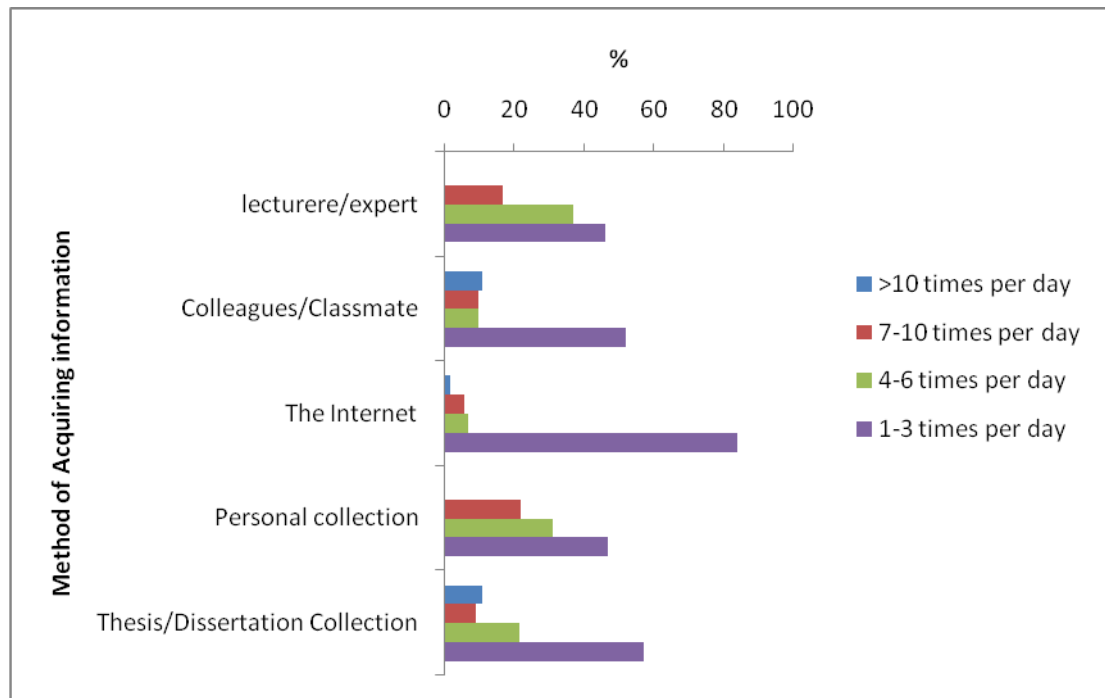


Figure 4.9: Frequent use of research information sources (RISO)

As students indicated determinants preference of their information source selection, the researcher also wanted to know how frequently they use the sources in the course of seeking for information. In this attribute, they were also asked to indicate

how often they use the information sources. Figure 4.9 above shows that the internet was the most highly ranked and used source of information by postgraduate students with the highest percentage of 84%, followed by thesis/dissertation collection with the percentage and frequency of 58%. Colleagues/classmates were shown to be the third most useful source of research information with 52%, followed by personal collection with 47%, and the least was lecturers/experts with 42%. From the analysis above, students have indicated to use all sources of information to search for research information. However, internet sources were found to override other sources. Students' strangulation use of information source is appropriate and acknowledgeable as it facilitates them to eliminate weaknesses from sources. Moreover, it will enable them to examine validity and reliability of the information contained in the sources.

These findings are similar with those of Nicholas (2000) who found that, "People always tend to use what is the easiest and what is closest to hand, and not what is actually best or most appropriate, they often take the path of least resistance providing they have a choice." This is in agreement with students comments from figure 4.5 above, who indicate that, they prefer using a source due to its convenience use and cost effectiveness. These findings support those of Hirsh, (2004) who found that research and development (R&D) researchers at Hewlett Packard Labs most frequently sought information from the Internet and other Web-based resources. Liu and Yang, (2004) also reported that distance learners chose

the Internet as their primary information source. Students' responses are further supported by Turner, Kabashi, Guthrie, Burket, and Turner (2011) who affirmed that the internet was one of the most frequently cited high-value choices for parents of pediatrics psychiatric patients. They were also substantiated by findings from Malekani et al., (2008) which stated, "Students often choose Internet and electronic resources than traditional resources due to ease of access, convenience, and fast communication channels".

The responses however contradict those of Lwehabura (2008) who comments that although students in Tanzanian Universities have access to, and use of various electronic information resources (EIRs) both for academic and non-academic work they still lack adequate knowledge and skills in some aspects, including searching and evaluation. This implies that student's preferred use of a certain source of information should be accompanied with knowledge and skills regarding how to use that source. Although the internet was scored slightly highest compared to other sources, at the University of Dar es Salaam (UDSM), students often use all available information sources to seek research information as a means to overcome associated problems with regard to the weakness of the research information source.

4.5.2 Perceived Value of Information Sources

This analysis aimed to find out from students about the way they value the information resources they use to seek information. Students' information sources value were examined using a scale of 1 (no value); 2 (moderate value) and 3 (high value). To undertake this investigation, the researcher added up the numbers of frequency of rating values from each information source. The responses of each rating value were computed by using frequency and percentage, as shown in figure 4.10.

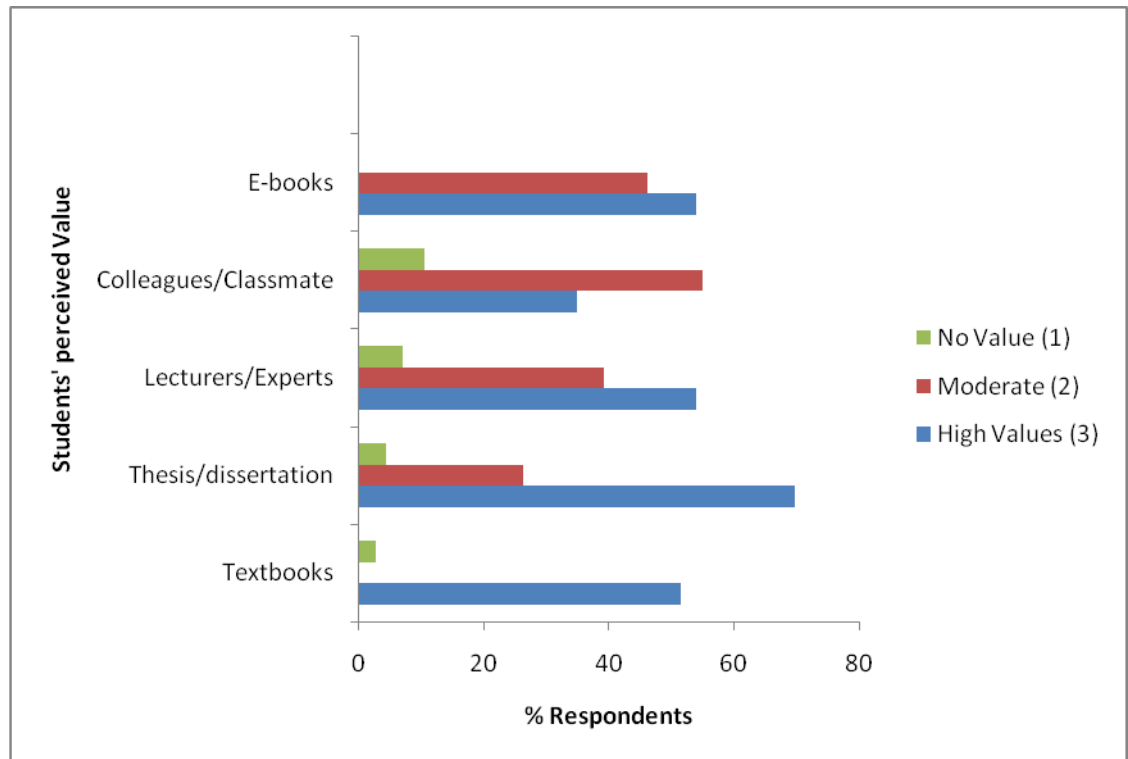


Figure 4.10: Frequent use of research information sources (RISO)

Postgraduate students' use of research information sources is evaluated by giving them due weights or different rating basing on the way they get satisfied with them. Findings from Figure 4.10, consideration with the percentage of "high values," it was found that students considered the most highly valued information resources for their studies to be the internet 81.7%, followed by Google scholars 78.3%, Thesis/Dissertation 69.6%, other sources 66.1%, e-books 53.6%, University Library 60.9%, Lecturers/Experts 53.9%, text books 51.3%, and Colleagues/classmates 34.7%. None of these five information resources were given "no values."

Students rated the moderate value information sources for their studies to be colleague/class mates 53.8%, followed by E- Books 46.1%, lecturers/experts 39.1%, text books 39.1%, University library 39.1%, other sources 31.3%, Thesis 26.1%, Google scholars 20%, and the internet 18.3%. Students also indicated the lowest valued information for their studies to be colleague/class-mates 10.5%, or "no value," followed by The internet, Lecturers/Experts 6.9%; other sources 2.6% other sources 2.6%, Thesis/Dissertation 4.3%; Google scholars 1.7% E- Books 0.00%, and University Library 0.0%. Students gave e-resources first priority than other sources. This could be due to numerous factors including; its accessibility or convenient use of the source, can be due to the reason that young aged students are often more competent in using e-resources than other information sources and could be due to their economic power which enables them to purchase more

sophisticated information sources, though this was not within the scope of this study.

Some of students commented that “We prefer to use e-resources of the sources as it is convenient: you can access it any day time and anywhere you will”. They further continued to provide comments that, ‘This source contains current information and you can have access to other information.’ These responses from the respondents is similar with those of Ola & Osage (2011), who indicated that, the more accessible information sources are, the more likely they are to be used. Their responses however, contradict with those of Majid & Ali (2002) on their studies about the use of information resources by computer engineering students in Singapore and found that, students relied heavily on printed sources of information and their use of electronic journals and databases was very low. Despite the fact that students have shown differences rating value to the information sources they use, the difference was not very high. This showed that students use and realize the advantage of all available sources with a different value which emanate from personal interest.

4.5.3 Information Sources Selection’ Criteria

The study intended to establish how postgraduate students responded on influencing determinants regarding the criteria used to select a research information source. Their comments were captured and analyzed in table 4.2.

Table 4.2: Factors influencing selection of information sources

Information Sources	Influence Determinants							
	Familiarity		Availability		Ease of use		Convenience	
	F	%	F	%	F	%	F	%
Lecturers/ experts	37	25.3	41	28.1	27	18.5	41	28.1
Thesis/Dissertation collection	23	8.8	69	26.4	79	30.2	90	34.5
The Internet	43	15	68	24	79	27	99	34
Instructor materials	57	50	17	15	14	12	27	23
Personal source	53	53	61	28	42	20	59	27

According to Echezona et al., (2011) the choice of an individual to seek for information depends on its perceived accessibility. Also Chaurasia and Chaurasia (2012) commented that resources may be available in the library and even identified bibliographically as relevant to one's subject of interest, but the user may not be able to lay hands on them. One may identify citations in indexes, but may not have access to the sources containing the relevant articles. The more accessible information sources are, the more likely they are to be used.

The findings show that 34% of the students responded that convenience of use was the most important ground that influenced students to select the internet sources other than other sources, followed by ease of use 27%, availability 24% and familiarity 15%. Students also indicated that availability and convenience, at 28.1%, were the highest determinant factors for them to use lecturers/experts

among the four variables to seek for information followed by familiarity 25.3% and ease of use 18.5%. For the Thesis/Dissertation collection source, it was found that convenience of use, at 34.4%, was a main determinant factor for its use, followed by ease of use at 30.2% availability at 26.4% and familiarity. In the same table students have indicated that familiarity 50% was the main factor for them to use Instructor materials source followed by convenience 23%, availability 15% and ease of use 12%. Students indicated availability 28% convenience as the most determinant factor for them to use it followed by 27% by convenience, familiarity 25% and ease of use 20%.

Thus, it is not surprising to see students indicating convenience of use as the main factor motivating them to select the information sources. This implies that students believed that convenience use is the key determining factor for the use of the source. Convenient use of the Internet was pointed out by students than other factors. Students' findings also agreed with those of Liu and Yang (2004) who found that distance learners' selection of the source and use were bound by the principle of least effort.

It was also found that student preferred information channels that required the least effort students have a lot of work to cover within a short period of time such as class assignment, test, report writing so they tend to they tend to prefer using information channels that required the least effort. This could be the major factor

motivating them to prefer electronic resources than other as they tend to believe that is less time consuming. Their choice agrees with Kerins, Madden, and Fulton (2004) who affirmed that student preferred information channels that required the least effort, such as search engines on the Internet. It further agrees with Perkins (2006) findings who studied forest service practitioners and found that ease of accessing information had greater importance to information seekers than the amount or quality of the information available. However, these findings differ with the this study as they did not indicate how the acquired information is going to be used.

Based on the above students' responses on the factor or criteria in preference, it is obvious that all factors indicated above can significantly influence students on selection of information source to be used. However, convenience and ease of use were found to be the strongest influencers leading to being seen as a key determining factor. Their above comments are similar with Turner and Turner (2011) who stated that the likelihood of a source being selected depends on the perceived accessibility and quality of the information from that source. This is why most researchers currently tend to choose easily available information sources, even when they are objectively of low quality, and further, will tend to be satisfied with whatever can be found easily in preference to pursuing higher-quality sources whose use would require a greater expenditure of effort.

4.5.4 Effectiveness of Information Sources on RIS and Usage

The researcher accessed the effectiveness of research information seeking and usage using a determinants' assessment criteria namely: 1 - 'Very effective', 2 - 'Effective', 3 - 'Less effective' and 4 - 'Not effective'. The results were captured and presented in table 4.3 below.

Table 4.3: Effectiveness of information sources on RIS and Usage

Information Sources	VERY EFFECTIVE		EFFECTIVE		LESS EFFECTIVE		NOT EFFECTIVE	
	F	%	F	%	F	%	F	%
Personal collection	97	62.6	53	34.2	5	3.2	0	0
Google scholars	79	51	61	39.4	15	1.9	0	0
Thesis/Dissertation collection	30	22	55	41	50	37	0	0
The Internet	97	53.2	78	43	7	3.8	0	0
Colleagues/ classmates	60	52.2	43	37.4	12	10	0	0
Lecturers/ experts	53	46.1	42	36.5	20	17.4	0	0

Among the factors motivating users to develop interest in using any source is the effectiveness of the sources, students were asked to give out comment regarding the effectiveness of the sources they have indicated to use while seeking for research information as indicated in table 4.3. Users' information seeking behavior has changed to less reliance on physical libraries; more dependence on online resources; considerations on convenience and instant accessibility; and that many users get satisfied with what is easily available even at the cost of quality (Chandel

& Saikia, 2012). As noted from table 4.3 above, 62% of the respondents indicated that web based source was very effective for them to use while seeking research information; 34.2% of the respondents indicated that web based source was effective; 3.2% indicated that web search was less effect while none of them have indicated that web source is not effective.

It was further noted that 53.2% of the students have shown that internet sources were Effective, 43% indicated that the internet was effective sources; 3.8% specified that the internet was less effective while none of students have indicated that the internet source was not effective. The analysis from the same table shows that, 60% of students indicated that colleague/classmates source was very effective, 37.4% were on the opinion that colleague/classmates source was effective source, 10% commented that colleague/classmates source was less effective. None of the students has perceived these sources as not effective.

From the findings above, it was noted that students responded that electronic resources were more effective for them to use while seeking for research information. The present age is an era of information and knowledge revolution. The increase in availability of information on the web has affected information seeking behaviour since it offers several information in large varieties of formats from different locations that are available in a single place (Popoola, 2006). In the modern society, the types of information and the media which present them have

become many and offering users diverse choices from a wide spectrum of vast selections.

E-resources are invaluable research tools which complement printed resources. They provide access to information that might be restricted to the users because of geographical locations or finances factors. As captured from one student commenting that “E-resources provide access to current information as they are often updated frequently”. Others felt that using information available from the internet is comfortable than from the printed sources. Another claimed that; “through their various search techniques, e-resources provide extensive links to explore additional resources or related content in comparison with printed source”. Electronic resources have increased the global dissemination of information. This is due to the fact that electronic sources such as the internet provide access to unlimited sources of information and search engines are continuously being advanced to provide efficient ways to help users to find what they want. The internet eases and increases access to a large amount of data, saves time and money, and provides an opportunity to consult several experts with a single request and more independence from specific times and places for information seeking.

Today we are living in the age of information which is a dynamic and unending resource which affects all disciplines and walks of life. Due to the advantages and benefits of E-resources, the selection of a majority of students who have indicated

to use electronic resources as their main sources of information is quite correct and agreeable in an academic arena particularly (Chaurasia and Chaurasia, 2012). Moreover, a similar trend was observed by Okello-Obura and Ikoja-Odongo (2010) in Uganda where students greatly valued electronic information resources although many of them felt that they lack adequate skills to effectively use these resources. Students' preferences also support the findings of the study conducted by Sife (2013) at Sokoine University of Agriculture-Tanzania and found that most of the students relied on Web resources for their research, class assignments, and communications with the positive attitudes towards these resources.

Regarding to this disparity of students' preference concerning sources utilization it is apparently that electronic sources are the major sources preferred by postgraduate students while seeking for research information. Their findings are in line with those of Okiki et al., (2011), who recognized that most scholars highly valued electronic journal access and preferred electronic sources over printed sources. However, a majority of the students have also indicated to prefer the use electronic sources while seeking for research information though some have reported using both electronic and printed sources implying that they use different information sources while seeking for research information to complement the weakness of different selected sources. Through open ended questions, while some of students commented; "We prefer using electronic resources due to their easy and quick access as well as the convenience of downloading and printing" others stated

that “One can access information anywhere and anytime without visiting the library for access and use”.

Dadzie (2005) and Ani (2012) however argued that, electronic resources are invaluable research tools with the main problem related with traditional information environment which is practically dominated by printed sources when considering availability and accessibility of information in least developed countries (LCDs). In modernized societies with computerized library services, CD-ROM/online databases, the Internet, Intranet/campus networks and digital libraries, there is relative ease of accessibility and utilization of information by academic staff in research than obtainable in the traditional information environment. Thus, the paradigm shift from conventional information environment to electronic information environment in the research process in African Universities, need to be supported.

The emergence of electronic information environment has reduced the barriers of information access usually associated with distance and time, both within and outside the University environment (Manda, 2005). Hence, access to information is more cost effective than it was in the traditional information environment. Among the advantages includes access to information unrestricted to the user due to geographical location or finances and provision of extensive links to additional resources or related content. It also has an added advantages compared over printed

ones such as; speed, ease of use, ability to search multiple files at the same time as well as aptitude to access documents from outside the library. However, knowledge of computers and retrieval techniques is needed to search these resources effectively (Manda and Mukandara, 2008).

Electronic information has gradually become a major resource used by researchers while seeking information worldwide since it has tremendously transformed information handling and management in academic environment (Sife, 2013). Through the use of electronic resources, researchers and students; now have access to global information resources, particularly the Internet for their scholarly intercourse (Ellis & Oldman, 2005). In this view, students' preference will enable them to be in a better position of accessing reliable materials as majority of scholars prefer to publish their works through e-resources.

Some of the students indicated that: "It is very tedious sometimes to access materials from printed sources due to poor arrangement in the collection and some rules and restrictions from librarians especially in research collection which hinder us from utilizing the available information. Other commented that "printed sources particularly in the thesis collection are restricted not flexible in a sense that it requires us to be in the place where the material such as books journal are kept". This implies that librarians are supposed to make a review of their library material arrangement to attract user to develop interest of using available printed material.

The use of information and communication technologies (ICTs) has become a fundamental part of today's educational system due to the fact that, many educational functions such as research and scholarship, teaching and learning increasingly become dependent upon ICTs. Given that information and communication are central to any educational system, the use of electronic sources such as internet in education increases collaboration among students and academicians as well as enhancing information sharing.

Some comments were also given out by those who indicated preference to the use of printed sources. This was noted through open ended question. Some commented that “We prefer to seek information from printed sources than electronic sources because we do not have enough skills and knowledge which can support us to access information from electronic resources” .Other commented that “ We still believe that printed sources contain valid and reliable information”. The comments findings are similar to those of Kelly (2009) who affirmed that library resources and in particular its electronic resources are not effectively used by postgraduate students because the users perceive them as not being straightforward. Also the study established that there is a low level of skills and low level of electronic resource experience in the use of ICT among postgraduate students. In this view, insufficient of skills and knowledge about how to use electronic sources can deny graduate students the rights of accessing and use information worldwide for knowledge sharing.

Based on these views, information literacy programs should be integrated into the curricular in order to optimize the use of E-resources by the librarians to play a big role to address contextual and technical issues such as access to facilities, awareness of available resources, search skills, and access restrictions to students such as passwords in order to promote usage levels. However, this was not part of my study as my study's intention was to examine determinants of students research information seeking and use. Through open ended questions, the researcher also managed to find out views from students who have indicated to use both sources. They commented that; "It is worthy to use both sources because some time you may find useful materials which would not be possible to get them by using only one source while seeking for research information".

Other students indicated that "sometime there is useful information such as thesis/dissertation report of graduates which are not yet published so you have to visit research collection to access them". More comments from them student came out that; "The information contained in printed sources is the compelling information because it is not easy to be distorted like those who are in the electronic system". One student further argued, "They are trustworthy as they have been edited and examined by qualified scholars for further clarification and accuracy". Students' decisions on information sources selection are upright. However, graduate students need to be advised and motivated to use both sources while seeking for research information

as the matter of check and balance. Although there is no any information source without its own weaknesses, it is more advantageous to use both sources while seeking for research information to complement the limitations from different sources.

4.5.5 Students' Satisfaction with Information Sources Use

It was found essential to investigate the extent in which postgraduate students become satisfied by research information sources (RISO) they used. The researcher thus measured students' information sources satisfactions using 5-point Likert scale ranging from 1 to 5, with 1 being '*strongly dissatisfied*', 2 represents '*dissatisfied*', 3 equals to '*neutral*', 4 is '*satisfied*', and 5 means '*strongly satisfied*'. The researcher further analyzed students' satisfaction by computing the means cores as shown in Table 4.4.

Table 4.4: Students' Satisfaction with Information Sources

Information sources	Strongly Satisfied		Satisfied		Neutral		Disatisfied		Strongly Disatisfied	
	F	%	F	%	F	%	F	%	F	%
Lecturers/ experts	51	29.8	62	36.2	58	34	0	0	0	0
Thesis/Dissertation collection	48	28.7	50	30	69	41.3	0	0	0	0
Colleagues/ classmates	45	50.4	39	32.8	45	50.4	0	0	0	0
The Internet	99	39.0	76	31	74	30.1	0	0	0	0

From table 4.4 above, it is depicted that students were strongly satisfied with the internet use 39.0%, than other sources. 31.5% of the students indicate to be satisfied. 27.2% indicate to be neutral while none of them were of the opinion of strongly dissatisfied or dissatisfied. 36.2% of students indicated to be satisfied while using lecturers/experts source, 34% indicated to neutral 29.8%, were strongly satisfied while none of them were of the opinion of strongly dissatisfied or dissatisfied. Regarding utilization of thesis/Dissertation students 41.3 indicate to be neutral, 30, were satisfied, 28.7% were strongly satisfied and none indicted to be strongly dissatisfied or dissatisfied by the source. 58% of students indicated to be strongly satisfied or satisfied to use colleague or classmates source to seek for research information, 50.4% have indicated that they were neutral while 0% strongly disagreed or disagreed.

As seen in table 4.4, to a great extent, students were satisfied with all sources they were using to seek research information. Many students rely very much on the internet than other sources to seek and use for information due to the fact that seeking and use of information is convenience than other source in terms of time, geographical location when compared to other sources. This was observed through open ended question when two students commented; “Internet source is convenient as you can access information at any time anywhere” “Other remarked that, through the internet you can access information from various authors in a short period of time. “Students’ selection are comparable with those of Hansen, (2002)

who pointed out that familiarity and easy use of various types of information sources are the most key determinants influence to the seeker to select the sources. In this view students need to acquire enough search techniques such as simple search, phrase searching, Boolean operators and word truncation to support them to acquire the right information. This is probably because the internet is overloaded with information.

4.6 USE OF POSTGRADUATE STUDENTS' RESEARCH FINDINGS

The study aimed to find out whether students' research outputs are often available for use. This was found necessary as if the any research findings are not disseminated it is clear that knowledge gap will keep on growing among researchers. To understand whether students' findings get into use, students were asked to state whether they have an intention to disseminate their research findings or copy of thesis to targeted researched institutions at the end of their postgraduate degree studies. The responses were presented in figure 4.11.

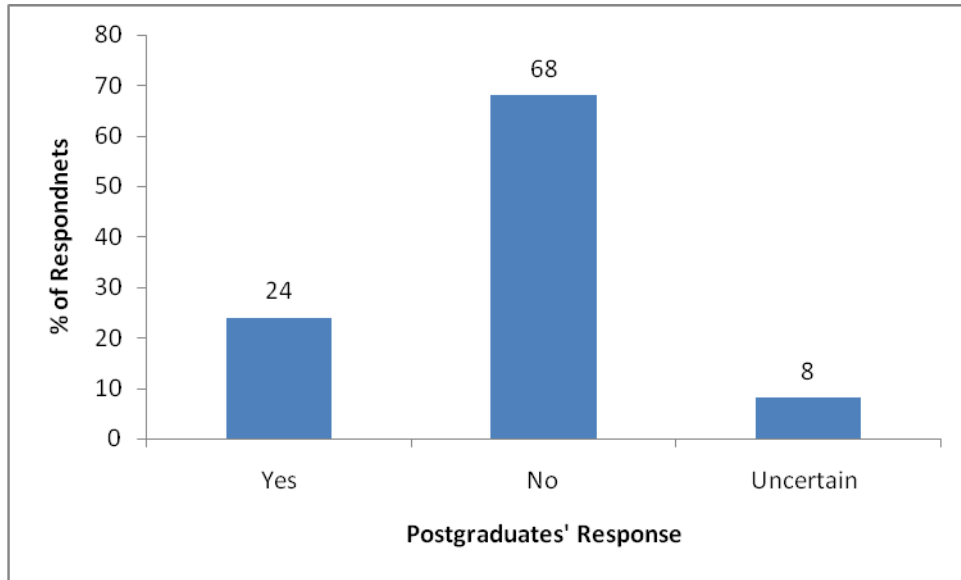


Figure 4.11: Postgraduate students' intention to disseminate research findings

In economic sense, for the product or service to be consumed, it must first be available and accessible to the targeted clients. As stated by Christian (2008), carrying out an investigation or research study whose yields remains exclusively within the minds of an investigator or researcher is meaningless. In this regard, postgraduate students' research findings have to be disseminated to allow knowledge sharing at large. The results revealed that about three quarters, 68%, of the students would not disseminate their research findings at the end of their program, where about a quarter or 28% indicated to have an intention of disseminating their findings to the researched institution and 8% were uncertain. Essentially, the purpose of undertaking a research activity is to be of use as means to fill the identified gaps, to change current unfavorable practices, or to confirm and

validate it. It is thus not worth to do a research in which their findings will not be used.

Since the majority of the students, 68%, commented that they will not disseminate their research finding to the researched institutions, it is clear that these findings will be used solely to fulfill the pre-conditions of their enrolled degree programs but exclusively remain in their minds as researchers and their immediate research supervisors. Their discussion could be associated with a number of factors such as lack of awareness regarding important of information dissemination, or it could be due to cost associated with publication of lack publication knowledge skills which affect them from disseminating their research information. Through open ended questionnaires some students argued, “In fact we do not conduct our research for the purpose of publication but just for the matter of accomplishing our Masters’ course requirements”. Others lamented; ‘We don’t see the reason to disseminate the research findings as it was not the main intention of doing research, but a partial fulfillment of their degree requirements” Other students expressed their grievances; “They were not aware that they are required to disseminate their research findings.” Moreover, other comments were given out by students that “dissemination was not their interest rather than accomplishing their postgraduate degrees ‘studies”.

Similarly, other claimed that, “It is too tedious to write a thesis as it needs writing skills, specific guidance and readiness to do so.” To summarize the given

comments, it can be deduced that students lack knowledge and report writing skills to support themselves on writing their theses and lack motivation and awareness regarding advantages of knowledge sharing. The research report and findings done by the postgraduate students need to be available for use as they comprise a number of researchers with different backgrounds and experiences, and can add knowledge to the existing literature to be shared by different research stakeholders. It is therefore imperative for responsible authorities to work out on ways of ensuring effective dissemination of research findings from this category of researchers.

The use of the postgraduate research findings is an essential element for national development, though their findings are not effectively disseminated with less accessibility for utilization. As a result a large number of postgraduate students' research findings are often misplaced, rarely made known to public beyond the research group themselves i.e. the students as researchers, immediate research supervisors and references for other student in the coming years. In Tanzania, like in many other developing countries, postgraduate research findings have not been put in place to be easily accessed and used by the targeted audiences due to a variety of factors which have not yet been well addressed.

4.6.1 Perceived Importance of Students' Research Findings Utilization

Further analysis was undertaken to establish the way students value the importance and considerable significant use of research findings. In this outlook, students were

asked to indicate the magnitude of the students regarding to the essential usage of their research findings by the researched group. To capture students' views concerning the question, the researcher issued them various statements to base on, while rating their satisfaction. The researcher inspected their agreements, in terms of a 5-point Likert-type scale ranging from 1 to 5 i.e. Strongly agree, Agree, Neutral, Disagree and Strongly disagreed. The researcher analyzed statements responded by students and presented in table 4.5.

Table 4.5: Perceived importance of usage of students' research findings

Perceived importance on usage of students' research findings	Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree	
	F	%	F	%	F	%	F	%	F	%
1. Students' research findings are very important to be used as it is alleviate an identified knowledge gap in the policy process making.	70	34.8	79	39.3	37	18.4	15	7.5	0	0
2. Students' research findings are essential to be used as it acts as the guide lines for policymakers in a course of formulating new polices.	62	36.2	58	34	51	29.8	0	0	0	0
3. Students' research findings are very significant to be used as it brings up the solution of the identified problem.	48	28.7	50	30	69	41.3	0	0	0	0
4. Postgraduate students' research findings are of less important since it has no any contribution in community development.	0	0	0	0	74	30	76	31	96	39

As noted from table 4.5, statement number one about 34.8% of students were strongly agreed that students' research findings are very important to be used as it help on alleviating the identified knowledge gap in the policy process making; 39.3% students agreed that research findings are very important to be used as it fill an identified knowledge gap in the policy process making; 18.4% were neutral; 7.5% disagreed while none of them were on the side of strongly disagreed. Concerning statement number two, 36.2% of students were strongly agreed to the statement; 34 % agreed to the statement; 29.8% were neutral while none of them were on the opinion of strongly to disagreed or disagreed regarding the statement.

On the statement stating that students' research output is very important to be used as it brings up the solution of the identified problem, 28.7% of the respondents expressed that they strongly agreed; 30% agreed; 41.3% were neutral to the statement and none of them indicated to be strongly disagreed or disagreed regarding the statement. In the same table 4.11 above, none of the students were of the opinion of strongly agreed or agreed to the statement that students' research output is less important since it has no any contribution in community development; 30% indicated that they were neutral; 31% strongly disagreed that their research output is less important since it has no significant contributions to community development; 39% disagreed that students' research output is less

important for the same reasons that they have insignificant contribution to national development.

From the above analysis, it is obvious that although students understand the importance of doing research and its contribution to developments, they have negative perceptions on the ways in which their research findings will be utilized. Despite the fact that postgraduate students are aware and they do admit that their research work is important for community developments, they lack motivation and specific guidelines on how to disseminate their research findings for usage.

It was also observed that, majority of the students were expecting or have already developed research topic for their research. Most of their topics were about issues relating to community problems and government functions. This was noted as majority of them commented that they will do community researches. In this outlooks if their findings get a chance of being disseminated it will help to reduces the existing gap within the country at large rather than waiting results of researches conducted by other research scholars.

4.6.2 Research findings' Submission Policy

The researcher further wanted to learn more about issue pertaining postgraduate students 'research findings use apart from what has already been stated by the

students on their previous answers. Students were asked to indicate whether they were given any policy which requests them to submit a copy of the research findings to the researched institution in the end of their study. Students were asked to provide their answers in a form of 'YES', 'NO' or 'UNCERTAIN'. Postgraduate students' responses were captured, presented and analyze in figure 4.12.

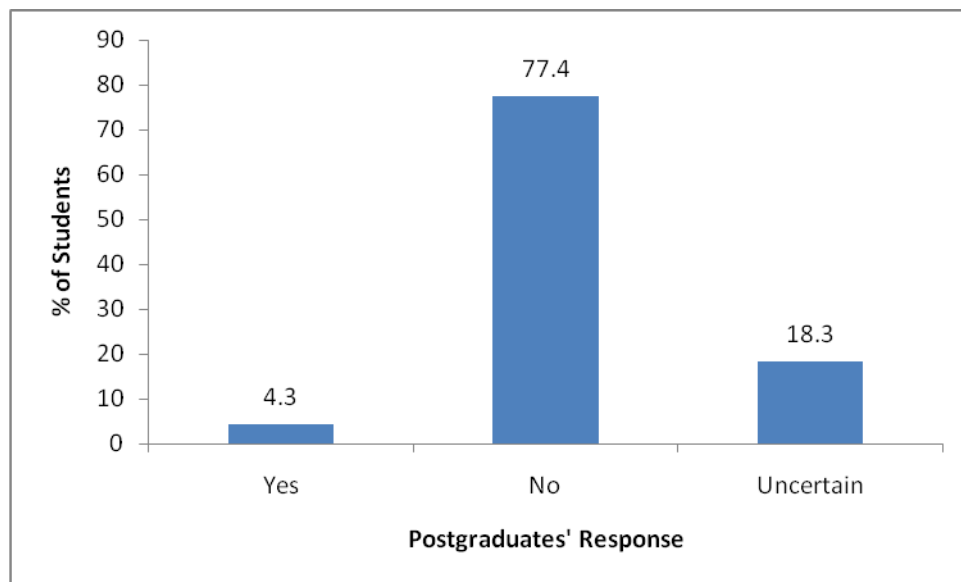


Figure 4.12: Research findings submission policy to researched institutions

From figure 4.12, it can be seen that majority of students, 77.4%, responded with 'NO', that there was no a specific policy that requires students to submit research findings or copy of thesis to the researched institutions at the end of their degree programs. On the other hand, minority of the postgraduate students, 4.3% had positive expression 'YES' and 18.3% were 'Uncertain' implying that there is no policy which guides students to submit a copy of their research findings to the

researched institutions. From the analysis, it is essential to understand that the majority of postgraduate students 'research findings' sharing is limited due partly to lack of policy and guidelines from the Universities which require them to submit a copy of their research finding or theses to researched institutions and other targeted research addressees.

Policies act as the general understanding which provides guidance in decision making to any course of action, serve as specific guides for peoples, philosophies, values and drive principles upon which people are expected to act, maintain, follow and adhere. Specific policy is essential in facilitating a follow-up of any feedback of a certain performed action in life activities. As further noted from some of the students who responded that 'in fact, we have not received any policy which requires us to submit a copy of our report to the area where we intend to do our research'. Other commented that; 'they are aware that, after data collection and report writing they are supposed to submit a copy of their report to the University as per Departmental requirements which is must and not an option'. So it is crucial to set a policy which guide on how to disseminate the students' research findings for knowledge sharing.

4.6.3 Challenges Facing Postgraduate Research Findings Utilization

Postgraduate students (respondents) were asked to indicate whether they faced challenges in relation to their research findings dissemination for use in practice. The researcher asked the students to provide answers in dichotomous form whether: 'YES', 'NO' or 'HAVE NO ANSWER' regarding the challenges faced. Answers were captured and presented in figure 4.13.

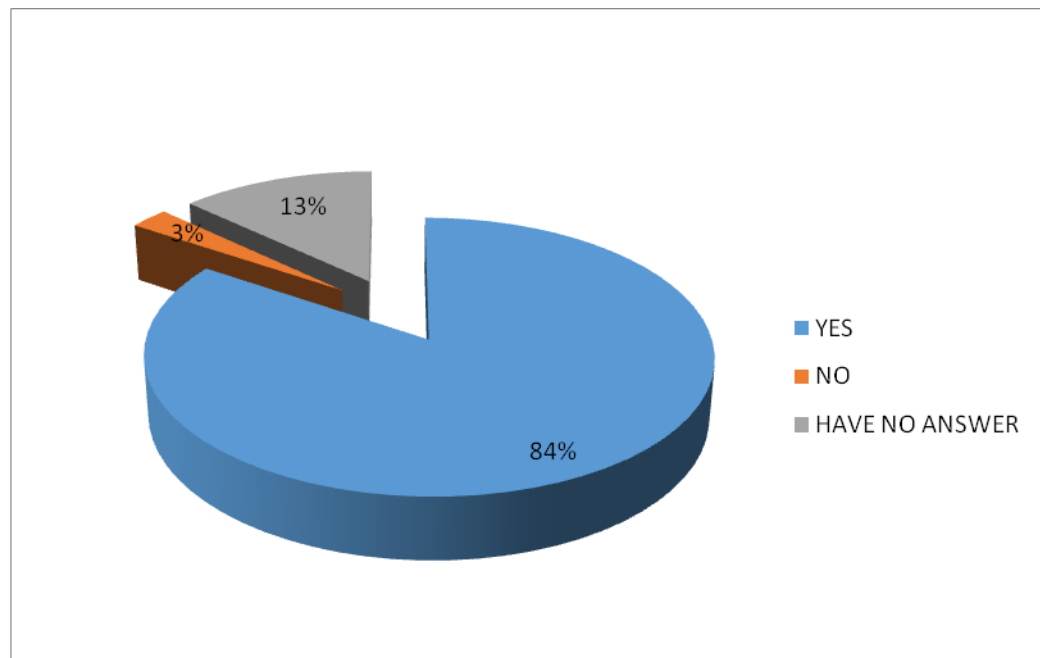


Figure 4.13: Postgraduate students' research findings utilization challenges.

Regardless of the massive amplify in the amount of research being generated from various scholars of different disciplines, the integration of research findings into practice remains problematic (Parkin & Bullocks, 2005) and the actual utilisation

of research is still meagre (Rassool, 2005). Numerous researchers have identified several barriers for research findings utilization to include; lack of awareness of relevant research findings, lack of knowledge of the research process and the skills to access, inadequate support from researched institution and lack of autonomy and authority to change practices (Sitiza, 2001).

Therefore the existence of relevant research finding is not sufficient to solve the problems within the community, but there should be a process of transferring the acquired knowledge to the need ones for effective use. There is substantial evidence from previous studies that there existed numeral factors which can hinder postgraduate students' thesis/dissertation to findings' sharing which need to be well signified. It was noted from the analysis in figure 4.10 that more than three quarters of the respondents 84.4% responded 'YES' that they face numeral challenges in their attempt to put their research into practical use. However, few of them were about 13% responded 'NO' that is they do not face barrier and 3% responded they 'HAVE NO ANSWER'. From the responses of the postgraduate as analyzed in figure 4.13, provide proof that although students wish to disseminate their findings for use in practice, they fail to do so due to a number of challenges beyond their abilities. Some contextual barriers were further analyzed in section 4.6.4.

4.6.4 Contextual Barriers to Postgraduate Research Findings' Usage

To assess contextual barriers students perceive as the major reasons that hold back research findings use. The researcher used a 5-point Likert scale ranging were used to collect information as presented in table 4.6.

Table 4.6: Perceived contextual barriers to students' research findings use

Perceived contextual barriers	Strongly Agree		Agree		Uncertain		Disagree		Strongly Disagree	
	F	%	F	%	F	%	F	%	F	%
1. Inadequate resources such as time and money.	97	84.3	13	11.3	5	4.3	0	0	0	0
2. Students lack awareness concerning importance of research findings' dissemination and lack stakeholders' engagement are among of the barriers of research findings utilization	11	9.6	10	8.7	15	13	79	67	0	0
3. There exists no policy requires students to submit research findings to the researched institutions.	80	78	25	21.7	10	9	0	0	0	0
4. Lack of recognition of students' research outputs by policymakersand researched institutions.	54	47	36	31	25	22	0	0	0	0

Effective recital in research activity can significantly be influenced by contextual environment in which the research work is carried out. Table 4.6 shows that inadequate resources such as time and money are among the perceived barriers to research findings usage since it received the highest percentage of 84.3%, followed

by lack of clear and specific policy which requires students to submit their research findings or a copy of their report with 78%. Other perceived barriers include lack of recognition of students' research findings by policymakers or researched organizations with 47%, lack of awareness concerning the importance of dissemination of research findings by postgraduate students with 9%.

As seen in table 4.6, it is evident that postgraduate students apprehend the importance of their research findings' utilization. It is therefore essential for responsible parties to ensure that these perceived barriers for postgraduate students' research findings need to be addressed and solved since it involves investment of physical strengths, mental efforts and other resources in terms of time and money to conduct such a scientific inquiry or research works and can be beneficial for organizational development and administrative decision making. As found from some open ended questions, the developed new knowledge from postgraduate students' research remains mainly into students' minds and the University's library thesis collection, as a result, might not be effectively utilized due to the fact that both policymakers and researched institutions often embrace the old ways of doing things and resist to abide with new knowledge and its potential benefits. As posited by one student, "Even if students submit copies of research reports to researched organizations, they will not be given due weights because the implementers can deliberately refuse to use the findings knowing that they may end up losing their job or investigations may be launched against them from impact of those findings".

The above analysis further revealed that often postgraduates' research findings are perceived to have little contribution to policy formulation and development, policymakers do not fully appreciate the potential contribution of graduate students' research findings and have nothing to contribute towards further developments. Among major identified challenges in practice concern the research-practice gap, which is instigated by the failure to disseminate new knowledge from research and transform it into real world practices with no observable strategic alternatives to overcome barriers and challenges arising from ineffective dissemination to right audiences, inability to translate into practice or may not be disseminated at all.

As stated by Kirkland, Mouton and Coates, (2010), getting research into use is a critical factor in achieving outcomes that improve the quality of life of people particularly in Africa. Effective research findings communication is therefore a vital to undertake and needs integrated approach to all key stakeholders to amplify the communication process for research findings. Furthermore, there is insignificant institutional support for students' research findings to reach their key targeted audiences. As commented by some students, "Insufficient resources for dissemination activities is among the major barriers, but no body cares about". Others argued, "We do not think that we will have enough funds to consider dissemination research results beyond the University, but if the University found

the value of of the process, it can do it in its own costs”. Others had the opinion that, their research findings are not being utilized because both the government and the researched institutions do not value their findings the way they value the findings of other sponsoring agents.

The above responses are in agreements with those of Dulle (2010) who stated that the government of Tanzania does not provide funds to support postgraduate students to carry out their research studies and disseminate the findings to potential users. To enable accessibility to students’ thesis findings, research knowledge together with reasonable time and funds are the most key determinants for research knowledge to be shared. In other words, knowledge often has tendency to stay where it is generated unless it is effectively disseminated. Since postgraduate students may not have adequate resources, in terms of money and time, to dissemination their research findings, no matter how valuable for development, these reports are meaningless if not effectively dissemination practical use.

4.6.5 Postgraduate Students Motivation on Research Findings Usage

The study examined the students research usage motivation by asking the respondents to evaluate the statements, using a 5-point Likert-Scale ranging from 1 to 5, with 1 = 'Strongly Disagree'; 2 = 'Disagree'; 3 = 'Uncertain'; 4 = 'Agree' and 5 = 'Strongly Agree'. Responses were captured and presented in table 4.7.

Table 4.7: Students' motivation on research findings usage

Students research findings usage' motivation	SD (1)		D (2)		UN (3)		A (4)		SA (5)	
	F	%	F	%	F	%	F	%	F	%
1. Knowledge and skills are the key motivations and criteria on implementation of research finding by postgraduate students.	87	44.4	51	26	11	5.6	31	15.8	47	24
2. The research work for postgraduate students is centered on information with the aim of creating, using and disseminating that information to other users.	0	0	0	0	9	7	51	39	72	54
3. Graduate students need to acquire financial support from the government to enable them to put their research outputs into practice.	4	3	13	10	0	0	63	46	57	41
4. For research utilization outcome to be realized there should be a clear process to transfer research-based knowledge into practice.	11	11	23	17	0	0	33	24.4	68	50.4
5. The main purpose of carrying out research is to fulfill their degree requirements, that there is no need for research findings to be disseminated for use.	56	47.5	54	45	0	0	5	4.2	3	2.5
6. Lack of clear research policy and guidelines affects usage of postgraduate students' research output for development.	3	2	7	4.5	0	0	65	4.2	79	51.3

An individual's driving motivation towards a certain task is an essential factor to be taken into consideration. The researcher therefore assessed the key motivators behind postgraduate students in regard to their research findings' usage. As seen in table 4.7, while 54% of postgraduate strongly agreed with the second statement that 'The research work for postgraduate students is centered on information with the aim of creating, using and disseminating that information to other users', 39%

strongly agreed, 7% were uncertain and or had no opinion and no respondent disagreed or strongly disagreed with the statement. Although the above analysis and responses denote that students often realize the importance of their research findings for developments, they mainly conduct it in order to fulfill their degree requirements. As responded by some students, “We do agree that our research findings might be useful in facilitating policymakers to have grounds to base on while formulating policies for decision making in administrative matters”.

The sixth statement that ‘*Lack of clear research policy and guidelines affects usage of postgraduate students’ research output for developments*’ was the second highest ranked, in that 53.3%, strongly agreed with the statement; 42.2%, agreed and no respondent was uncertain or had no opinion and 4.5% and 2% disagreed and strongly disagreed respectively. Regarding the third statement that ‘*Postgraduate students need to acquire financial support from the government to enable them to put their research outputs into practice*’; 41% strongly agreed; 46%, agreed, 10% disagreed, 3% strongly disagreed and none was uncertain or had no opinion. For effective utilization of postgraduate students’ research findings, both institutional and government support in terms of research infrastructural facilities and financial sponsorship are the essential requirements. Although there does not exist higher education sponsorship, particularly postgraduate degree studies in Tanzania, the policymakers need to review these policies to enhance motivation for

effective dissemination of postgraduate students' research findings for further developments.

In regard to the statement that '*For research utilization outcomes to be realized, there should be a clear process to transfer research-based knowledge into practice*', 50.4% strongly agreed; 24.4% agreed, 17% disagreed, 8.2% strongly disagreed and none was uncertain or had no opinion. This implies that for research utilization' impacts to be realized, there should be a clear and transparent process of transferring research-based knowledge into practice in the real world. The first statement that '*Knowledge and skills are the key motivations and criteria on implementation of research finding by postgraduate students*' was ranked the fifth, since 24% of the respondents strongly agreed; 15.8% agreed, 5.6% were uncertain, 44.4% strongly disagreed and 26% disagreed. These findings however seems to contradict with previous studies such as those of (Ngulube, 2005; Savolainen, 2007&Mutula, 2009) who argued that, the principal motive behind research activity is for new knowledge generations to be used for further developments.

Postgraduate students, unlike other researchers, may however focus on the least effort principle (PLE) in order to complement other academic pressures with significant influence on their ways of responding as they have diverse needs and motivations with adverse effects on how to seek, evaluate and use information from different environmental contexts. Statement number five (5) that, '*The main*

objective of carrying out research is to fulfill their degree requirements, that there is no need for research findings to be disseminated for use' was the least ranked with 47.5%e strongly disagreed, 45% disagreed, 4.2% agreed and 2.5% strongly agreed and none were indifferent or had no opinion. This finding means that, although the principal motivation behind research works among the postgraduate students is to fulfill their degree programs, they still found dissemination of the research findings for use and further developments in the real world to be crucial.

4.6.6 Students' Attitudes on Research Information Seeking (RIS) and Use

Since seeking and usage of research information findings among individuals is determined by a number of factors that can be assessed and viewed based on individual behavioral attitudes, perspectives or lifestyle characteristics on personal research information needs, the study presented the postgraduate students with a number of statements regarding their personal traits to respond to and provide information based on their own views. Attitudes of postgraduate students in relation to research information seeking (RIS) and usage were measured using a 5-point Likert- scale ranging from 1 to 5, with Strongly Disagree (SD) =1; Disagree (D) =2; Do not Know (DK) = 3; Agree (A) = 4 and Strongly Agreed (SA) = 5. The responses were captured and presented as indicated in table 4.8.

Table 4.8: Students' behavioral attitudes on RIS and use

Statements RIS behavioral attitudes	SD (1)		D (2)		DK (3)		A (4)		SA (5)	
	F	%	F	%	F	%	F	%	F	%
1. Research information needs are seen as the motivators to instill and inspire postgraduate students to seek for information.	57	42	11	8.0	7	5.1	49	35	13	10
2. Utilization of research findings for policy development requires an integrated approach that takes on board all key stakeholders.	51	43.6	11	9.4	3	2.6	39	33.3	13	11
3. Convenient use of information source is the key factor which can motivate researcher to seek for research information.	49	33.7	15	10	10	6	42	28.9	29	20
4. It is necessary for the government to formulate policy which requires students to submit copies of their findings to the study area for use.	0	0	11	9	72	62	9	8	24	21
5. To write a good research report, students are supposed to possess adequate report writing skills.	53	39	21	16	0	0	47	35	13	10
6. The main objective of conducting research is for the purpose of accomplishing their degree studies and, thus no need for it to be disseminated for utilization.	2	1.7	49	42.2	9	8	5	4.3	51	44

As indicated in table 4.8, 44% of the postgraduate students strongly agreed that the main objective of them to conduct research is to meet their study requirements, hence their research reports have no need to be disseminated for utilization. In addition, 42.2% disagreed, 8% indicated that they did not know or had no opinion, 4.3% agreed while 1.7% strongly disagreed with the stated objective. Although majority of postgraduate students realize that apart from conducting research for the purpose of degree requirements, their finding are also valuable materials that

can be used for various purposes, such as, facilitating policymakers to formulate policies and make appropriate decision making. As Walugembe et al., (2015) stated, majority of researchers engaged in research activities to inform the utilization process through dissemination workshops, publishing in scientific journals, developing policy briefs, providing technical assistance, and holding one-on-one meetings with service providers and program implementers.

In regard to the statement that *‘Convenience use of the source is the determinant factors which can motivate user to seek the available information’* 49% strongly agreed, 28.9% agreed and 10% were not certain. This suggests that students tend to seek information based on easily available and convenient perceived use of the information sources implying that they often prefer to use electronic resources due to their accessibility and convenience. When asked whether *‘Information needs of postgraduates’ students are seen as the motivators to instill and inspire them to seeking for information’*, 42% strongly agreed, 35% agreed, 7% strongly disagreed, 13% disagreed, while 8% had no opinion. In other words, research information needs and seeking was determined by the information gap that a postgraduate researcher has identified. Students therefore realize their research information need as the strongest motivator of information seeking. These findings are in agreements with Wilsons’ Model (2006) of information seeking behavior that, research information seeking is more likely to occur in response to some individual needs of the researcher.

In the second statement about '*Utilization of research findings for policy development requires an integrated approach that takes on board all key stakeholders*', 43.6% indicated that they strongly agreed; 33.3% agreed; 2.6% strongly disagreed; 11% disagreed and 9.4% were uncertain. This implies that postgraduate students are aware that it is essential to engage and integrate different peoples, authorities and cooperation from key stakeholders such as policymakers and research targeted audience, in the process of implementing these postgraduate research findings. As perceived by Stetler (2001), research findings usage as a process of transforming research knowledge into practice can be viewed into research knowledge in regard to the products of research knowledge, use of research as a set of products and processes the purpose of routine problem-solving with a focus in the use of findings.

When asked whether '*It is necessary for the government to formulate policy which requires students to submit copies of their thesis to the research institution area for accessibility and usage*', 62% of respondents strongly disagreed, 21% disagreed, 8% agreed, 9% had no opinion and none of them strongly agreed to the statement. The 2008 report of the National Institute for Medical Research (NIMR) in Tanzania aimed at identifying the obstacles to better research-policy communication, capacity and willingness in research policy dialogues and recommendations on

what should be done to facilitate research communication. As the report shows, while Universities have satisfactory capacity to carry out research, they have low capacities to repackage the findings into user-friendly language for easy consumption. Universities also lack dissemination strategies and incentives to consume, and an inability to digest scientific information in policy development process due to low understanding with limited openness to new ideas from research.

The implications of postgraduate students' behavioral attitudes on research information seeking (RIS) and use confirms that the existence of policy which requires students to submit a copy of their thesis at the end of their degree programs is not the only criteria to ensure utilization but in addition, other measures beyond students' capacities need to be considered. Research findings' submission policy alone cannot be sufficient, but other several measures need to be put in place. As Boadi and Letsolo (2004) put it, research information seeking (RIS) emanates from research information needs (RIN) which links personal individual characteristics and situational contexts dependent activity that is underpinned, not only by access to information through the strength of information sources, but in association to other external research environmental contexts.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 INTRODUCTION

This chapter provides a summary of the study in terms determinants of postgraduate students' research information seeking (RIS) and use. Conclusions on the study findings are also presented. The chapter further recommended the areas in which the study found necessary in light of the research objectives.

5.2 SUMMARY

The study intended to establish the determinants of postgraduate students' research information seeking (RIS) and usage (RU) by identifying the key determinants of research information needs (RIN), establish the research information sources (RISO) used and establish the ways in which the postgraduate students' research findings are being put into use at the University of Dar es Salaam (UDSM). Descriptive research design, multi-stage sampling, and self-administered questionnaires were used to collect data and analyzed using IBM - SPSS Version 25 software. A response rate of 100% was attained due to effective follow-up to ensure return of the questionnaires from the respondents.

5.2.1 Determinants for Students' Research Information Needs (RIN)

Key determinants of research information needs (RIN) are found to differ depending on the research stage and on the students' research activity. 82.6% responded to have research information need in relation to academic matters for a specified purpose. Since research information seeking (RIS) also depends upon the problem situation from which the need for research information arises that tend to change from one stage of the task to the next level evolving vague awareness to the understanding of the meaning. Postgraduate students' research information needs are also determined by the nature of the academic activity they do in a particular point in time.

5.2.2 Research Information Sources Used by Postgraduate Students at UDSM

Postgraduate students use different information sources to seek research information. The likelihood of information sources to be selected and used is determined by perceived accessibility, ease of use, quality and convenience of information contained by the selected source. 62% of postgraduate students mostly preferred and valued e-sources, followed by printed source (25%), and (13%) of respondents prefer to make use of both the e-sources and printed sources. The criterion for source preference represents an important aspect of information seeking behavior of researchers, though different scholars in information management literatures argue that preferences on informational sources are

situational bound. However, the widely popular and specific use of e-resource by postgraduate students was not clearly mentioned since many of them afford to have their own laptops and modems with internet connectivity for easy access to most convenient sources of information.

Moreover, the most frequently used source used by the students together with the perceived value of the information source was internet (81.7%) when compared to other sources. The convenience use of information source was the most significant criteria in determining the students' selection criteria of the information source. Regarding the level of satisfaction of the information source, students were strongly satisfied also with the internet use.

5.2.3 Postgraduate Students' Research Findings Utilization at UDSM

The study further sought to establish the extent to which postgraduate students' research findings are put into use in practice. Carrying out a research study (a scientific inquiry) whose yields remains exclusively within the minds of a student is meaningless. 68% responded to have no intention to disseminate their research findings at the end of their degree program to targeted audience other than their University. However, 28% had dissemination intentions and others were uncertain. Majority of research findings from this segment are not disseminated for further developments.

Despite the challenges faced by postgraduate students' research findings disseminating for use, 84.4% are aware about the importance of using their research findings, though there was no specific policy which requires them to submit a copy of their research findings or thesis to research institutions at the end of their degree programs. The study revealed a number of barriers to include; insufficient research resources, financial support for findings' dissemination activities, lack of recognition on the value of research outputs from postgraduate students by the government and researched institutions when compared to research findings from donor agents from foreign developed countries.

5.3 CONCLUSIONS

Determinants of postgraduate students' research information seeking (RIS) and Usage (RU) at the University of Dar es Salaam can be determined by a variety of aspects from differing individual student's perceptions, attitudes, and preferences emanating from diverse and dynamic nature of information needs, perceived valued information sources, research environmental contexts and strategies, motivation to stakeholders engagement in the use of research findings and its associated barriers. Most postgraduate students responded that they will not disseminate their research findings to other stakeholders since their research work were requirements for partial fulfillment and preconditions for the enrolled degree programs. They further concluded that research findings dissemination is inhibited by; lack of awareness regarding their importance, costs associated with dissemination with the existing

gap between researchers (students) and policymakers in the implementation of research findings.

Postgraduates' students are basically research students who require information to accomplish academic programs. The most prominent determinants of postgraduate students' RIS and use include; first, research information needs which is the root of information seeking arising from information needs as needs for new information, need to expand or clarify the information obtained and need to confirm or validate the known information. Secondly is the perceived value of information sources. For them, it is the amount of effort and time needed to make contact with and use of a source a found to be a strong predictor of the information source.

Thirdly is the course registration modality. Most students were employees who are not granted permission for further studies. Therefore, they opted for part-time study mode which would allow them for time to gain income for the University' fees, since public and private sectors in Tanzania do not provide opportunities for further studies for employees except on part-timers basis during non-working hours in evenings. Fourthly is the individual character of the student. If a student lacks the necessary knowledge and technical skills on information filtering, he may fail to use the right information sources with adverse impact on RIS, RIN, and RU. Fifthly, supportive research environmental contexts within which the research work take place affect individual research information seeking and use e.g. inaccessible

information source and unsupportive people will equally affect the conduct of information seeking and usage.

The absence of research findings submission policy leads to limited chances for sharing with other key stakeholders due to the inexistence of specific policy and guidelines from the Universities that require them to submit a copy of their theses. Policies act as a general understanding, provide guidance in decision making to any course of action, serve as specific guides for peoples, philosophies, values and drive principles upon which people are expected to act, maintain, follow and adhere. Specific research submission policy is essential to enhance follow-up of and feedback of a performed research activities.

5.4 RECOMMENDATIONS

In order to encourage the postgraduate students' research information seeking (RIS) and usage, it is recommends that:

- (i) The University of Dar es Salaam is supposed to recognize its postgraduate students' research information needs so as to be able to provide the necessary informational infrastructural facilities e.g. availability of reliable internet connectivity, e-resources and conducive environments for the conduct of research activities.

- (ii) Since most the postgraduate students responded that they have no intention to disseminating their research findings to stakeholders other than their University as it was meant to fulfill their degrees, there should be deliberate efforts partly by the University itself and by engaging other key stakeholder such as policymakers and senior government officials for effective dissemination and use of the research findings.
- (iii) Students need to be financially supported by sponsoring them in postgraduate programmes since the exercise of disseminating research findings requires resources such as money and time.
- (iv) There is a need to have a clear and specific written policy which requires students to disseminate their research findings to researched institutions and other targeted audience at the end of their postgraduate studies.
- (v) Policymakers should develop culture and motivation of using postgraduate students' research findings in the process of policy formulation and implementation.
- (vi) There should be a clear and transparent process of transferring research based knowledge into practice in realities.

5.4.1 Recommendations for Further Research

The study recommends that there is a need to conduct further research to identify the obstacles to better research-policy communication, capacity and willingness to utilize students' researches from postgraduate students.

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APPENDICES

APPENDIX I: INTRODUCTION LETTER TO POST GRADUATE STUDENTS

Dear Respondent;

I am a PhD student at Kenyatta University in the Department of Library and Information Science. I am undertaking a doctoral research on ‘Determinants of research information seeking and usage among postgraduate students at the University of Dar Es Salaam, Tanzania’. The purpose of this letter is to request you to complete the attached questionnaire which will enable me to collect data concerning the area of the investigation. You have been involved in this study because of your potential to the required information. Knowing that you are very busy, it will be highly appreciated if you would answer and complete the questions as thorough as possible. The information you provide will be treated with confidentiality and be used only for the purpose of this study. Please feel free to contact the researcher if you need further information concerning the questionnaire.

Thank you for your cooperation.



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APPENDIX II: RESPONDENTS QUESTIONNAIRES

SECTION A: BACKGROUND INFORMATION

Please put a tick (v) in the spaces provided which reflects your most accurate answer:

1. What is your gender?

- (i) Male ☐ (ii) Female ☐

2. Which of the age category do you belong?

- (i) 25 > years ☐ (ii) 26- 30 years ☐
 (iii) 31-40 years ☐ (iv) ≥ 41 years ☐

3. What is the nature of your postgraduate studies?

- (i) Full time ☐ (ii) Part time ☐

4. If your answer in question three above is (i) or (ii), please briefly give reasons on why didyou choose that nature of studies?

.....

5. What mode of study enrolment did you opt for?

- (i) By course work and thesis ☐
 (ii) By course work ☐
 (iii) By thesis only ☐

6. At which stage are you in your research work?

- (i) Proposal writing ☐
 (ii) Report writing ☐
 (iii) Already submitted the first draft ☐

(iv) Already submitted the final report ☐

**SECTION B: POSTGRADUATE STUDENTS RESEARCH INFORMATION
NEEDS' DETERMINANTS**

1. Do you have a need of information concerning research aspects?

(i) Yes ☐

(ii) No ☐

2. If your answer to question 1 above is 'Yes', what kind of information do you need mostly? *(Place a tick (v) in the spaces provided which reflects your most accurate answer).*

Students' information needs	Tick as appropriate
1. Research issues	
2. Class assignment	
3. News and current affairs	

3. From any statement above you indicated as a key determinant of your information needs, *Please briefly explain why do you need such kind of information most?*.....
.....
.....

4. How do you acquire the research information that you rated as mostly needed? *(Place a tick (v) in the spaces provided which reflects your most accurate answer).*

Research information need	Tick (as appropriate)
1. By consulting academic staffs	
2. By using broadcast media (radio and television)	
3. By using organizational sources (public libraries and associations).	

4. By using networked sources (whatsApp, internet, and Face book).	
5. By using printed media (newspapers, magazines, newsletters and books).	
6. By using colleague/classmates	

5. From question number four above, please provide the reason(s) to indicate the way you use to acquire the most needed research information.

.....

6. Please indicate to what extent do you agree or disagree the following statements regarding determinants of research information needs (*You are allowed to choose more than one answer: Strongly Agree = SA; Agree = A; Strongly Disagree = SD; Disagree = D and Do not know/no opinion = DK.*)

Information need	Tick as appropriate				
	SA	A	SD	D	DK
1. There is usually something that motivates an individual to seek for information.					
2. Information need and seeking is not constant and can be influenced by a number of variables.					
3. Information need and seeking of an individual should be understood in his/her context.					

SECTION C: POTGRADUATE STUDENTS RESEARCH INFORMATION SOURCES DETERMINANTS

1. Do you have any source that you prefer mostly to use while seeking for research information?

(i) Yes ☐

(ii) No ☐

2. If your answer from question 1 above is 'YES' then, which source (s) do you prefer mostly to use while seeking for research information? *(Place a tick (v) in the spaces provided which reflects your most accurate answer).*

(i) Printed source ☐

(ii) E- resource ☐

(iii) Both (i)&(ii) ☐

3. From your answers in question 2 please provide the reason (s) for your choice of preferences.....
.....
.....

4. How frequently do you use the following sources to seek for research information? *Please indicate the frequency of use for each source using the following class category: (1) 1-3, (2) 4-6, (3) 7-10, and (4) >10.*

Information Sources	Tick as appropriate			
	1	2	3	4
Interval	1-3	4-6	7-10	>10
1. Thesis/Dissertation collection				
2. Person Collection				
3. The Internet				
4. Colleagues/ classmates				
5. Lecturers/ experts				

5. From the table below above, please indicate how you value the source you use to seek for research information. *Please use the following code to indicate your answer.*

Information Sources	Perceived value		
	No values (1)	Moderate values (2)	High values (3)
1. E- Books			
2. Colleagues/classmates			
3. Lecturers/Experts			
4. Thesis/Dissertation			
5. Textbooks			

6. The internet			
7. Google scholars			

6. From the responses in the table above, please give out your reason(s) why do think your answer is the most highly valued research information source when compared to others?

.....

7. Basing on the factors provided below regarding selection of research information sources, please indicate how does it influence your selection as a right information source? *Please indicate your answer(s) based on research information characteristics provided below.*

Information Sources	Influence Factors			
	<i>Familiarity</i>	<i>Availability</i>	<i>Ease of use</i>	<i>Convenience</i>
Lecturers/ experts				
Thesis/Dissertation collection				
The Internet				
Instructor materials				
Personal source				

8. From each determinant(s) you have indicated above to be the main factor that influenced your selection of research information sources. *Briefly give reason(s) about your satisfaction level while using the source.*

.....

9. From each source provided below, briefly show how effective they are in satisfying your research information seeking and use by putting a tick in an appropriate comment in given box: *Very effective = VE; Effective = E; Less Effective = LE; Not effective = NE.*

Information Sources	VE	E	LE	NE
1. Personal collection				
2. Google scholars				
3. Thesis/Dissertation collection				
4. The Internet				
5. Colleagues/ classmates				
6. Lecturers/ experts				

10. The table below contains various criteria considered to motivate you as an individual to select a research information source. *Which criterion do you think can motivate you mostly on research information source selection?*

Type of information Sources	Tick as appropriate			
	Familiarity	Availability	Ease of use	Convenience
Lecturers/ experts				
Thesis/Dissertation collection				
The Internet				
Instructor materials				
Personal source				

11. From the criteria you selected from the table above as the main motivator, explain briefly on the reason(s) that made you to value it mostly?

.....

12. The table bellows contains a list of information sources. Please indicate to what extent do you satisfied or disatisfies by the source while seeking for research information. *Provide your answers using: Strongly Disagree= SD; Disatisfied= D; Neutral = N; Satisfied = S; Strongly Satisfied = SS.*

Information Sources	Ratings				
	SD	D	N	S	SS
1. Lecturers/ experts					
2. Thesis/Dissertation collection					
4. Colleagues/ classmates					
5. The Internet					

13. From question number 12 above, please explain why do you become highly satisfied by the the most rated source(s).

.....

SECTION D: RESEARCH FINDINGS USAGE' DETERMINANTS

1. Do you intend to disseminate your research findings at the end of your postgraduate studies?

- (i) Yes ☐
 (ii) No ☐
 (ii) Uncertain ☐

2. From the answer you have provided in question one above,briefly give out the reasons for the selection of the answer?

.....

3. How do you perceive the importance of using the research findings? *Please put a tick in an appropriate comment in a box.*

Perceived importance of research outputs use	Ratings				
	SA	A	N	D	SD
1. Students' research findings are very important to be used as it is alleviate an identified knowledge gap in the policy process making.					
2. Students' research findings is essential to be used as it act as the guide lines for policymakersto formulate new polices.					
3. Students' research findings are very significant to be used as it brings up the solution of the identified problem.					

4. Postgraduate students' research findings is of less important since it has no any contribution in community development.					
---	--	--	--	--	--

Key: Strongly Agree = (SA); Agree = A; Neutral = N; Disagree = D; Strongly Disagree = SD.

4. Based on the ways you have rated the provided statements in question 3 above, briefly explain the basis of your rating.

.....

5. Before you conducted data collection for your research, is there any policy which requires you to submit a copy of your research report or thesis to the institution where you conducted your research study?

- (a) Yes ☐
 (b) No ☐
 (c) Uncertain ☐

6. From the answer provided in question five above, please explain the how or why of your answer you responded.....

....

7. If you answer in question five above is 'No', do you think that there is a need of having the policy that requires the students to submit their research findings to research addressees?

.....

8. Below is the table which contains a list of statements concerning perceived barriers to research findings' usage. Please tick one or more box for your appropriate answer to express to what extent do you agree or disagree to the statements.

Perceived barrier	SA	A	UN	D	SW
Inadequate resources such as time and money.					
Students lack awareness concerning importance of research findings' stakeholders' engagement.					
There exists no policy to submit research findings to other institutions					
Lack of recognition of students' research outputs by policymakers and researched institutions.					

Key: Strongly Agree=SA; Agree = A; Strongly Disagree =SD; Disagree = D; Somewhat Agree = (SW).

9. Whether you agree or disagree to the above statements in question 8, please provide reasons for perceived barriers as per your comments.....

.....

10. The table below contains the statements considered to be the motivators of research findings' usage. To what extent do you agree or disagree on the statements given below regarding research findings utilization? Please tick one or more boxes to indicate your appropriate answer.

Motivation statements	Ratings				
	SD	D	UN	A	SA
1. Knowledge and skills are the key motivations and criteria on implementation of research finding by postgraduate students.					
2. The research work for postgraduate students is centered on information with the aim of creating, using and disseminating that information to other users.					
3. Graduate students need to acquire financial support from the government to enable them to put their research outputs into practice.					
4. For research utilization outcome to be realized there should be a clear process to transfer research-based knowledge into practice.					
5. The main objective of carrying out research is to fulfill their degree requirements, that there is no need for research findings to be disseminated for use.					
6. Lack of clear research policy and guidelines affects usage of postgraduate students' research output for development.					

Key: Strongly Agree = (SA); Agree = A; Neutral = N; Disagree = D; Strongly Disagree = SD.

SECTION E: STUDENTS' ATTITUDES ON RESEARCH INFORMATION SEEKING (RIS) AND USE

1. Please rate the following statements relating to determinants of postgraduate students' research information seeking and research output usage by indicating whether you: Strongly Agreed (SA); Agreed (A); Somewhat (SW); Disagreed (D); Strongly Disagreed (SD) on each of the attribute.

Statements RIS behavioral attitudes	SA	A	SW	D	SD
Research information needs are seen as the motivators to instill and inspire postgraduate students to seek for information.					
Utilization of research findings for policy development requires an integrated approach that takes on board all key stakeholders.					

3. Convenient use of information source is the key factor which can motivate researcher to seek for research information.					
4. It is necessary for the government to formulate policy which requires students to submit copies of their findings to the study area for use.					
5. To write a good research report, students are supposed to possess adequate report writing skills.					
6. The main objective of conducting research is for the purpose of accomplishing their degree studies and , thus no need for it to be disseminated for utilization					

2. The table below presents relative weights' determinants of research information seeking and use. To what extent do you agree or to disagree to the statements?

Factors	VI	I	LI	IN
1. Research information needs (RIN).				
2. Perceived value of research information source (RISO).				
3. Course registration modality.				
4. Students' individual characteristics and attitudes.				
5. Stages in individual student' research work.				
6. Supportive research environmental contexts.				
7. Research findings dissemination motivation.				
8. Associated challenges to RIS and use.				
9. Research findings submission policy.				
10. Students' gender.				
11. Age has an influence on RIS and use.				

Key: Very important (VI); Important (I); Less important (LI) and Indifferent (IN).

APPENDIX III: MASTERS DEGREE PROGRAMMES AT UDSM AS ON 2014/2015 ACADEMIC YEAR

A total of 94 masters programs⁸⁰ (85.15%) are done by coursework and thesis/dissertation and 14 (14.9%) are done by thesis only as seen below.

S/ N	Program Title	Programmed Mode	Duration in Months	College/School/Institute
1	MSc. in Climate Change and Sustainable Development	By Coursework and Dissertation	18	Centre for Climate Change Studies (CCCS)
2	MSc. in Agricultural Economics and Business	By Thesis	24	College of Agricultural Sciences and Fisheries Technologies (CoAF)
3	MSc. in Agricultural Engineering	By Thesis	24	College of Agricultural Sciences and Fisheries Technologies (CoAF)
4	MSc. in Aquatic Sciences	By Thesis	24	College of Agricultural Sciences and Fisheries Technologies (CoAF)
5	MSc. in Beekeeping Science and Technology	By Thesis	24	College of Agricultural Sciences and Fisheries Technologies (CoAF)
6	MSc. in Fisheries and Aquaculture	By Coursework and Dissertation	24	College of Agricultural Sciences and Fisheries Technologies (CoAF)
7	MSc. in Food Science and Technology	By Thesis	24	College of Agricultural Sciences and Fisheries Technologies (CoAF)
8	Master of Engineering Management	By Coursework and Dissertation	18	College of Engineering and Technology (CoET)
9	Master of Integrated Sanitation Management	By Coursework and Dissertation	18	College of Engineering and Technology (CoET)
10	Master of Integrated Water Resources Management	By Coursework and Dissertation	18	College of Engineering and Technology (CoET)
11	MSc. in Construction Management,	By Coursework and Dissertation	18	College of Engineering and Technology (CoET)
12	MSc. in Energy Engineering,	By Coursework and Dissertation	18	College of Engineering and Technology (CoET)
13	MSc. in Highway Engineering,	By Coursework and Dissertation	18	College of Engineering and Technology (CoET)
14	MSc. in Power Electronics and Electrical Drives,	By Coursework and Dissertation	18	College of Engineering and Technology (CoET)
15	MSc. in Power Systems and High Voltages,	By Coursework and Dissertation	18	College of Engineering and Technology (CoET)

16	MSc.in Production Engineering,	By Coursework and Dissertation	18	College of Engineering and Technology (CoET)
17	MSc. in Renewable Energy,	By Coursework and Dissertation	18	College of Engineering and Technology (CoET)
18	MSc. in Structural Engineering,	By Coursework and Dissertation	18	College of Engineering and Technology (CoET)
19	MSc. in Water Resources Engineering,	By Coursework and Dissertation	18	College of Engineering and Technology (CoET)
20	Master of Arts in Archaeology	By Coursework and Dissertation	18	College of Humanities (CoHu)
21	Master of Arts in Ethics of Governance and Public Service	By Coursework and Dissertation	18	College of Humanities (CoHu)
23	Master of Arts in Fine Arts	By Coursework and Dissertation	18	College of Humanities (CoHu)
24	Master of Arts in Heritage Management	By Coursework and Dissertation	18	College of Humanities (CoHu)
25	Master of Arts in History	By Coursework and Dissertation	18	College of Humanities (CoHu)
26	Master of Arts in Linguistics	By Coursework and Dissertation	18	College of Humanities (CoHu)
27	Master of Arts in Literature	By Coursework and Dissertation	18	College of Humanities (CoHu)
28	Master of Arts in Music	By Coursework and Dissertation	18	College of Humanities (CoHu)
29	Master of Arts in Theatre	By Coursework and Dissertation	18	College of Humanities (CoHu)
30	MSc. in Computer Science Evening	By Coursework and Dissertation	24	College of Information and Communication Technologies (CoICT)
31	MSc. in Electronics Engineering and Information Technology)	By Coursework and Dissertation	24	College of Information and Communication Technologies (CoICT)
32	MSc. in Electronics Science and Communication	By Coursework and Dissertation	24	College of Information and Communication Technologies (CoICT)
33	MSc. in Health Informatics	By Coursework and Dissertation	24	College of Information and Communication Technologies (CoICT)
34	MSc. in Telecommunication Engineering	By Coursework and Dissertation	24	College of Information and Communication Technologies (CoICT)
35	Master of Integrated Environmental Management	By Coursework and Dissertation	18	College of Natural and Applied Sciences (CoNAS)
36	MSc. in Applied Botany	By Thesis	24	College of Natural and Applied Sciences (CoNAS)
37	MSc. in Applied Science of Materials	By Thesis	24	College of Natural and Applied Sciences (CoNAS)

38	MSc.in Applied Zoology	By Coursework and Dissertation	24	College of Natural and Applied Sciences (CoNAS)
39	MSc. in Biochemistry	By Coursework and Dissertation	24	College of Natural and Applied Sciences (CoNAS)
40	MSc. in Biodiversity Conservation	By Coursework and Dissertation	24	College of Natural and Applied Sciences (CoNAS)
41	MSc. in Biotechnology	By Thesis	24	College of Natural and Applied Sciences (CoNAS)
42	MSc. in Chemistry	By Coursework and Dissertation	24	College of Natural and Applied Sciences (CoNAS)
43	MSc. in Geology	By Thesis	24	College of Natural and Applied Sciences (CoNAS)
44	MSc.in Human Nutrition and Food Security	By Thesis	24	College of Natural and Applied Sciences (CoNAS)
45	MSc. in Mathematical Modelling	By Coursework and Dissertation	24	College of Natural and Applied Sciences (CoNAS)
46	MSc. in Mathematics	By Coursework and Dissertation	24	College of Natural and Applied Sciences (CoNAS)
47	MSc. in Molecular Biology	By Thesis	24	College of Natural and Applied Sciences (CoNAS)
48	MSc. in Petroleum Geology	By Coursework and Dissertation	24	College of Natural and Applied Sciences (CoNAS)
49	MSc. in Physics	By Coursework and Dissertation	24	College of Natural and Applied Sciences (CoNAS)
50	MSc. with Education	By Coursework and Dissertation	24	College of Natural and Applied Sciences (CoNAS)
51	MA. in Applied Economics	By Coursework and Dissertation	24	College of Social Sciences (CoSS)
52	MA. in Demography	By Coursework and Dissertation	18	College of Social Sciences (CoSS)
53	MA. in Economics	By Coursework and Dissertation	18	College of Social Sciences (CoSS)
54	MA. in Geography and Environmental Management	By Coursework and Dissertation	18	College of Social Sciences (CoSS)
55	Master of Arts in Information Studies	By Coursework and Dissertation	18	College of Social Sciences (CoSS)
56	MA. in Political Science	By Coursework and Dissertation	18	College of Social Sciences (CoSS)

57	MA. in Project Planning and Management	By Coursework and Dissertation	18	College of Social Sciences (CoSS)
58	MA. in Public Administration)	By Coursework and Dissertation	18	College of Social Sciences (CoSS)
59	MA. in Records and Archives Management	By Coursework and Dissertation	18	College of Social Sciences (CoSS)
60	MA. in Records and Archives Management	By Coursework and Dissertation	18	College of Social Sciences (CoSS)
61	MA. in Sociology	By Coursework and Dissertation	18	College of Social Sciences (CoSS)
62	MA. in Statistics	By Coursework and Dissertation	18	College of Social Sciences (CoSS)
63	MA. in Strategic and Peace Studies	By Coursework and Dissertation	18	College of Social Sciences (CoSS)
64	Master of Public Health (MPH)	By Coursework and Dissertation	15	College of Social Sciences (CoSS)
65	Master of Research and Public Policy (MRPP)	By Coursework and Dissertation	24	College of Social Sciences (CoSS)
66	MSc. in Geographical Information Systems	By Coursework and Dissertation	18	College of Social Sciences (CoSS)
67	MA. in Development Management	By Coursework and Dissertation	15	Institute of Development Studies (IDS)
68	MA. in Development Studies	By Coursework and Dissertation	15	Institute of Development Studies (IDS)
69	MA. in Development Studies	By Thesis	24	Institute of Development Studies (IDS)
70	MA. in Gender Studies	By Coursework and Dissertation	15	Institute of Development Studies (IDS)
71	MA. in Kiswahili	By Coursework and Dissertation	18	Institute of Kiswahili Studies (IKS)
72	MSc. in Marine Sciences	By Coursework and Dissertation	24	Institute of Marine Sciences (IMS)
73	MSc. in Marine Sciences	By Thesis	24	Institute of Marine Sciences (IMS)
74	MSc. in Natural Resources Assessment and Management	By Coursework and Dissertation	18	Institute of Resource Assessment (IRA)
75	MA. in Applied Social Psychology (MAASP)	By Coursework and Dissertation	18	School of Education (SoED)
76	MA. in Education (M.A. Education) Evening	By Coursework and Dissertation	24	School of Education (SoED)
77	Master of Education Science (M.Ed. Science)	By Coursework and Dissertation	18	School of Education (SoED)
78	Master of Educational Management and Administration (MEMA)	By Coursework and Dissertation	18	School of Education (SoED)
79	Master of Educational Management and Administration (MEMA)	By Coursework and Dissertation	24	School of Education (SoED)
80	MA. in Mass Communication	By Coursework and Dissertation	18	School of Journalism and Mass Communication (SJMC)

81	Master in Entrepreneurship and Enterprise Development (MEED)	By Coursework and Dissertation	18	University of Dar es Salaam Business School (UDBS)
82	Master of Business Administration (MBA)	By Coursework and Dissertation	24	University of Dar es Salaam Business School (UDBS)
83	Master of Finance and Accounting in Oil and Gas (Executive)	By Coursework and Dissertation	18	University of Dar es Salaam Business School (UDBS)
84	Master of International Business (MIB)	By Coursework and Dissertation	18	University of Dar es Salaam Business School (UDBS)
85	Master of International Trade (MIT)	By Coursework and Dissertation	18	University of Dar es Salaam Business School (UDBS)
86	MSc. in International Transport and Logistics	By Coursework and Dissertation	18	University of Dar es Salaam Business School (UDBS)
87	MA. in Revenue Law and Administration	By Coursework and Dissertation	18	University of Dar es Salaam School of Law (UDSoL)
88	Master of Laws (LL.M.)	By Thesis	24	University of Dar es Salaam School of Law (UDSoL)
89	Master of Laws (LL.M.)	By Coursework and Dissertation	24	University of Dar es Salaam School of Law (UDSoL)
90	Taught LL.M. in Commercial Law and Corporate Law	By Coursework and Dissertation	18	University of Dar es Salaam School of Law (UDSoL)
91	Taught LL.M. in Intellectual Property Law	By Coursework and Dissertation	18	University of Dar es Salaam School of Law (UDSoL)
92	Taught LL.M. in Migration and Refugee Law	By Coursework and Dissertation	18	University of Dar es Salaam School of Law (UDSoL)
93	Taught LL.M. in Procedural Law and International Legal Practice	By Coursework and Dissertation	18	University of Dar es Salaam School of Law (UDSoL)
94	Taught LL.M. in Taxation	By Coursework and Dissertation	18	University of Dar es Salaam School of Law (UDSoL)

Source: Adapted and modified from Directorate of Postgraduate Studies, (2016).

APPENDIX IV:ENTRY QUALIFICATIONS FOR MASTERS DEGREE AT UDSM

Candidates who hold an unclassified degree (e.g., M.D.) should have at least a B grade average in the subject of the intended Masters study. Candidates with pass degrees may also be considered for admission if:

- (i) Their undergraduate performance in the proposed subject of study was a B grade or higher.
- (ii) They have satisfied the relevant College/School/Institute with their academic potential through subsequent research experience and/or additional training.
- (iii) Candidates with a coursework average of B+ (GPA 4.0) or higher in specified Postgraduate Diplomas may upgrade to registration for a dissertation leading to a Master's Degree. Candidate with Professional qualifications such as, ACCA, CPA, CIM, CSP, CMA, etc. may also be considered.
- (iv) Only candidates with GPA 3.5 or above in their first degrees are considered for masters by thesis.

Source: Directorate of Postgraduate Studies (2016).