RESEARCH AT MAKERERE UNIVERSITY

Faculty perceptions towards the factors that influence research productivity

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Abstract

In today's world of rapid science and technological advancement, the nature, role and productivity of research activities in each country's universities are gaining more attention and importance. Academic staff of universities all over the world are striving to come up with innovative ideas in their disciplines which is argued to contribute to the competitiveness of their national economies. In African universities, research has gained more value relevant for handling major challenges, such as: tropical diseases, nutrition, poverty, sustainability, security, and demographic developments. However, the role of faculty contributing to knowledge generation has met key setbacks such as, among others, the lack of essential financing, poor research capacity and facilities, and weak research cultures.

This study highlights the perceptions of the staff at Makerere University Kampala (MUK) towards the factors that influence research productivity. The findings of the study suggest that research at MUK has increased over time, which has earned the university a good reputation to attract an increased amount of donor funding.

The research function at MUK is still limited by the weak institutional structures that ensure that research is done in research groups right from the departmental levels. Research remains a highly individual exercise at MUK, where individual staff members that are both ambitious to win promotions and financial rewards from donor-funded projects are the key participant. The research exercise is highly donor-driven as there is no adequate institutional funding and incentive structures to boost research at the departmental level based on disciplinary themes. Furthermore, the research function is not a prerequisite for academic staff to retain their jobs. Instead, the teaching function is still the major function and role of the academic staff. In essence research is essential only for staff that seeks to further their career rank.

The findings of the study also reveal that the university has come up with a number of initiatives to enhance the research function these include: creation of a research agenda, a research and innovation policy as well as an intellectual property management policy. Through the Directorate for Research and Graduate Training (DRGT) office, the university organises staff-training on research as well as proposal and grants application writing and funds staff for PhD training. These are positive steps towards increasing the research productivity.

In summary, research is not yet an institutional priority at MUK. Instead, the institution's focus is primarily on undergraduate teaching. This organisational milieu has shaped the general research

culture in which the academic staff prefers teaching to research. Research has not gained more popularity as it is not financially rewarded by the institution. It is fair to conclude that this outlook towards research is exacerbated by the weak graduate training programmes that neither motivate young academics to take on research nor motivate the senior lecturers to consolidate their disciplinary knowledge generation.

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Abbreviations

CHET	Center for Higher Education Transformation
DRGT	Directorate of Research and Graduate Training
GDP	Gross Domestic Product
GERD	Gross Domestic Expenditure on Research and Development
HEI	Higher Education Institution
HERANA	Higher Education Research and Advocacy Network in Africa
HOD	Head of Department
IBSS	International Bibliography of Social Sciences
ICT	Information and Communication Technology
IGF	Internally Generated Funds
JICA	Japan International Cooperation Agency
MISR	Makerere Institute of Social Research
MUK	Makerere University Kampala
MUSF	Makerere University Strategic Framework
MUARIK	Makerere University Agricultural Research Institute Kabanyoro
MUBFS	Makerere University Biological Field Stations
NCHE	National Council of Higher Education

NGO	Non-governmental Organisation
NORAD	The Norwegian Agency for Development Cooperation
NUFFIC	Netherlands Organisation for International Cooperation in Higher Education
PIBID	Presidential Initiative on Banana Industrial Development
R&D	Research and Development
RUFORUM	Regional Universities Forum for Capacity Building in Agriculture
SAP	Structural Adjustment Programme
SIDA	Swedish International Development Agency
SSA	Sub-Saharan Africa
STI	Science Technology and Innovation
UCT	University of Cape Town
USAID	United States Agency for International Development

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CHAPTER ONE: INTRODUCTION OF THE STUDY

1.1 Introduction

World over, there has always been a yearning for new information and technologies, which has consequently led to the birth of what is today known as knowledge-societies. According to Bindé (2005: 27), this is the capability(ies) to identify, produce, process, transform, disseminate and use information to build and apply knowledge for human development. Sawyer (2004: 213) too adds that knowledge has been maximised to come up with more solutions to societal problems, through sustainable institutions and structures with respect to modern hygiene, nutrition, environmental protection, and governance systems.

This rise of knowledge-societies especially in the developed countries has given research a key position in higher education institutions, whereby research is moving from what it was before (a core function together with teaching), to becoming a dominant function for university prestige. However, this has not been the case in many higher education institutions in Africa.
Makerere University as the biggest research university in Uganda is the main object of this study and is not foreign to the growing need for knowledge production. Today MUK is the most outstanding institution in the region, receiving, for example most of the donors' attention and funding. However, despite its high acclaim at a regional level, its research output is very limited from a global point of view and it even lags behind other African universities, such as the University of Cape Town (UCT) (Cloete et al. 2011). This therefore necessitates a deep study into the key factors that affect research productivity at MUK, also given the differences between MUK's faculties in their research productivity. Two major challenges have been highlighted by the HERANA[1] study as the key determinants for the low research output: lack of funding and the low PhD graduation rates (Cloete et al.20ll:36). Notwithstanding that external donors claim to have been part of the shaping of the research environment at Makerere, in practice they have given birth to a "consultancy" culture at the disadvantage of PhD mentoring, and the production of academic publications (Maassen 2012: 248).

The research dynamics in the African universities is fast changing and affected by a large number of factors, such as: funding, access, capacity, networking, and visibility. These factors make research productivity a broad concept that cannot be covered jointly in a single Master thesis. For the benefit of this study we shall therefore concentrate on individual, organisational, funding and research

1 HERANA project set out to investigate the role of higher education to economic development in Africa, eight African universities were featured: http://chet.org.za/programmes/herana/

cultural-related factors that influence research productivity. My main analytical perspective in this relates to the question: How do the academics interpret the factors that influence research productivity. This can be expected to contribute to a better understanding of the reasons why some academic staff in some faculties have performed better than others when it comes to research productivity at Makerere University. We have to note that some faculties especially in the science field perform better than those in humanities in terms of research, understanding these differences is crucial for this study.

1.2 HERANA Project

This study is built in many respects on a multi-year research project that is coordinated by CHET[2] (Centre for Higher Education Transformation) in South Africa and it is called HERANA. Its main goal is:

To investigate the relationships between higher education and development in the African context, placing special emphasis on economics and development[3]. This has been done through two main phases:

HERANA Phase1, which focused mainly on research output and advocacy for higher education in Africa, while HERANA Phase II focused on conducting evidence-based research in the African higher education sectors in the areas such as: evidence-based policy making and management, national higher education commissions, incentives and rewards for academics.

The project includes eight universities from eight African countries and in my study I am interested in examining the Ugandan part. This study builds on the HERANA project's findings on Makerere University's research output, incentives, management and general educational context.

HERANA was the first multi-year project in Africa that was looking from a comparative perspectiveinto aspects of research productivity. While this study is building on the HERANA project, it also has its own empirical components and that is because it does not seek to merely repeat the HERANA work but rather aims at getting a better understanding of the factors influencing research productivity, while the HERANA project has mainly focused on mapping research productivity.

2 CHET, Centre for Higher Education Transformation, South Africa. http://chet.org.za/

3 HERANA Project, http://chet.org.za/programmes/herana/

1.3 Purpose of the study

The study seeks to explore the different factors that influence the research productivity of the academic staff at Makerere University. It will focus on the individual perceptions and opinions of academic staff at MUK regarding the different individual and environmental factors that motivate them to engage in research practices. Having in mind that the university has specific aspirations and goals regarding the research productivity of its staff, it will be vital for us to see the connection between the academics' experiences and the institutional policies towards the stimulation of research productivity.

1.4 Rationale

This study is inspired partly by the HERANA project findings on research productivity in African universities, as well as the author's knowledge of Uganda's higher education system. This study has also been inspired by some general observations of the research environment in African universities, which indicate that there has not been much progress in the area of research output. While research has become more important in today's knowledge society, Uganda's only research university; Makerere University not necessarily at the level where the society wants it to be even though it has made a lot of progress. Makerere University is the most productive institution in the East African region, however, when it comes to Africa in general, it still lags behind its regional counterparts, such as UCT, in terms of the number of academic publications. It is therefore vital to take a deeper look into the factors that are responsible for this situation.

1.5 Statement of the problem

The study will explore the research productivity in Makerere University. Research has traditionally not been a core aspect of higher education policies with respect to African universities. However, in the global context of the knowledge society, a more open debate in many countries has emerged. This trend also includes Uganda. The topics of this debate constitute among others issues of research capacity, infrastructure, and research output. Academics engaging in research understand that it is not only part of their job to do research, but strive to make key strides in the different areas of the economy, such as: education, health, agricultural science, technology and manufacturing as well as discover more about the world. On the other hand, many academics have not been very

research active, which has impacted the gross research output levels. As this study seeks to understand research productivity at MUK, attention will be paid to existing literature that has examined research output per academic staff member in universities.
The overall research problem explored in the study can therefore be formulated as follows:

What are the main factors influencing research productivity at Makerere University?

1.6 Research Questions

Based on the overall research problem, this study seeks to address the following research questions:

i) *What is meant by 'research productivity'?*
ii) *How has research productivity developed over the last ten years at Makerere University?*
iii) *How is research leadership and management organised in Makerere, what is the institution doing to stimulate research?*
iv) *What are the main sources of funding for research at Makerere University?*
v) *How do the factors at the individual level influence the research productivity at Makerere University?*
vi) *How has the research culture influenced the research productivity at Makerere University?*
vii) *How can research productivity be improved at Makerere University from the academics' perspective?*

1.7 Significance of the study

The researcher believes that this study will produce relevant knowledge on the salient factors that influence research productivity at Makerere University. This study will also bring to light the need to strengthen the role of research funding, organization and government policies as factors that influence research productivity thereby contributing to a better understanding of the underlying reasons for the gap between active and inactive academics in the area of research.

This study will contribute to enriching the knowledge pool in the area of research policy in the African universities in general and specifically Makerere University. This field has not had as broad and deep a research agenda as it requires. Most studies have concentrated on other key areas of

higher education such as: funding mechanisms, teaching and learning, quality assurance, but not research productivity. The few studies that have focused on research in African universities have been geared towards quantifying the general research output and not examining the specific factors that lead to research productivity.

The study can also be used by institutions and different stakeholders in both private and public domains for getting a better understanding of the research productivity issues at Makerere University and to devise the different approaches to address them thus increasing productivity in both Makerere and other Ugandan universities.

1.8 Delimitations of the Study

The researcher has carried out purposive sampling of two faculties in different disciplines, since research productivity has been found varying across different disciplines. The research scope does not cover all the faculties in the university due to practical considerations of time and resources, this being a master's thesis. This implies that the study will only serve to enable us to understand some of the conditions in which research work is undertaken at MUK, and which factors stimulate research productivity.

It is also key to emphasize that this being a qualitative study in nature, our goal is not generalisability of the result, but instead a deeper understanding of the particular cases that we are working on in this study. The results will have implications on how to interprete research productivity in higher education institutions in Uganda as well as other African countries.
That noted, the study is going to dwell much on the literature from the HERANA project, as backdrop of understanding the challenges that major flagship universities in Sub-Saharan Africa (SSA) face in their attempts to execute knowledge production. Many of the concepts highlighted in the HERANA study, such as: pact, coordination and connectedness, academic core, may not be directly relevant to this study; however, since the HERANA study had a component of research output among eight flagship universities, including Makerere university, there are key lessons to pick from it.

1.9 Limitations

This study falls short of generalisability on the idea of research productivity across the whole population at MUK, due to the fact that the researcher chose to use purposive sampling, leaving out a number of people who may have been vital for the study.

This being a Master's degree thesis, the data collection process is constrained by practical considerations such as the time to interview more stakeholders, and the available resources. It is therefore worth noting that, if this study had been done on a wider scope devoid of the above constraints, the results might have been different.

The researcher further notes that he fell short of his ambition of examining and exploring the analytical framework on research productivity at a deeper level. The analytical framework would ideally require a quantitative component through a survey, which would enable us for example to do a factor analysis to bring out the relationship between the four components highlighted in the framework. However due to practical considerations of time, space, and resources and field work limits, the researcher settled for qualitative data collection tools, such as semi-structured interviews, which has not allowed him to fully profit from using the analytical framework designed for this study.

The researcher would also wish to mention that not many academics both active and inactive in terms of research output were willing to talk directly about the topic of research productivity. Due to suspicions, both active and inactive parties participate with reservations. The active researchers feared that I may be working for their donors as an indirect evaluator, while the inactive ones feared that I might be reporting to the university administration.

1.10 Structure of the study

The study comprises six major chapters, with sub-divisions on each part. Chapter one entails the introduction of the study, the purpose of the study, research problem and questions, motivations and rationale, significance of the study, the delimitation of the study, limitations of the study, and the structure of the study. Chapter two focuses on the background and context of the study, the concept of research productivity is discussed as well as the role of research in the contemporary African university.

Chapter three, basing on the literature reviewed, explores the key concepts towards an analytical framework, whereas chapter four deals with the research design and methodology. Furthermore, under this the research makes a clear justification of the tools that have been utilised to collect the data useful for the study. Chapter five presents and makes a thorough analysis of the data collected in the field, regarding the factors that influence the research productivity at Makerere University, based on the perceptions of the academics. Key concepts from the framework will be discussed: research productivity, research funding, capacity, influence of donor funding, organisation and leadership, institutional research policies. Finally, chapter six discusses the findings and makes recommendations based on the findings. Suggestions for further research are also made at the end of this chapter.

CHAPTER TWO: BACKGROUND AND CONTEXT OF THE STUDY

2.1 The African University

The universities in Africa are deeply rooted in the colonial past of their countries, and most of them trace their background to their former colonial authorities. Such universities include among the older ones ; University of Ibadan, the East African Universities, and Lovanium in Kinshasa. These institutions were also under the tutelage of metropolitan institutions and became full-fledged and autonomous only after attainment of independence in the countries concerned (Yesufu 1973:37). These universities played a role of strengthening the workforce to occupy different positions in the civil service of the newly created independent African nations, and consolidating the sovereignty of the newly-independent states through producing intellectual capacity which would fuel the national ideologies. This implies that the university still holds the domestic historical significance, as well as a colonial legacy in the form of structure and policy, curriculum, and scholarship of the academic core. A dilemma that universities are confronted with today is; How to adapt to the local needs and link to global research and development (R&D) networks, while breaking away from their colonial past (Castells 2001:216).

In the 1960's when most African countries had achieved their independence, the universities too had to reassert themselves as independent. Court (1991: 332) refers to them as "fragile institutions" that were facing urgent demand for training of manpower and had to turn themselves quickly into functioning and credible universities.
In most African nations, the post-independence university, in an effort by the polity to demand accountability from universities, also became victim to politicization (Lulat 2003: 29). Some even saw an invasion of armed troops. This brought about temporary forced closures of universities by governments, such as in: Algeria (March 1992), Burkina Faso (January 1999), Cameroon (April 1991), Congo (June 1990), Ethiopia (May 1989). This meant that the involved universities would lose track of the first academic steps that the colonial powers had set, including the valuable infrastructure and staff, most of whom fled to more politically stable countries.

In the 1980's, as the African university tried to resuscitate from the wake of all the national political confusions which had drowned it, a strong advocacy by the external agents, such asthe World Bank emerged, focusing on the key role of primary education, arguing that higher education was a luxury and that it was better to close domestic universities and train graduates abroad (Mamdani 1993:10).

This prompted governments to rethink their national priorities, thus diverting the funds that would be used for higher educational institutions towards universal primary education. This step led to an era of financial unsustainability for universities, which had no option but to buy into the idea of privatisation and commercialisation of university education.
Privatisation opened doors for many more students to attend higher education but at a cost. It happened not only in an infrastructure-constrained environment, but also increased the teaching workload for the academics, which would later have serious implications for staff-remuneration and time to do research thus poor quality education (Altbach et al. 2009:86).

Today, the African university strives to become more internationalised and competitive. But, this calls for a constant and strong form of knowledge production in order to be able to become part of the global networks of research universities. This makes research both a prerequisite for not only the competitiveness but also the survival of the university in Africa. As highlighted by Castells (2001), this shift from the traditional roles of the African university, that is, formation and diffusion of ideology, and the selection of the dominant elite, to the new functions of training the work force and especially the production of new knowledge through R&D, is prevalently becoming an urgent necessity.

The African university sector has been characterised by a low participation rate compared to other continents' university sectors. The tradition of most of African citizens acquiring a basic education meant for helping them to fill the artisan or informal sectors, such as subsistence agriculture, mining, metal works, building and construction, while university education was reserved for few representatives from the more affluent families, this created limited student numbers still reflected today in the low participation rates.

However, student numbers are growing in many African countries especially at the advent of the privatisation of higher education. It is becoming easier for people from the different walks of life to enrol into universities notwithstanding the numerous quantity versus quality issues (Munene 2012: A6). With the economic growth in most African countries, including Uganda, the role of research as a key determinant for development has become an important issue. Bloom and Canning (2006 :19) emphasise the role of research and development as a means of stimulating economic growth and productivity. However, in many African universities the research function is still seriously lagging behind. Most of the universities pay more attention to what is more rewarding financially: offering educational programmes.

2.2 The Higher Education System in Uganda

Uganda is a landlocked country located in the East Africa, bordering Kenya in the east, the Democratic Republic of Congo in the west, Tanzania in the South and South Sudan in the North. Uganda's population is currently estimated at about 39 million people, with the age group of 0-14 as the largest section accounting for 48.1% of the total country's population[4]. This indicates the dire need for the government to invest in higher education to accommodate the increasing demand for higher education to be expected in the coming decades. The participation rate in the higher education sector (tertiary institutions and Universities) in Uganda has seen a considerable growth since 2009 from 4.2% to 9.% in 2011.[5] Uganda's education system can be characterised as a 7-4-2-4 model, where the primary section take seven years, lower secondary school four years, advanced secondary two year, and lastly higher education four years.

It is difficult to mention Uganda's higher education sytem without mentioning the British colonial influence on it. Uganda's higher education system carries a number of its features from the British school system established during the colonial days, thus having its roots in the western world. The university sits at the helm of the higher education hierarchy, followed by tertiary educational institutions, these include: the national teachers colleges, the agricultural colleges, the vocational and technical colleges, as well as the business colleges.

Uganda's higher education system encompasses both public and private components. The public higher education institutions being both the oldest and strongest, including : Makerere University established in 1922, and Mbarara University of Science and Technology in 1989. The other three public institutions are: Kyambogo University, Gulu University and Busitema University. There are 29 private universities, while there are 151 other diploma-awarding institutions are 151 (NCHE 2012:12)The government of Uganda owns 73%of all higher education institutions, while 27% are privately run. The general landscape of Uganda's higher education system has seen a steady growth in of students which is a response to globalisation as well as the liberalization policy within the Ugandan education system. The higher education system is overseen by the National council of Higher Education (NCHE) which by the Ugandan constitutional Act, is mandated to accredit and regulate the establishment and ensures quality of all higher education institutions.[6]

Although the growth in the gross numbers as well as female enrolment in Uganda's higher education is a positive indicator of economic growth and a step forward towards the attainment of

4 http://worldpopulationreview.com/countries/uganda-population/
5 http://www.uis.unesco.org/DataCentre/Pages/country-profile.aspx?code=8000&SPSLanguage=EN
6 http://www.unche.or.ug/about-unche/functions

the millennium development goals[7], access to higher education is still an unreachable dream for the poor communities of the country (NCHE 2012:2). Higher education system in Uganda is also grappling with infrastructural development, governance, staffing, and remuneration problems. For now the growth of student enrolments in both public and private institutions highlights the appreciation of higher education within the general population as a tool of bettering one's social status. However, this quantitative growth has not matched with quality.

Uganda government supports research in specific key science areas such as: health, agricultural sciences, technology and business incubations, through collaboration with key academics from universities. This is done through public bodies that are semi-autonomous and also lie outside the jurisdiction of public university. Examples for this are : the Uganda Industrial Research Institute, the Uganda National Council for Science and Technology, or the Uganda Virus Institute. Through such bodies, the Ugandan government channels its funding towards key research areas. The government does not have a consistent form of appropriation towards higher education research in universities (NCHE 2012:23). This implies that universities have to seek for alternative means to fund their research initiatives.

2.3 National Council of Higher Education (NCHE)

Within the Ugandan higher education sector, there are many policy actors, including the National Council of Higher Education (NCHE). Although the Ministry of Education is charged with the duty of overseeing everything pertaining education in Uganda, universities and other tertiary education institutions are subject to the higher education ministry. In the context of Uganda, the most active body that oversees tertiary institutions is the National Council of Higher Education. Unlike the Ministry of Higher Education which plays more of a political role, NCHE plays a more direct and technical role in steering of the higher education institutions. This body was formed through the 2001 Act of Parliament[8] and it is responsible for overseeing Uganda's higher education system. Its mandate is to carry out a number of duties: disseminating information on higher education for the benefit of the people, advising the government on the establishment of public and private higher education institutions and, accrediting higher education institutions.

Since 2006, the NCHE has done extensive statistical auditing of the higher education sector, which has included among other key concerns the examination of participation rates, funding, enrolment

7 http://www.un.org/millenniumgoals/
8 http://www.muni.ac.ug/files/ACT.pdf

and graduate completion rates, and infrastructural ratios. This has been reported upon through one of its annual publications notably "State of Higher Education"[9]. The findings from these publications are key in informing this study on research productivity in Makerere University. Without NCHE, there is no other avenue to obtain a national view on the changing trends of higher education in Uganda.

2.4 Makerere University: A Historical Background

Although the British ruled Uganda as early as 1894 as a protectorate of their Empire, not much was done at the time to develop higher education in the country. It was not until 1922, that the British empire founded Uganda technical college with 14 boys majoring in carpentry, building, and mechanics. The college's name was later changed to Makerere (Passi 1994:1).
This new college served most of the East African territory, enrolling also a few students from Zambia and Malawi. The explicit purpose was to supply inexpensive support staff for a variety of institutions run by the colonial government and its missionary allies. At the same time, there was an implicit purpose: controlling education to forestall the dangers of independency thought (Sicherman 2008:13). It was not until 1943- 45 that two commissions were set up to consider the possibility of the creation of a university. The Asquith report and the first Makerere Act of 1949 gave birth to the legal status of the university. The university would be called the University of East Africa, Modelled after and affiliated to the University of London, it was to admit undergraduates from all the East African countries (Kenya, Tanzania, Uganda). However, this regional engagement lasted only twenty years due to internal independence politics and nationalistic pressure within Kenya and Tanzania, demanding for their own national universities. In 1970, the University of East Africa came to an end, and was changed into what was to be called Makerere University College.

At this time, Makerere was at the height of its international fame (Sicherman 2008:13). However, this glory and fame was marred by the political turbulence which engulfed Uganda. The effects of the military dictatorial rule at the time further took toll on the higher education sector. Makerere not only lost a number of talented staff, who chose to leave for countries in Europe and America but also the infrastructure was left in a critical state. By 1990, Makerere was a completely different institution compared to what had been envisaged before. It was an institution fighting against the global reforms of neo-liberalism, privatisation and marketisation (Mamdani 2007:12). Those reforms had a negative impact on the quality of education since they meant a steady decline in

9 http://www.unche.or.ug/publications/state-of-he/state-of-higher-education.html

resources allocated towards higher education versus increasing enrolments.

Historically, Makerere has had key renowned research centres, these include the East African Institute of social research which later became Makerere Institute of Social Research (MISR), the Kabanyoro Agricultural farm, the Medical school research programme at Mulago National Hospital and the Science Faculty including Botany, Zoology, Physics, and Chemistry. In the era of the Amin dictatorship, these centres to a large extent lost the operating capacity in the form of researchers, who left for other countries, while also external funding and all regional and international collaborative research projects came to a halt (Muwanga et al. 2003:11). Today most of these research centres have regained life and are engaged in research activities. Makerere University positions itself as a research-intensive university that seeks to advance basic and applied research in humanities, science and technology and related innovations. The Makerere University Strategic Framework (MUSF) (2007: 9) clearly stipulates its objectives in relation to research and innovation as strategic pillars of the university. Some objectives include among others increasing the visibility of research centres, increasing the quantity and quality of research output and increasing funding to university research.[10]

Currently the university has established the Directorate of Research and Graduate Training (DRGT)[11], to facilitate supervision of graduate students, coordinate and administer all research activities especially advising on research priorities in line with the national development professional objectives, and also link the university and the outside world in identified research areas. The body has formulated several research policies, such as the Research and Innovation policies, the Intellectual Property Management Policy and a Research Agenda (2013-2018).

In retrospect, Makerere University is striving hard to assert itself as the strongest research university in the region. This has already been achieved at a national level, where MUK ranks top in knowledge production and is also affiliated to many national policy intervention in areas like health care and or nutrition. In a way MUK through its research centres, is a conduit of many national policy frameworks. According to the HERANA study (Bunting 2014:20), of all the eight universities, by 2011, MUK was responsible for 80% of the total research output together with Nairobi University and UCT. This indicates how significant Makerere is placed in terms of knowledge production not only in Uganda but also in East and Sub-Saharan Africa. On a regional level, MUK comes second to UCT which stands at an estimated 3.51% of research output per professor and Associate professor. This explains why the researcher chooses MUK as the focus of the study in attempt to understand research productivity at the African university.

10 http://docs.mak.ac.ug/reports/repositioning-makerere-meet-emerging-development-challenges

11 http://rgt.mak.ac.ug/?q=content/research-policies

CHAPTER THREE :TOWARDS AN ANALYTICAL FRAMEWORK

3.1 Introduction

Research productivity is an important, but often neglected component of the African university. There may be academic and political explanations for that, however the aim of this thesis is not to explain why the research productivity has been such a marginal component, but rather to contribute to a better understanding of the nature of research productivity. The first part of this chapter consists of the exploration of the components that have been identified as important for the understanding of research productivity. These components of the analytical framework will be presented separately, that is, individual factors, organisational factors, funding and research culture. In the second part of this chapter, I will relate these four components and explain briefly how I assume they affect research productivity in an African university. In this study I seek to contribute to an understanding of research productivity at an academically productive university which is still struggling with its strategic aim towards increased research productivity: Makerere University

Castells (2001: 210) has discussed four traditional functions of the university, which in his views are: the formation and diffusion of ideology, the selection of dominant elites, the production and application of knowledge, and the training of the labour force. He gives an interesting foundation for starting the debate but he does not refer to, or present empirical data; in essence he makes a number of observations.

Nonetheless, it is generally acknowledged that research is potentially a key function for African universities but they face specific problems regarding this function. In the period after independence the universities in Africa, found themselves in a state which demanded first, the training of a crucial labour force for the new nation states' civil service, and second, cadres who were patriotic enough to strengthen the independence ideologies that were harnessed at the time (liberty from the colonial masters). These roles have not only dominated the university in SSA, but also crippled the other key modern role: production and application of knowledge. Today the public university has a challenge to balance between being the sole provider of a highly skilled labour force and the main producer of knowledge. This has been exacerbated by dwindling funding for higher education in favour of primary education, growing student enrolment in universities, poor governance and politicisation deeply rooted in the national political milieu (Okoiga et.al 2012).

Sawyerr (2004: 211) examines the African universities' challenge of research capacity development.

He hints to the need for strengthening indigenous educational systems and institutions to enhance knowledge production; however, this can only be feasible if also research capacity is developed. By research capacity he posits: quality of research environment, funding, adequate infrastructure, research incentives, time available for researchers. On a related note, he adds that many African countries have performed poorly in terms of research due to compromising working conditions of the research staff, which is manifested through poor remuneration, heavy teaching loads, inability to mentor young faculty, and inadequate infrastructure.
As we seek to understand the factors that influence research productivity in this section, our discussion will be based on two major components of research capacity as identified by Sawyerr (ibid: 217), that is: the active, and the environmental component. The active component is the individual researcher, or team of researchers who are directly engaged in the day-to-day generation of knowledge and the production of academic publications. Whereas the environmental component consists of the general societal or institutional conditions on which the research productivity thrives, this includes organisational, managerial and material conditions within a particular society and institution.

3.2 Research productivity as concept.

The university world over is undergoing a multitude of changes. These changes are related to the way universities have to respond to their economic and international environments (Stromquist 2007:83). Some have become more privatised in countries where the resources are scarce and population numbers high, others have remained public, but have become more focussed on entrepreneurial profiles and activities. The bottom line is there is a wave of competitiveness looming within the higher education sector (Altbach et al. 2007:83).
This has changed the way universities account for their effectiveness as higher education institutions as well that of their staff, making it pertinent for them to assess their productivity (Kirsch 2006). Today, research is used as a benchmark for measuring the productivity of the university. In this, new questions have emerged: What is productivity? How productive are we as an institution? What is the productivity of our staff members? All these prompted by the need to compete nationally and in some cases even globally for the best students as well as funding from both government and private institutions. However, the answers to these questions do vary from one context to another depending on various aspects.

Some institutions, especially the teaching intensive ones, will rate their faculty upon their ability to carry out teaching of students as a primary role, whereas research intensive universities will focus in

the first place on the productivity in the form of research outputs generated by the faculty. It is also evident that for today's technological and scientific strides within the business world, the university can play a pivotal role through incubation of research ideas, which has made research a key tool for measuring progress in innovation.
Research productivity is highlighted as the key requirement for today's faculty tenure ship as well as for promotions in general (Kotlrik et al. 2002). In research universities professors are expected to publish. This form of job requirement for the professorial staff has new implications on time allocation, career advancement and social status of the faculty. Institutions have to devise policies that create conducive stimulating research environments in the form of, for example, travel allowances, funding for attending conferences, office space, summer remunerations, workshops and academic writing trainings.

In many HEIs, faculty productivity has been measured through research output, that is, academic publications, especially articles in peer -reviewed journals, external research funding, conference proceedings, and the numbers of PhD candidates and graduates. Other higher educational institutions might choose to use the term productivity in relationship to teaching, student learning and other faculty activities. However, this study is only focused on research productivity.

This makes it crucial to find a fairly agreeable understanding for the term research productivity for the benefit of this study. Creswell (1985:24) portrays research productivity as a practice that includes: research publications in professional journals and in conference proceedings, writing a book or chapter, gathering and analysing original evidence, obtaining research grants, carrying out editorial duties, obtaining patents and licenses, writing of monographs and papers presented at professional meetings. Above all stressing that the most common way of measuring research productivity is through publication counts: the level of an individual's research output.

Cloete et al. (2011), in the context of the HERANA project, have used the publication of scholarly articles, conference proceedings, and mentoring of PhDs as the key benchmark for research productivity. Other studies that have attempted to compile research performance levels in Africa have used scientometric approaches, specifically concentrating on scientific research output in the form of publications and citations (Arencibia Jorge et al. 2012, Tijssen 2007 in Mouton 2007, Boshoff 2009).

How to appropriately measure research productivity varies from one discipline to another, for example faculty may not equally agree on whether conference proceedings are worth including in the publication count, more still some disciplines do underscore the value of co-published papers

and instead promote individual scholarly papers as the most important. While some disciplines might consider only articles that are published in scientific journals, others may prefer to consider all publications regardless of the nature of the journal used. For the benefit of this study, our measure for research productivity will be based on published scholarly journal articles and mentoring of PhDs, as the key standards of understanding research output. This definition of research productivity has been adapted from the HERANA study, which explored the research environment in eight African universities with Makerere University the prime focus of this study inclusive.

From a global perspective, there are some a positive indication when it comes to research output of the African continent. According to recent data on research trends in Africa based on SCOPUS[12], there has been an increase in scientific research output between 1996 and 2006 can be observed. This includes the number of research papers published in scientific journals with at least one African author have quadrupled from about 12,500 to over 52,000. This implies an increase from 1.2% to 2.3% of Africa's share of the global production of academic articles (Schemm 2013:11). Despite the increase in academic articles published by African researchers, there are still fewer signs that national governments are doing much to invest in covering the knowledge gap as compared to their counterparts in the developed nations. In a study done by Sanyal and Varghese (2006), it is reiterated that there is a large disparity between the rate of investment in research and development (R&D) by developing and developed countries. The study pinpoints Sweden and Finland who respectively invest in R&D 400 and 350 times what Zambia does. It is also noted that all developing countries invest less than one per cent of their GDP in R&D activities, while many developed countries invest more than one per cent, up to some countries that invest between two and three per cent of their GDP (Sanyal and Varghese 2006: 2).

A global research report published by Thomson Reuters[13], features the research output between 1998 to 2008 of the different sections of Africa: North[14], Central and South (Jonathan et al., 2010 : 5). The report further reveals that the Central region produced the smallest quantity of publications; 7,100 per year despite the large number of countries therein. The North with only six nations emerged with the highest number of papers: more than 10,500 in 2008, whereas the South had 10,000 papers. The uneven performance of these regions in terms of research strongly correlates

12 http://www.researchtrends.com/issue-35-december-2013/the-bibliometrics-of-the-developing-world/

13 http://thomsonreuters.com/thomson-reuters-web-of-science/

14 North (Egypt, Tunisia, Morocco, Algeria, Libya, Sudan), Central (Nigeria, Kenya, Cameroon, Ethiopia, Uganda, Ghana, Senegal, Ivory Coast, Burkina Faso, Madagascar, Benin, Gambia, Reunion, Gabon, Mali, Niger, Republic of the Congo, Togo, Eritrea, Guinea Bissau, Rwanda, Mauritania, Central African Republic, Guinea, Chad, Burundi, Sierra Leone, Liberia, Comoros, Equatorial Guinea, Cape Verde, Djibouti, Sao Tome & Principe, Somalia), South (South Africa, Tanzania, Zimbabwe, Botswana, Malawi, Zambia, Namibia, Mozambique, Mauritius, Democratic Republic of the Congo, Swaziland, Seychelles, Angola, Lesotho)

with the GDP levelsin the respective regions. Egypt, Algeria, Nigeria, South Africa, each from either regions have been identified as having a higher GDP as well as leading in terms of research output (ibid:7).

Cloete et al. (2011: 156) examining the academic core of Makerere University, make a crucial observation that although there was a growth from 73 academic publications in 2001 to 233 in 2007, the ratio of publication units per permanent staff was at 0.20, well below the ratio of 0.50, a target set for South Africa's research universities (the role-model universities). They further indicate that the research funding estimates suggest that the university is not able to finance its research activities, which explains the low research output levels.

In reviewing literature in this study, our aim is to build a concrete foundation and coherent understanding of the factors that influence research productivity. Therefore, in order to get a better understanding of the nature of research productivity, relevant academic literature[15] has been examined. This examination has led to the identification of four major components: individual factors, organisational factors, funding, and research culture. Each of these will be discussed in more detail in the following section.

3.2.1 Individual Factors

Whereas it has been common to emphasize the role of the organisational factors in universities when it comes to boosting the institutional knowledge production, it is vital to start with the individual factors. It is first and foremost through personal initiatives, decisions, and activities that research capacity is built inside universities (Crompton 2002:2). This study assumes that individual factors may include: the individual's training at post-graduate level, experience, self-esteem and ability to conduct research, the passion and enthusiasm for research, career ambitions,time devoted to research versus teaching, individual's desire to work with others (collaboration), etc. All these can be summed up into motivation as the source in determining self-efficacy and self-confidence. Previous studies have put emphasis on the role of intrinsic motivation in determining the effectiveness at the academic work place. Intrinsic motivation as the inner driving force that compels the individual to do what he/she does regardless of the environmental conditions can express itself in form of interest (passion) to do something. Lechuga (2012) conceptualises intrinsic motivation as self-determination; which expresses itself through autonomy, competence and relatedness. He goes on to define autonomy as “an individual‘s ability to feel as if his or her

15 This includes: Clark (1998), Cloete (2011), Cresswell (1985), Harle (2013), Maaassen (2010), Sanyal &Varghese (2006), and Sawyerr, A. (2004). For the lack of space, I could not present the Literature study in detail, I have therefore referred to the aforementioned authors and my main findings of the study are presented in 3.2, 3.2.1, 3.2.2, 3.2.3, 3.2.4.

behaviour or action is derived from the self rather than by means of coercion or any other external force, while competence is an individual‘s ability to feel efficacious or accomplished, and lastly relatedness as the ability of an individual to feel connected with others.” (Lechuga 2012:12). Hardré et al. (2011) use self-efficacy and self-determination as the motivational characteristics that are vital for explaining an individual's productivity. Furthermore, some studies mention intrinsic motivation, and use other terms such as self-confidence. Kotrlik et al. (2002) state that the faculty members' confidence in their abilities can be crucial for their research productivity.

Creswell (1985:7) summarises the attributes of the high research producers: possession of certain psychological and individual characteristics, possession of a “sacred spark” of motivation and desire, cumulate advantages during their careers through training in prestigious graduate programs, reinforced in their research by their colleagues through citing their works, and they are shaped and moulded by the norms of their discipline to publish in selective outlets.

It is in this same vein that faculty who exhibit a high interest in their discipline, have a higher chance of being more effective at their work by taking on initiatives that may boost their confidence, competences and community status. Such initiatives may include research skills training, creation or participation of research collaborations, prioritisation of research over teaching and applying for research grants regardless of the competition therein.

The individual researcher's qualifications are key to attainment of a high research capability. Bunting et al. (2014) in a study of eight African universities further stress the role of a doctorate degree for academic staff as a prerequisite for being productive researchers or heading a research group. They reveal that by 2011, of all the eight universities included in their project, only the University of Cape Town had above 50% of its academic staff with a doctorate. Makerere University had 43%, which posits that the remaining 57% may not contribute actively to producing a high quality research output.
The study makes another crucial observation regarding the 43% of staff that have doctorates: only 14% are in senior academic positions ,which are key to strengthening research training and management and later on productivity (Bunting et al. 2014:18).

Research at Makerere University is also affected by collaborations between academics at foreign universities and highly active individuals at Makerere University who are in senior academic ranks at one of the university's faculties. Some grants organisations have even preferred to working directly with individual senior academic staff instead of with the faculty administrations to run

research projects. Whereas this may be a question of a high level of individual expertise in terms of research and project management, which is a positive sign regarding the capabilities of the senior academics, it is also a question of the lack of management, including the absence of vibrant research groups (Cloete et al. 2011:159), (Freeman 2010: 38).

However, it is crucial to note that most of the studies around motivation and research productivity have been done with respect to single disciplines, for example, agricultural science, and business, and not across a number of disciplines and contexts. Disciplinary and contextual differences must be placed into consideration while studying the role of the intrinsic motivation in research productivity. A study by Monroe & Kumar (2011: 9) in Aksum University in Ethiopia on the attitudes towards academic research states for example that attitude was found to have no effect on research productive. These authors state that : "Faculties' inactivity and low productivity in academic research publications cannot be attributed to "a bad attitude" toward their peers, their institution or their profession."
Indeed, there seems to be scanty or no literature in the African context that focuses on how individual factors affect research productivity as most of the literature dwells on the environmental factors that influence research output in the African university.

3.2.2 Organisational factors

From the early stages of its long history, the university has been known to be a community of scholars. In this, the university reflects the unique human desire to collaborate, for example for seeking a solution to a common problem. Clark (1998) refers to the academic core of the university as an organisation as "the heartland which is still found in the traditional academic departments formed around disciplines, new and old, and some interdisciplinary fields of study" (pp, 3). The state of the academic heartland determines the level of change, progress, innovation, and entrepreneurship. Cloete et al.(2011 :26) allude the same organisational feature of the university using the term "academic core", which refers to the basic handling of teaching, research output and the production of doctorates who will fulfil the knowledge activities in the future. The strength of this core is key to the viability of knowledge production.
However, a university's academic core and activities to maintain and strengthen it can only be sustainable under an environment that is conducive and inspiring. The handling of knowledge becomes more productive in an environment where it is given the opportunity to grow, and be recognised and rewarded (Fairweather 1999:20). This can be seen from different reward systems that are used in different universities to motivate the faculty (McGill &Settle 2012: 177,178). Some

choices succeed in creating better research management structures, others give financial rewards in the form of higher remunerations, bonuses, while many of them resort to the traditional academic reward: promotions. All these incentives are directed toward keeping the academics' passion for their job burning. In today's world, where competition is rife and job mobility is high, universities revise their institutional research policies from time to time to compel the faculty to join them or stay part of their teams.

Organisational factors vary from one place to another depending on historical, political and other social traditions. Therefore, what may be effective in European universities may not be effective in African universities due to contextual differences. In seeking to study the organisational factors in a specific university, we accept the fact that these factors are influenced by the nature of the economy of the country in question, as well as its politics, governing traditions and culture, external relations with foreign agencies and industry (Cloete et al.2011: 8).
Despite the contextual differences, different scholars have identified common indicators of organisational factors in a university setting, especially regarding research productivity. Some of these are pertinent also to this study. Indicators of organisational factors can include the institutional support structure (monetary or non-monetary) incentives, research training, procedural simplicity to obtain grants, PhD enrolments and support policy, access to relevant academic journals and databases, support from the academic leadership including the heads of department, teaching versus research schedules, research collaborations and network levels and the institutional clarity on research expectations[16].

Based on the HERANA study's examination, Cloete et al. (2011) identify three major organisational factors that hamper research output and doctoral degrees graduation, the first of which is the lack of research funding as well as absence of a firm incentive system, secondly the huge number of masters' degrees that do not lead to PhD studies, and thirdly the supplementary teaching done by academics in multiple institutions to raise their income. According to the HERANA project some academics at Makerere University preferred to engage in consultancy work which seemed more profitably rewarding than engaging in supervision of PhDs as well as rigorous research required by most of renowned journals worldwide (Cloete et al. 2011: 36). A key observation from the study is that the University of Cape Town (UCT) receives a funding of about USD 45 000 per PhD graduate and USD 15 000 per accredited publication from the South African government, but this subsidy is not passed directly to the academics. It is instead injected into the general operational budget to fund teaching directly or indirectly. This means that the success in research output at UCT cannot be

16 Azad & Seyyid (2007) http://www.freepatentsonline.com/article/Journal-International-Business-Research/175065688.html

directly linked to the academics' salaries but instead to another form of incentivisation which has ensured that other elements that support research are rewarded, this can include: teaching, ICT, Journals and databases.In retrospect, UCT has been used in this case as a role-model for other universities.

The HERANA project highlights poor PhD support policy as one of the key problems linked to research productivity. Except for UCT, the HERANA case universities have basically not been transformed from undergraduate to postgraduate universities. One reason for this might be the nature of a large number of professional Master degree programmes that were neither motivating students to continue their studies towards thePhD degree nor giving them confidence to further their studies (Cloete et al. 2011: 37). The absence of incentives to fund PhD studies, as well as a lack of supervision capacity may be responsible for the low doctoral graduation rate. Most African universities are thus faced with a critical challenge of doctoral mentorship.

Many PhD students' lack of funding for completing their studies on time, is exacerbated by the absence of mentor-ship programmes within the universities that would have enabled senior academics to work closely with the junior researchers. The management of doctoral programmes is not coherent and focused. This is because most of the PhDs programmes are more like individual projects that one student takes on without the facilitation of the faculty. Many students either spend a very long period on the programmes or eventually drop out. This mentor-ship has only succeeded on PhD programmes that are donor-funded which is a challenge in itself as it does not ensure sustainability. Most senior academics are distracted by consultancy and project-oriented work, leaving little time for them to carry out any meaningful form of mentor-ship of junior PhD students' research activities (Sawyerr 2004: 223).

The third problem hinted upon is the competition of time between teaching in private universities and engaging in research. Among the universities that exhibited a weak academic core was Dar-el-salaam, where the academic staff engaged in teaching at a private university. This also resulted inmore financial reward to them, while reducing considerably their time for research activities.

Research management

The institutional situation with respect to research management can also be argued to affect research productivity in African universities. For the success of research projects, the institution has to pay keen attention to procurement, monitoring, certification of programmes, and management of research grants (Sawyerr 2004:221). In developed nations, the organisation of research covers

generally a wide range of structures from doctoral students in faculty research groups to National Research Councils or Foundations. There is a strong link between researchers, administrators and national policy makers. As key part of organising research, the establishment of centres of excellence within the universities to focus on national priorities can be found in many developed countries (Sanyal & Varghese 2006:8). However, in the African setting, a gap between the researchers and manager has affected research output. Many active researchers in African universities have preferred to work with foreign collaborators or on their own, rather than with colleagues in their own institution due to the absence of uniting structures, such as research groups, management problems within the university administration, and a lack of incentives. A related practice in African universities is that researchers prefer working on projects funded externally by western donors, rather than work in research groups in their faculty which has no financial benefits attached to it. This is partly blamed on the preferences of external donors working with individual African researchers rather than with faculties, which has led to 'silos' or fragmentations within the universities (Maassen 2010: 248).Overall this kind of weak institutionalisation of research discourages research capacity building. The efforts to institutionalise research in African universities have also met administrative institutional challenges, that is: bureaucratisation, and poor accountability of research funds (Sawyerr 2004, Freeman et al. 2010: 33,38).

In the same vein, consultancy is another key challenge that has hindered increased research productivity among the academics in African universities (Manuh 2007 in Maassen 2012, Mamdani 2011). This is caused by the tendency of consultancy projects to reduce the capacity for academic research at African universities (Maassen 2012). This aforementioned literature shows that due to the lack of effective research management in African universities, coupled with the poor incentive structures, many academics especially in the humanities and social sciences engage in short-term project-oriented consultancy work that that is funded by external donors.
Practically none of the consultancy work does translate into academic research publications. Most of the donors do not require academics to publish scholarly papers based on the projects they funded, but instead only required reports. To reiterate the words of Mamdani (2011:3) the consultancy culture presumes that “research is about finding answers to problems defined by a client usually in an externally driven project.” He further adds that “since academics read less and less, academic papers turn into corporate-style power-point presentations” (Mamdani 2011: 3).

However, critical questions arise, How much can consultancy be gauged? Where does the balance lie between executing consultancy work and doing academic research? Depending on different contexts and individuals, answers do vary. Harle (2013:88) pinpoints that despite the inevitability (because of financial reasons) of consultancy at African universities, it must not necessarily be done

at the expense of mentoring and supervising students.
On the contrary, consultancy is a core characteristic of an active and highly networking academic. If all consultancy projects that are undertaken by universities academics staff were well managed, and transformed into scholarly work, the practise would yield positive result in building individual and institutional research capabilities. Avital &Collopy (2001: 13) stress that the extent to which academics engage in consulting is an indicator not only of how much exposure they obtain in terms of recurrent trends in their discipline, but also enables academics to become more conscious about the theoretical solutions to practical problems.
In the same line of reasoning,Sawyerr (2004: 225) concurs that the skills gained from good consultancy, that is, data gathering, analysis, and verification, are also vital for academic research.

3.2.3 Funding

For any meaningful knowledge production to take place there must be a conducive environment. However, this can only be possible when there is a wherewithal. Funds that make the research activities at universities possible play a key role in form of remuneration of staff, capital investments, facilities including ICT equipment, libraries and laboratories facilitating study trips, conferences etc. According to Sanyal & Varghese (2006: 2), there is a high correlation between a country's level of investment into R&D and its scientific production. They further stress that developed countries invest a higher share of GDP in R&D and have even increased that share in the recent past. They are followed by East Asian countries, whose GDP share invested in R&D is higher than the SSA countries, which invest little in R&D. To make things even worse, the GDP share of SSA countries invested in R&D is even declining. This is widening the knowledge gap between the developed and developing countries (especially in SSA) further, perpetuating brain-drain, dependence on foreign aid, slow industrialization, and poverty, among other bottle-necks for development.

The UNESCO World Science report (2010) [17] shows that SSA countries have a persistently low investment in R&D, investing more public financing in other areas such as defence, health care, and general education. Of all SSA countries, only South Africa records 0.9% investment, coming close to the 1% target set by the African Union during its January 2007 Summit. Uganda contributes only 0.4% of GERD, which is far below the African regional target, with a meagre total of 29 researchers per million inhabitants (UNESCO 2010: 280-284). Uganda like most African nations suffered from

17 http://www.uis.unesco.org/Library/Documents/UNNESCOSR10-eng.pdf

the adverse effects of the Structural Adjustment Programmes (SAP) in the late 1980's, which the World Bank (WB) advocated. The programme advised governments to concentrate their public education investments in universal primary education, and the WB emphasized at the time that investment in higher education was a luxury. Such a policy curtailed all the funding that universities and research institutions would obtain to build their research capacities (Maassen 2011: 258).

Makerere University had relied heavily on public funding when in 1999 the SAPs were instituted. As a consequence, it had to diversify its funding using other means including, private student tuition, and the commercialisation of university infrastructure. At this point, funding for research did not survive the cuts of government funding. Today, funding for research and innovation has mainly been left in the hands of international funding agencies and development aid agencies such as: SIDA, NORAD, USAID, the Bill and Melinda Gates Foundation, the Carnegie Corporation of New York, NUFFIC, and JICA (Magara 2009: 72).

Cloete et al. (2011) reveal that Makerere has an insufficient income to fund research activities adequately. This is mainly due to the absence of public funding earmarked for research. Most of the Ministry's financial support for research was unpredictable and inconsistent (Cloete et al. 2011:158). This creates a research sustainability problem as most of the research work done is funded in form of projects and consultancies. As soon as the projects are finished, the funding as well as the research capacities that had been created collapse. One of the key recommendations of SIDA to Makerere University (Freeman 2011:39) on the administrative and financial management of research is the establishment of a grants and contract office to facilitate academics in obtaining and sustaining external funds without necessarily depending on their senior colleagues.

a) Role of donors in funding research

Key literature has stressed the bottle-necks of research funding based on external funders, in the case of African universities, where foreign donor such as western development aid agencies, set the research themes, which may not be in line with the national or institutional priorities. Maassen (2011) stresses that most donors focus on poverty eradication and community development as the major paths also of their higher education projects. While donor projects have benefited individual senior academics, who are usually among the leading academic staff in their institution, there is absence of structural coordination of donor funding. This works to the detriment of building research capacity at the African university, creating 'silos' or fragmentations (ibid, p. 248). Without central knowledge and coordination of the entire donor funding, the university cannot channel resources toward its specific knowledge production priorities. Another challenge resulting from this

uncoordinated funding, is the way through which it consolidates the consultancy practice, since academics rather receive funds directly from the donors than through the university organisational structure (Maassen 2012: 260).

The donors as key financiers rarely have any academic interests or goals attached to their policies on how the projects are expected to run. This is seen, for example, from the selection of themes, the individual partners to work with, the project periods, as well as the expectations. Maassen (2012: 259) adds that donor project activities cost the academics involved time that could have been dedicated to scholarly research. Furthermore, most donors do not require academics to publish any scholarly papers after the project, which stifles the knowledge productivity as an institution (Maassen 2012:259, Harle 2013:88).
The university is reduced to a donor funding proposal and report writing centre. Mamdani (2011) reiterates that the consultancy environment has changed the research arena at Makerere University into a more positivist and primarily quantitative one, which is geared towards "answering questions formulated outside the continent, not only in location but also in terms of historical perspective", adding that this has "displaced the fundamental practice of formulating the questions that are to be addressed."(ibid, pp 6).

Although it is stressed that without donor funding, research output would be affected adversely since there is minimal public investment in research, the overall funding of donors is also still at a considerably lower level compared to the funding level in developed countries. Maassen (2012) states that if donors could reserve 10 percent of their joint annual investments in African higher education projects to establish an Africa-wide research council, it would be a major contribution to strengthening their role in the development of the economy (Maassen 2011:261).

3.2.4 Research Culture

Although most of the literature on research productivity in Africa has concentrated on bibliometric analyses of research output, it is vital to recall that research like other higher educational activities operates in a socio-cultural setting, which does entail some form of culture. Clark (1983: 72 & 73) states that all organisations have a symbolic side, that is, a culture which among other things allows sharing common beliefs and stories. He stresses that this invisible and intangible side of the organisation has been underestimated, as researcher prefer to focus on more quantifiable sides such as budgeting.
Before we will analyse the research culture in the African university, we have to clarify what

research culture means in the framework of this study. Hill (1999) links research culture to organisational culture, this is due to the stark similarities between the two concepts. Key questions that are addressed in this context are, whether research is incorporated within the organisation's culture, or whether research is one of the sub-cultures of the organisation (p. 1).
Since it is difficult for many people to come to an agreement on what research culture means, it compels us to look at both the visible and invisible aspects that may pertain how people understand research in an organisational setting.

Therefore, Hill (1999: 2) uses the following set of indicators introduced by Schein (1985) to come to a clear meaning of the term research culture:
Observed behavioural regularities when people engage in research, such as the language and the rituals used. The *norms* that evolve in research groups or research environments. The *dominant research related values espoused* by an organisation such as 'applied focus' or 'leadership in qualitative research.' The *philosophy* that guides an organisation's policy towards research. The *rules* of the game for getting along with research in the organisation, " The ropes" that a newcomer must learn in order to become an accepted researcher. The *feeling or climate* about research that is conveyed in an organisation by the physical and administrative facilities as well as the way in which researchers in the organisation interact with others. All the above can be summarised into one definition of research culture:

"A pattern of basic assumptions about research invented, discovered, or developed by a given group as it learns to cope with the external and internal problems of research that has worked well enough to be considered valid and therefore, to be taught to new members as the correct way to perceive, think and feel in relation to research problems (Hill 1999: 2)."

Salazar-Clemena & Almonte Alcosta (2007), examining the ways to develop research culture, use the term research culture in a rather similar way to what we have already seen in Hill (1999). They use indicators such as: institutional research policies and agenda, departmental culture and working conditions, budget for research, infrastructure, collaboration with and access to other professions outside the institution, policies and guidelines on research benefits and incentives, research committee and publications.

In the case of this study of research productivity in Makerere University as a core factors influencing the institution's research productivity, we shall narrow our interpretation of research culture to: institutional research policies, departmental culture and research budget. The three indicators are more relevant to the context of Makerere and this being a master's thesis, it does not allow for extensive space to discuss more related indicators.

a) Institutional research policies.

Different research policies and institutional expectations shape the way individual faculty respond to their function with respect to performing research activities. Makerere University presents itself as a research university, with its core goals being:

1) To enhance knowledge generation and access in both science and humanities disciplines with a view to repositioning Makerere University as the research university of Uganda and beyond.
2) To promote generation of Science and Technology Innovations (STI) and their accessibility to Ugandan society with a view to improving the welfare of the nation (MUSF, 2007).

As shown above, the university's goals are research focused. However, Cloete et al.(2011) and Sanyal & Varghese (2006 :12) reveal that universities in developing nations have retained a strong teaching function and developed in practice a weak research function. Makerere as well has remained in essence an undergraduate university, paying much attention to teaching and creating more undergraduate courses and extension of infrastructure to accommodate the large number of private students. Mamdani (2007: 35) notes that between 1996 and 2000, the number of degree courses increased from 26 to 40, in a policy by the university senate that sought to create academic programmes that should be "market-driven, relevant and self-sustaining" (Mamdani 2007:35). This implies that more new degree courses were created to tap into the income revenue from the private tuition-paying undergraduate students. This led to a situation where the university focused on teaching in terms of increasing the number of lecturers, investing in teaching facilities and infrastructure etc. The implication was that it was indirectly distancing itself from its research goals.

b) Departmental research culture

Similar to many SSA universities, Makerere has a low research capacity, as seen through qualifications of the majority of the staff. In the 2014 CHET report, Bunting analyses the role of doctoral qualifications on research output in eight African universities. In the report, he shows that by 2011, Makerere had only 43% of permanent staff with doctorates and only three universities had a percentage above 50% that is: UCT, the University of Ghana, and the University of Botswana. There is not any internal mechanism of building Master programmes that are research-oriented enough to motivate PhD progression (Cloete et al. 2011) as most of them are professionally oriented. The absence of a firm PhD policy that begins from the basic departmental level and an effective incentive structures discourage timely PhD completion as well as joint research between students and professors.

The departmental research is also characterised by a lack of incentives directed towards research work, this is key in slowing the growth of research culture. The departments reward academics for the teaching roles such as: teaching private-sponsored students, marking and supervising examinations, extra-teaching loads but not for the research role (Magara 2009:76,77). This is an indication that teaching carries greater significance compared to research. With the introduction of tuition-paying students in 1990-1991, policies to reward the academics who were teaching private-sponsored evening class students became a common practice at faculties that had large numbers of such students. This was to shape the incentive structure towards teaching at Makerere University at the detriment of other roles such as research (Kwesiga&Ahikire 2006:38, Magara 2009:78).

Another crucial aspect of the departmental research culture at MUK is formed by the teaching-oriented personnel policies. These policies are more inclined towards managing and supporting the teaching role in the departments rather than research. All academic staff at MUK regardless of seniority are supposed to carry out in the first place some form of teaching, thus teaching is the primary role before any other role that academics choose to perform. Makerere University as a to a large extent an undergraduate institution focuses on satisfying the learning needs of the students. This is through departmental recruitment of more teaching staff and expansion of infrastructure. Such a culture is far from making research a priority. In relation to the teaching-oriented personnel policy, one can retain a position in any department even though he/she does not engage in research but rather teaching.

c) Research budget

The research budget is a symbolic endeavour by an institution that shows how determined the institution is towards earmarking a specified amount of funds towards the research function. This act in itself is embedded within the culture of research culture of the institution.
The amount of resources that an institution dedicates to its research function reflects highly on its research culture. The gap between the institutional rhetoric on R&D and actual practice is usually commensurate with the amount of resources earmarked for research.
According to Cloete et al. (2011) an analysis of the research output from Makerere University revealed that on average one academic publication per ten years was produced per permanent staff members. This is an additional indication showing that the university, which boasts of an 18:1 ratio of student to teacher, is much more focused on teaching rather than on research.
Makerere's budget depends on three major sources: government subventions, internally generated funds (IGF) from private students and university business projects, and international donors. The university has not managed to channel the government subventions in such a way that it would

benefit research since the remittances from government are partial, unsystematic and delayed (Bisaso 2011: 80). The university's major research funding comes from the IGF and donors, both sources that are rather unreliable depending on the economic tides and climate of foreign relations respectively. Further, evidence shows that the percentage of the IGF spent on research between 2000 and 2009 was inconsistent on a year to year basis averaging from 0.78% to 2.26% in 2003/2004[18].

The highest number of research publications between 2009-2012 came from the sciences namely research on HIV/AIDS (19%), Malaria (4%), water (3%), and ICT (3%), due to the reason that they were primarily funded by SIDA, NORAD, USAID and the Rockefeller Foundation.[19] This left the humanities and social sciences with only a handful of research-based publications, an indication that with the absence of donor funding, research output can be very low. This can be an indicator of the research culture that has been built on external funding and which lacks institutional support. The absence of a strong internal research fund to augment foreign funds undermines the university ambitions since it presents itself as a research university. The university should not depend on foreign aid entirely to achieve its goals.

Magara (2009) gives an account of how the government funding for the university budget has been shrinking overtime from the introduction of the SAP, which saw a significant reduction in public financing of higher education to the challenges that ensued as the university embraced the privatisation policy. The university budget, which is highly dependent on private tuition-paying students, has had no research funding as its priority. Magara further adds that although the university has attempted to diversify its financial basis through coming up with an investment policy, this has been marred by inefficient financial management and poor resource utilisation (p.7). Key recommendations in Magara's study (2009: 82) can be taken as pointers towards the major steps that can be done to improve Makerere's research culture:

> *(a) The university council should operationalise the University Research Policy that intellectual property at the university. Here, the university should encourage and facilitate the establishment of professorial research chairs in faculties and institutes. In addition, there should be better incentives for the remuneration of research activity in order to make research financially attractive by ensuring that staff receives a reasonable compensation for opportunity cost.*

18 Makerere University Self-Assessment Report, October 2013, pp 60
19 Makerere University Self-Assessment Report, October 2013, pp 67-73

(b) There is a need for the institutionalisation of centralised research management at Makerere to oversee publishing and scholarly writing. A core office should be set up, responsible for overall research co-ordination at the university level. Strengthening research co-ordination for better management of the research value chain is thus required.

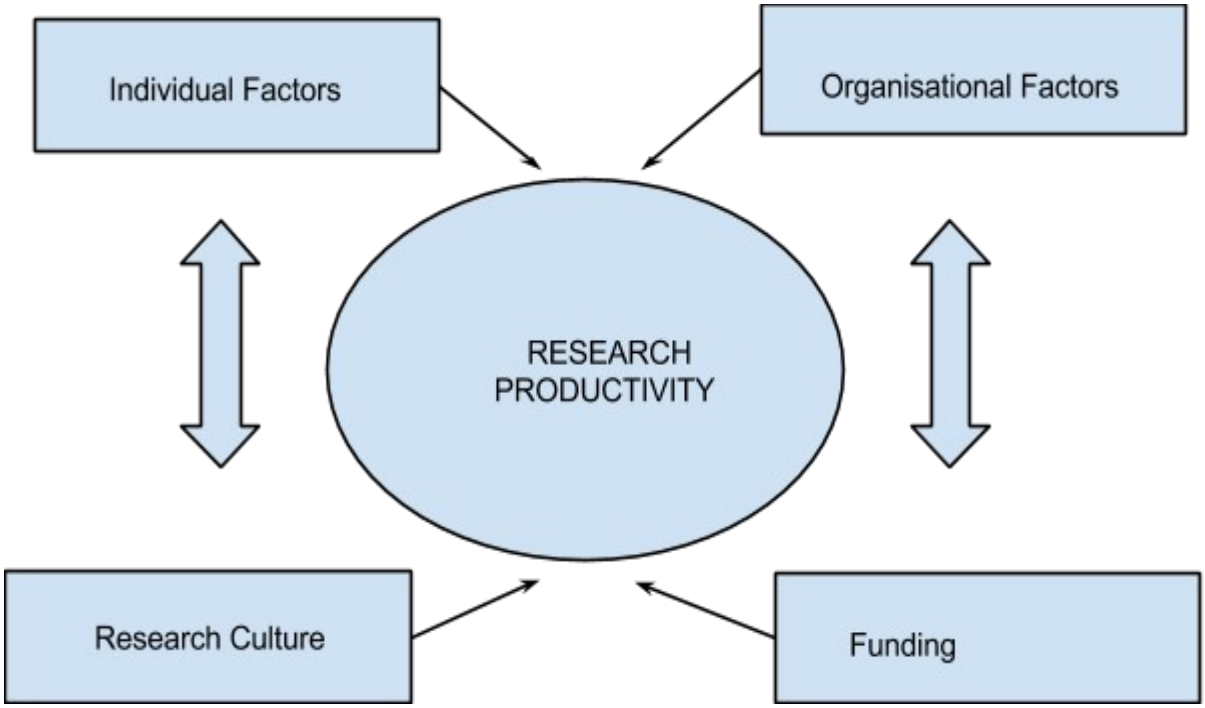
(c)Makerere University should explore ways to get its alumni and the private sector to increase funding to the university. This requires a thorough knowledge of its alumni. Thus, Makerere University should market its relevant research findings to the government and the private sector. In doing so, it should seek to encourage partnerships and development of R&D programmes with alumni and the private sector.

(d)Makerere University should create centres of excellence in basic and applied research, knowledge creation and dissemination through publication and otherwise, and work closely with the Government Research Agenda.

As many SSA universities, Makerere's research culture is not only impaired by a lack of financial support but a combination forces in the long term. Cloete (2011:37) asserts that a complex set of capacities and contradictory rewards within resource-scarce situations have to be studied in order to create a strong output-oriented research culture.

3.3 Analytical Framework

Fig.1 Factors influencing Research Productivity in African Universities.



As discussed in the previous chapters and presented in Figure 1, this study is focused on the main factors that affect research productivity in African universities. This study is more exploratory than explanatory, Figure 1 represents our exploration of the four sets of factors, namely individual, organisational, research culture and funding. Research productivity is argued in this study to be influenced by all four factors. Figure 1 is not meant to highlight the strength of any of the four blocks exclusively, but to show that all these factors are working mutually to influence the research productivity at African Universities and thus also at Makerere University.

Individual factors have been placed on the same side as the research culture; this is due to the strong relationship between an individual staff member's preference for research and the institutional belief system or culture, with respect to research. In this study it is assumed that the strength of a university's research culture matches the strength of the beliefs and attitudes of individual staff members in the university and its departments. Obviously, it is important to emphasize that the synergy between the individual factors and research culture alone may not be enough to create an impact on the research productivity, which necessitates the two other key factors: organisational factors and funding. It is assumed that without supportive organisational and funding context, the first two factors' effects might be limited.

The attitudes of individual academics and their beliefs towards research are varied and dynamic, some will be more diligent, entrepreneurial, career-oriented, whereas others will be less actively research-oriented, and more interested in educational activities. However, the organisational factors and the funding environment tend to be stable across the African university. The policies towards managing and funding research are usually under a single institutional umbrella. Changes towards individual factors and research cultures are therefore harder to attain as compared to organisational factors and funding. This is what makes the relationship between these four factors, both complex and (sometimes) contradictory.

This analytical framework is indicative of the assumption that the factors that influence research productivity are cyclical, and therefore giving all the four factors keen attention is a requisite for improving research productivity in the African university. As discussed in the literature reviewed, most African universities find themselves in a challenged position to at least one if not all of the highlighted factors.

CHAPTER 4: RESEARCH DESIGN AND METHODOLOGY

4.0 Introduction

Any research activity is dependent upon the methods that have been used to gather and analyse data accurately.

May (2001: 1) states that research methods as a central part of the social sciences, contribute to an important part of their curricula and provide a means through which their intellectual development is enhanced. He further adds that both innovative thinking and a meticulous attention to the detail of data gathering inform the practice of social research.

Bryman (2012: 19) perceives social methods as a link between the way in which social scientists envision the connection between different viewpoints about the nature of social reality and how it should be examined.

As members of the society understanding research methods is a necessary condition for understanding the social world (May 2001: 2).

4.1 Research Strategy

Research strategies are practical steps that researchers choose to employ while trying to answer their research questions. There are two major research designs: qualitative and quantitative. Both strategies employ different methods and carry different implications for the overall research process.

Bryman (2012: 35) states that although many authors have used "measurement" as the key aspect that differentiates the two, others researchers thinks that the differences between the two go even much deeper.. He further gives a clear distinction between the two, stating that qualitative research emphasizes qualification in collection and analysis of data, while quantitative strategy emphasizes quantification in collection and analysis of data. Researchers are cautioned against forming stark distinctions between the two strategies this is due to the fact that the complex and dynamic nature of social research.

In this study, the major design will be the qualitative design, since the study seeks to understand the perceptions of faculty staff towards the factors that influence research productivity at Makerere University. The rationale of using a qualitative research strategy in this study is the desire to seek subjective meaning and experience of the university setting, through studying the faculty's interpretations of their own setting as regards research activities.

It is therefore vital for us to use the natural context (the university) to learn to see the social world as it is seen by those being studied (faculty).In that way we attempt to understand the reason why the academic staff at Makerere choose to engage in research publication (or not). As Kelly (2011: 19) stresses, qualitative research strategies are more informed by an epistemological interpretivist tradition, which reveals the meaningful aspects of cultures, in this case the analysis of Makerere's research culture. An interpretivist sociological explanation will provide a meaningful account of the action concerned (ibid: 20).

4.1.1 Research Design

The design that this study is based on is a case study design. There are many different reasons for this. Case studies entail the detailed and intensive analysis of a single case (Bryman 2012: 66). Hagan (1993) &Yin (1994) as cited in Berg (2001: 225) state that the case study approaches may "focus on an individual, a group, or entire community and may utilise a number of data technologies such as: life histories, documents, oral histories, in-depth interviews and participant observations."

In this study Makerere University is the prime case of our focus: it is the biggest and second oldest higher education instituton in Uganda. It is also an interesting case since it is Uganda's 'Flagship university'. By the term 'flagship' we refer to a university that is rated number one in the country in terms of knowledge and development (Cloete 2011: 26). Makerere produces the highest number of research publication as compared to any university in Uganda, and most of these are directly connected to key national focal areas: health and agriculture. This university profile therefore matches perfectly with our area of study: research productivity. Research productivity is a detailed phenomenon therefore the researcher chose to study it in relation to one organisation setting which is Makerere University.Makerere University is what Gerring (2007:91) calls a typical case, which not only provides insight into a broader phenomenon, but exemplifies what is considered to be a typical set of values, given some understanding of a phenomenon. The study also uses a comparative aspect of design since the researcher is to compare research productivity in two different colleges: Education and external studies, and Agricultural and environmental sciences.

4.1.2 Reliability and validity

In qualitative research reliability and validity are complementary concepts, which are used to refer to dependability or consistency and authenticity respectively. Neuman (2000: 170) emphasizes that qualitative researchers want to be consistent and not 'vacillating and erratic'. For reliability in this study, the researcher used different methods, that is, interviews and document analysis in a consistent manner to explore the perceptions of the faculty on the subject of research productivity. Reliability in qualitative studies carries the value of a changing or developing interaction between the researcher and what he/she studies (ibid: 170). In the case of Makerere University, the researcher had diverse experiences from the interviews that were conducted among the different academics and the university leadership, most of them evolved from one faculty to another, which is true to the dynamic nature of the qualitative research form of inquiry.

On the other hand, validity has been used to imply fairness, honesty and balance, as key features when giving an account of social life from the view point of someone who lives it every day (ibid : 171). It is divided into internal and external validity, where internal validity means whether there is a good match between researchers' observations and the theoretical ideas they develop (Bryman 2012: 390). Qualitative research usually scores high on internal validity since it is easier to show the relationship in a single case than in multiple cases. External validity means the degree to which findings can be generalised across social settings (ibid: 390). This has been regarded as a problem in qualitative research since using only a few cases to analyse a more general phenomenon can be seen as a weakness (Gerring 2007:43).

4.1.3 Study setting and unit of analysis

The study was conducted at Makerere University as the prime case institution since it is the largest knowledge-producing and second oldest public higher education institution in Uganda.
The research specifically targeted two college: Education and External studies, and Agricultural science and Environmental sciences as the environments from which to investigate research productivity. The researcher used the university as the major unit of analysis. Under the university, the schools or colleges were selected to narrow down the level of analysis.

The study employed a qualitative design to collect and analyse data. The methods of data collection were: semi-structured interviews and document analysis. The study used respondents from mainly

two selected colleges: agricultural science and education. The selection was motivated by validity issues, as it was the aim to find a balanced sample that represents both a science college and humanities college. This was also done in response to the assumption by key studies such as Becher (1989) which highlight the role of disciplinary differences in knowledge production, which potentially also create differences in research productivity. Overall nine respondents were interviewed, six academics (three from the agricultural production department and three from the arts and social science education department), three administrators, two heads of department/deans of the two faculties in question, as well as the research administrator of Makerere University. All the academics that were selected had a PhD as the highest qualification. This is the standard qualification in many research universities for one to qualify as a lecturer, but also to possess research proficiency. In seeking to understand research productivity through the eyes of academics, it is worthy to use them as the lowest level of our analysis. According to Neuman (2000), researchers use levels and units of analysis to design research projects, and be aware of them, to avoid logical errors (p.134).

4.2 Methods and procedure of Data collection

Methods are the techniques researchers employ to collect data that arerequired to answer their research questions. Methods of data collection differ from one context to another: discipline, sub-field, and topic (Gerring: 2007). In the qualitative research design, some methods are less structured and thus emphasize a more open-ended view of the research process. These can include semi-structured interviews. This study employed semi-structured interviews and document analysis as the key tools of inquiry. This is because aspects such as: perceptions and attitudes, which differ from one person to another, can be studied more deeply using social interaction and more flexible techniques.

The process of data collection took place between the first week of March 2014 and the last week of April 2014 at Makerere University in Kampala. Prior to the data collection, a research proposal was discussed and later approved by the supervisor. Key respondents were then contacted by email early enough about their availability for the interview process. The researcher being an alumnus to that university found access to different faculties and offices without much difficulty. Semi-structured interviews were conducted using two interview guides: one for academics and another for research administrators. Open-ended questions were used to elicit responses from the participants, because as Bryman (2012) notes, the strength of open-ended questions lies in the freedom that they offer to respondents, since the respondents can answer on their own terms without being forced.

4.3 Data analysis

Data analysis is one of the most daunting tasks in the research process as the researcher attempts to make meaning out of the large corpus of data that has been gathered. Bryman (2012:13) reiterates that unless the researcher reduces the amount of data collected, it is more or less impossible to interpret the material. Data analysis in qualitative research strategy can take on a standardized form to organise raw data into categories using themes, concepts and other similar features. The technical term that has been commonly used is coding. Neuman (2000: 421) asserts that coding consists of two simultaneous activities: mechanical data reduction and analytical categorization of data into themes. Neuman further illustrates the three stages that can be used in the process of coding based on Strauss (1987): open-coding, axial coding, and selective coding. open-coding is the first stage after data collection, where a researcher attempts to find themes and organise the raw data into different categories. At this point it is worthwhile for one to discern the abstract concepts and specific details from the concrete data (ibid, p.422).

The second stage is the axial coding, in which the researcher focuses on the actual data, organising ideas or themes basing on the initial coded themes obtained at the first stage. Miles and Huberman (1994: 62) as cited in Neuman (2000: 422) caution that, “codes should relate to one another in coherent, study-important way: and should be part of the governing structure.” The last stage of analysis is the selective coding. At this point the researcher has already identified key themes from the data, s/he then starts to make comparisons and contrasts from the data, organising and reorganising specific themes and finally interpreting and elaborating the results. In short, data analysis involves examining, sorting, categorizing, evaluating, comparing, synthesizing and contemplating the coded data as well as reviewing the new and recorded data (ibid, p.426).

4.4 Sampling Procedure

Sampling is an inevitable feature of most if not all kinds of social research and thus constitutes an important part of any inquiry (Bryman, 2012). This is a conscious decision that is taken by researchers depending on the research strategy that t he/she is using. Unlike the quantitative research strategy, which mainly employs the random sampling, qualitative research uses purposive sampling. This is primarily because the purposive sampling enables researchers to capture individuals or groups which display certain features (typicalities) that are embedded within the research question(s)(Maxwell 1998: 235).

This study employed purposive sampling, where the researcher selected academics from the College of Education and External studies, and the College of Agricultural and Environmental sciences, three from each of the colleges. Two academics administrators (deans) from each of the colleges were also interviewed, as well as a research administrator. The researcher conducted a total of nine semi-structured interviews. The academics that were selected were PhD holders as one of the criteria, some actively publishing, while others not. The research used the PhD rank as the criterion based on the HERANA study which found that the doctoral qualification among university academic staff had a correlation with research output and training of PhDs (Cloete et al. 2011).

The researcher selected the two different colleges based on Becher (1989:153) as cited in (Tight 2003: 172), where he classifies different disciplines, into hard/soft, pure/applied in the cognitive realm and convergent/divergent and urban/rural in the social realm. Becher emphasizes the identifiable pattern found within the relationship between knowledge forms and their associated knowledge-communities. In this case different faculties carry out research in different ways. Sabharwal (2013) concurs that the nature of disciplinary differences may contribute to differences in research productivity citing notable factors such as: article length, length of publication time, number of grants, co-authorship rates, and the ease to obtaining data, which usually work in the negative direction for the humanities compared to the natural science disciplines.

4.5 Ethical considerations

In this study, the researcher was cognizant of the ethical principles that govern the research process. Regarding this salient issue, Bryman (2012) mentions, the four major principles to keep in mind as a researcher: harm to participant, lack of informed consent, invasion of privacy, and deception.

Prior to data collection, the researcher notified all participants in time for the interview by emails clarifying the rationale of the data collection and requesting for consent to conduct the interviews. The participants agreed to take part in the interviews and did it on an entirely voluntary basis without coercion or intimidation. All activities in the course of the data collection e.g. audio-recording of interviews were first approved by the participants hence they knew that their responses were being recorded.

The researcher pledged not to reveal any of the respondents' personal details like names. This was done to encourage the principle of confidentiality or privacy. This implies that no personal information will be used in the discussion of the findings or any other part of this study. Finally, the researcher made known to the participants the purpose and possible use of the research so that deception would not occur as an ethical liability.

CHAPTER 5: PRESENTATION AND ANALYSIS OF THE FINDINGS

5.0 Introduction

The preceding chapter has presented the methodology underpinnings of this study, beginning with the choice of the research design, methods, the rationale of using the different methods to the ethical considerations of the study. This chapter will the present and discuss the findings from the study. The analysis of the findings in relation to the research questions will be done in this chapter as a way of understanding the concepts that have been discussed earlier in the literature review.
First, a summary of the outcomes of the findings will be laid out before the discussion delves into the relationship between the findings and concepts from the literature reviewed.

5.1 Research development at Makerere University

As we attempt to understand the research development at Makerere University in the last ten years, a summary of the findings vital in elucidating the current state of research and its productivity:

In the last ten years, MUK has seen an increase in donor-funded projects as well as collaborations at Makerere University. Donor funding of research amounts to 85% of the university's total research budget. Donors have invested mainly in priority areas of their choice, and especially in science related areas such as: malaria, HIV, climate change, livestock and crop production. SIDA is the largest donor and is keen on creating research capacity through a more direct involvement such as funding the university self-assessment reports, and joint PhD supervision. When donors channel their funding through the university graduate office and university account, this has been affected by bureaucracy and inefficiencies in the university offices such as: the accounts and procurement office, which has discouraged some academic members to apply for grants.
Most respondents acknowledged that both internal and external funding is competitive and hectic, with some opining that there is technical language that is meant to be used in external grant applications, which may discourage inexperienced researchers.
The respondents highlighted cases of bureaucracy and inefficiency within institutional structures that are in charge of facilitating academics to process research grant such as through issuing accreditations, letters of recommendations, and procurement of research equipment. This is a key

hindrance for academics to apply for research grants especially in those cases where it is required them to use the university structures to obtain the funds.

There is no form of incentive structure in place with respect to research. Research is seen as one of the duties of the academics; however, it is not rewarded exclusively. There are no awards such as: allowances based on published articles, conference funds, travel allowances. The prime motivation for the staff to carry out research is basically to obtain promotion from one rank to another. The second motivation is the personal financial benefit that is achieved from working on research projects funded by donors. This makes academic staff members especially in the highly fundable scientific areas acquire new projects and publish extensively.

The government earmarks only a small percentage of public funding for research, however this goes only to a few scientific areas. A case in point is the Presidential Initiative on Banana Industrial Development (PIBID)[20] with respect to the agricultural science college, this is one of the few direct forms of state funding towards research. Most of these state funding initiatives have been characterised by inconsistency and lack of clear coordination with the university's priorities.

Makerere University presents itself as a research university, and to fulfil this mission a Directorate of Research and Graduate Training (DRGT)[21] was established in 2010, which facilitated the university to come up with a research policy as well as a research agenda. Although the office is still in its infancy, it is a positive sign in the right direction the university indicated it wants to take. The office is key in managing donor-funded projects, overseeing PhD and Master students' academic affairs, publicising research grant calls, as well as negotiating with different research priorities of the university.
The presence of the DRGT has not necessarily translated into a grass-root mechanism that can ensure research management at the departmental level. This has led to the absence of research groups as well as a strong policy aimed at staff that have a PhD but choose not to engage in research activities.

The research at MUK is mainly characterised as being an individual-driven and/or donor-driven exercises. Individual-driven refers to individual academics engaging in research in collaboration with researchers abroad or on their own but not within research groups. Donor-driven refers to research undertaken as a response to donor calls for applications in specific themes rather than personal initiatives based on the academics' disciplinary specialities.

20 http://www.pibid.org/
21 http://rgt.mak.ac.ug/

MUK has no research fund that is apportioned directly towards research activities from its own budget. The money that is meant for research has been transferred to the funding of PhD education for different academic staff throughout the university as a means of building research capacities, skills and competencies among the staff.

PhD support and mentorship is a novel idea at MUK. So far only the department of Gender and Mainstreaming has started a formalised PhD mentorship programme known to the DRGT. It is this sort of programme that the DRGT seeks to reproduce throughout other university departments. PhDs students in Agricultural science have been found closely working with their supervisors in projects. The main reason for this is because these PhD students are on scholarships from donors. This is not the situation in the humanities or in the College of Education. There PhD students who are self-sponsored have been found to be unavailable after having fulfilled the initial stages of the programme which necessitates them to attend classes. The reason for this is that they are employed and therefore do not find time to do research or work closely with their supervisor and hence not many have completed their programmes on time. The DRGT has come up with a new policy that compels them to publish at least two papers in the course of their programme before they graduate, an initiative that is intented toenhance research productivity. The same policy requires them to complete their course in a span of at most six years or they face dismissal. This is a way to discourage self-sponsored student from prolonging their courses.

The Deans as well as Heads of Department are mainly overseers of teaching rather than research. They play a more advisory role as pertains to research. They encourage faculty members to engage in research and disseminate information about different incoming calls for grant application, but do not take any action towards a member of staff that does not engage in research. In sum engagement in teaching is still the prime role of the academics and the deans ensure that it is fulfilled first.

Most respondents were of the opinion that journals are a vital channel for publishing their research output. This was the view across disciplines, with many expressing a positive view towards external or international journals as being more relevant to their research career in terms of recognition. At the same time, many academics expressed disdain towards publishing through their internal departmental journals. They expressed fears that papers published via the internal journals are usually disrespected by the appointments board during promotion processes. This is attributed to problems regarding the peer-review mechanisms. Most of the journals that are stable and strong in terms to recognition are donor-funded, a case in point is the African Crop Science Journal in the school of agricultural sciences. The sustainability of journals is largely dependent on the existence of funding.

5.2 Research leadership and management at Makerere University

The leadership and management of research in the university have traditionally been in the hands of the smallest unit of the university the department. Individual academics have constantly endeavoured to initiate different knowledge themes for research not only to enlarge their knowledge boundaries but also achieve their career ambitions. Today in a fast changing world, as Taylor (2006 :10) stresses, it is no longer possible to leave research management in the hands of individual academics, due to the need to agree on priorities, taking into account issues such as funding, quality, institutional profiles, socio-economic knowledge needs, optimum resource-allocation, and the application of legal and ethical controls.
Kirkland (2010: 316) further reiterates that abandonment of the laissez-faire policy of managing research has been taking place over the last twenty five years in universities around the world. Adding that the key research management ensures that the staff is able and motivated to conduct research, to meet the needs of stakeholders (including the host university) and to have results effectively utilized.

At MUK, research leadership and management were positionedin the school of graduate studies which was established in 1994, and later (2010) became the Directorate of Research and Graduate studies (DRGT). Most of the negotiations on donor research projects and funding are channelled through the DRGT, which can be perceived as a response to external forces, such as funding, driving research. Kirkland (2010) states that universities are motivated to take on this new form of managing research as a step towards aligning their competences to the external environment. It is a force from outside the academic institution and to some extent the higher education system as a whole, he adds (ibid, pp 316). However, It isnoted that most of this management of research has not been decentralised to enhance structures at the basic level of the department. When respondents were asked how they felt about the state of research in their department, one of them stated that:

We publish for promotion, and we look for all means of publishing, and not necessarily from Makerere; some use their own money to publish, but many of us publish with colleagues from other universities, who have access to these journals. So I write an article, get a friend in some university and publish, Makerere doesn't support its staff, on record as far as publication is concerned. Makerere is like a person who wants to milk a cow but does not feed it- but it insists we have to publish, and if you say where is the money, they say that is part of the game, you have to look for the money, do research and publish.
(Interviewee: Senior-Lecturer in Department of Social Sciences and Arts Education).

The above response reveals the presence of research at department level albeit confronting key setbacks such as financial and resource constraints, but mainly the organisational structure at the bottom to research priorities as well as garner resources for academic staff. This interviewee claims that the academics have to individually search for funding as well as for networks in order to be able to publish their academic work and on the basis of their publications, and achieve promotion as their prime goal. However,the absence of departmental research management, the motivation to engage in research is narrowed down due to individual ambition towards progression in rank rather than knowledge production on commonly agreed themes in the discipline. When one interviewee was asked about the presence of research groups in the department, she noted that:

I think networks emerge naturally, there are people that you are comfortable with naturally so you get together with them and write a paper, you invite them they invite you, we attempted to formalise them in meetings, where we wanted to form clusters and people who are going to write on this and that but it never took off, we were all very busy, and it seems like when structures are put from above or outside, they seem not to work, but those that are from within, people are comfortable working with each other
(Interviewee: Senior-Lecturer- Department of Agricultural Production).

The interviewee above reiterates the individual pattern of research within the university departments, where research groups are non-existent, as a result of weak management of research at the basic level. This results in high fragmentation throughout the institution. The picture painted exhibitsthe lack of effective research management and research structures at various levels in MUK. One of the consequences is that it is practically impossible in Makerere University to identify common research interests and themes. Another consequence is the lack of interdisciplinary research cooperation.

The above views are from the side of the academic staff at MUK. When it comes to the research management and administration perspective, one interviewee from the university's research administration indicated that the following has been done by the university to support the research activities of the academics:

First of all, what we have done is to make sure that we have had an environment that is conducive for research, there were no policies. You see where there are no policies or guidelines, it is hard to do anything in a systematic way, so we had to develop the policies, the research and innovation policy, the intellectual property management policy, we also had to review the research agenda of the university, we have now a new research agenda. That is now as far as the policy environment is

concerned. Of course we had to establish other guidelines to operationalise the policies. And thirdly, the university transformed itself into a collegiate university, and the former school of graduate studies was transformed into a directorate of research and graduate training divisions; the division of research, innovations and knowledge transfer partnerships and the division of graduate training.
(Interviewee: Research administrator)

While these initiatives are vital for the development of a supportive research environment for the research activities in the university, they are positioned at the top level of the university hierarchy. When asked about the direct and specific interventions regarding facilitation of research in the departments, the administrator further added:

We recognise that some of our members of staff may not have the requisite skills to write fund-able proposals, so we instituted what we call skill enhancement courses these include: research management, grant proposal writing, scholarly writing, and communication skills, we run these every year to help our staff improve on their skills in proposal writing as well as communication skills. So we have trained quite a bit, and many people are writing grants and winning grants, people are now quite engaged compared to where we were many years ago.
(Interviewee: Research administrator)

As indicated by this interviewee,the role of the university research office does range from research policy to training, representinga top-down structural process of managing research from administrators to the academics. This notion intrigued the researcher into seeking for more answers from the departmental heads as far as initiatives and incentives instituted for the academics in the department. This is what one Dean disclosed:

A lot of money generated by the university for research goes toPhD training. So, many people do not get money for research for the sake of research from the university, but if money is going to be awarded, it is going to be on a competitive basis, there is nothing like education, we have given you ten billions for research, no there is nothing like that, or. If there is money, they will call for applications or proposals on anything, they won't even close it, it can be open to an individual or team, and then they vet it, if it is successful then they give you the money. Individual units do not receive money, which is specifically focusing on research remitted on their account, they do not do that, so it is basically graduate school that coordinates the research activities in whole the university.
(Departmental Administrator- Education faculty*)*

As revealed by the interviewees, the research policies and organisation of MUK are centred around the DRGT office. The major role of this office is to oversee funding of research projects, and training and encouraging academics to publish, representing a positive attempt to enhance research capacity. However, these attempts have not been decentralised and as a consequence not translated into key incentives for research at the departmental level. Only a few ambitious individual academics are successful in the competition for the meagre and occasional research funds from the university as well as those from donors. There are no internal structures to motivate those that are neither seeking promotion nor financial gratification.

5.3 Funding

Funding of public universities has historicallybeena government role. Makerere University as the largest higher education institution in the country has enjoyed state funding (basic block grants) of its budget primarily the staff remuneration and the infrastructure development, as well as state-sponsorship of talented students. By 1986 and 1991, Makerere started facing the adverse effects of the state budget cuts towards higher education. These cuts were a response to the new Structural Adjustment Programmes (SAP) advocated by the World bank at the time (Magara 2009: 70). This environment left the university with no other options, but to diversify its income through the introduction of tuition fees, for-profit university projects, reliance on donor funding and donations. The research arm of the university was not spared from the cuts from the public coffers; it therefore remained mainly in the hands of the donors and especially: SIDA, NORAD, Carnegie and Rockefeller foundations. Responding to the question how they funded their research work, one interviewee stated:

That one is very much wanting, much of it is really individual initiative, while when you win a grant the university takes a proportion of it for administrative costs, but that percentage is not ploughed back into supporting the research function at the university. In terms of support it is not much.
(Senior lecturer- Department of Agricultural production)

The response above denotes the increasingly complex funding environment of research that academics have to manoeuvre in order to achieve their academic aspirations. This interviewee not only reveals that the financial support from the institution is being reduced, but also hints on the challenges that encumber the internal process of obtaining research funds. The percentage deducted from grant money as overhead cost by the institution has not been reinvested to support research in the view of some academics.

Cognisant of the fact that internal grants are usually announced by the DRGT, tried to find the opinion of the academics about the effectiveness of the application process for internal grants was addressed in the interviews and this is what one respondent had to disclose:

I think hectic, and most of them are too competitive for example for a post-doctoral, the graduate school had some funds to enable newly graduated PhD carry out research or post-doctoral research, unfortunately the process was not as smooth as we had expected. First and fore most the list of beneficiaries had professors who had graduated so many years ago, and so many of us who had just freshly graduated, thought that was not fair on our part, because the call mentioned post-docs and fresh PhD graduates. It was too competitive and somewhere the directorate did not follow what it had stipulated in the call.
(Lecturer- Department of Arts and Social Education)

The interviewee reveals that the internal mechanism of the DRGT is yet to make the internal research grants as easily accessible as it would be expected, since the academics are in full proximity and knowledge of the research office. It also raises the question of clarity on the guidelines for application for internal grants are for academics.
Another academic asked about the state of funding for research in the university gave the following answer:

I remember when I had just joined this university I think around 1995, I joined in 1993, but in 1995 the university had taken it upon itself to encourage people to go out and do research and it would provide competitive grants, where each person would write a proposal in their area of interest and then the university would support that, but that funding is now no more. So people have to look for donor funding.
(Senior-lecturer- Department of Agricultural production)

Donor funding is core to sustaining the research activities at MUK, as revealed in the narratives of the interviewees but this has not come without a price. Although many of the academics highlighted the positive side of the donor support, they had their reservations as well, as it is pointed out in the following quote:

Donor funding is good because we are able to get money to do research, but what it means is that it drives the research agenda. We only do research on what the donors think is important, and it prevents us from deepening as researchers. We want to specialise in an area, as you do research, new research questions come up, you may want to go further into a new step in your discipline, but

I because you are dependent on donors and responding to calls, well the person who designs that call in New York, may not know really what the priorities are, so the research agenda is driven by the donor which is to the disadvantage of the local people.
(Interviewee: Senior-lecturer- Department of Agricultural production)

This implies that academics,are dependent on the donor funding priorities which is inevitable since there are no internal mechanisms to drive team work and disciplinary themes. In terms of disciplinary interests, the donors are more inclined towards funding science and technology themes which has left the researchers in the humanities and social sciences with fewer funding options. One of the departmental administrators commented on this as follows:

In terms of research and projects, more funding from the donors is in the science, very, very few donors come to the humanities, in the last 10 years NORAD, SIDA, as the biggest donors have been going to the science disciplines like food science, malaria, tropical medicine, HIV. So they (science researchers) are into research continuously, nobody is giving money to me, to go and investigate the different methods of teaching, no one is bothered, so again it is related to the interests of the people funding our research.
(Interviewee: Departmental Administrator)

The debate on donor funding for research cannot be concluded without hinting on the fears that linger especially on the topic of sustainability. The question is what if the donors choose to withdraw the funding due to changes in their policy? This implies that the university research capabilities will be incapacitated. An important issue in this is the extent to which the political environment of the current government on donor decisions concerning research funding:

The major challenges today is when you want to carry out research, you need funds, and we find our development partners like SIDA, NORAD, FORD FOUNDATION, ROCKEFELLER, have been very supportive as far as research is concerned, but the major challenge now is to do with the Anti-homosexuality bill[22], many of these partners are now withdrawing, so we do not know what might happen tomorrow or the next five years.
(Interviewee: Lecturer -Arts and Social Sciences education)

Some donor countries like Sweden[23], whose governments are critical about the state of human rights

22 http://www.amnesty.org/en/news/uganda-anti-homosexuality-bill-must-be-scrapped-2013-12-20
23 https://www.devex.com/news/aid-freeze-deepens-after-uganda-s-anti-gay-bill-82978

in Uganda, have responded by withdrawing foreign aid which has been key to funding research in areas such as HIV/AIDS, and malaria.[24] Unfortunately higher education sector does not work in a vacuum, it works in an environment that is intertwined with other key policy sectors, and thus not immune to political decisions that may have a negative impact on higher education.

5.4 Individual factors

The art of knowledge production is primarily a result from individual inspiration, motivation and labour. This individual endeavour is key to what is attracting like-minded people to form the basic units of the university. At MUK the research capabilities of individual academics vary greatly, with some leading multiple research projects and others are concentrating only on teaching. Productive academics have exhibited specific attributes such as self-motivation, ambition to rise up the career ranks, highly connectedness among their peers, getting a firm ground in their discipline in terms of training, grants applications, among other key attributes. One of the interviewees responded in the following way to the question on how motivated the academics are for engaging in research:

I am very motivated, I find it rewarding, it is a multi-dimensional kind of thing in terms of benefits. For the last three to four years I have discovered that when you have a research grant, you can afford to really devote attention to your students in terms of mentoring more intimately, and you are more satisfied with the product that you turn out. So I think I am more motivated, it has not been like that until when I started actively writing grant proposals, I have discovered that now I can go to the field and supervise a student, see the data that they produce, since I was part of the design process, I supervise the entire process, but that is because It is funded, whereas in the past when I look at my career path, when I had just started here in MUK, I supervised many graduate students but I was never in the field with them because the university did not support me to go there.
(Interviewee: Senior Lecturer -Department of Agricultural production)

This response reveals that it is vital to possess research capabilities and relevant skills to apply for research grants. However other institutional factors such as the access to funding are key to boosting one's motivation to succeed as a researcher.

Another respondent in the same department, was also asked on how motivated she felt to engage in research stated:

24 http://www.scidev.net/global/hiv-aids/feature/uganda-s-anti-gay-law-may-threaten-its-research.html

Sometimes you really need to be interested in research to get into it, in fact for me, I am only interested in teaching. If it wasn't that I had to do research to get promoted, for me I would just sit here and teach. I see I have passion to teach but I don't have that of researching, that is why I have told you that I don't even take the initiative to apply for any calls. But now we have a taught PhD, and I enjoy myself teaching students, creating materials and going with them on activities, I love it. So for research I just go for the sake.
(Interviewee: Senior-Lecturer -Department of Agricultural production)

The two academics are contrast concerning their research motivation. The former is highly motivated to engage in research as well as apply for research grants. Presence of funding has facilitated her job as researcher and she is blunt about it. While the latter, the researcher has no interest in engaging in research activities, she has more interest in teaching and working closely with PhD students in different activities. She confesses that promotion is the only factor that has motivated her to carry out research. The interest to respond to calls for research grants is as well lacking, which reveals that even in the presence of funding, individual determination plays a crucial role

The degree to which academic staff can create networks and collaboration is instrumental to their research productivity. Networking and collaboration with academics from other universities are among the skills that is inevitably needed in this highly competitive global community (Bindé 2005). Today's academic can no longer afford to isolate her/himself to his office or laboratory in a bid to understand his/her discipline better. Acquainting oneself to the on-goings of the discipline and with peers around the globe is an attribute that sets one academic research apart from the rest. When asked about the role of networking and collaboration in facilitation of their research, one interviewee responded as follows:

It is, there are very few people in this university who do not collaborate with others, I have published massively with other colleagues from India, Lund, but again there is some trick that you need to notice, a fully domesticated lecturer runs a risk of not publishing- what do I mean? One who does masters, PhD in Makerere and doesn't move out of the gates of Makerere gets in big trouble, if you look around, people who have stagnated in lower ranks are persons who have been in Makerere throughout, but people who have crossed the border have been publishing.
(Interviewee: Senior-Lecturer-Department of Arts and Social Science Education)

The above interviewee clarifies the need for collaboration and networking as a means of boosting research, However another key point is mentioned that is the state of those academics that have been immobile or 'domesticated' in the sense of having less or no international networking

experience or partnerships or attained all their post-graduate education in MUK. These academics have found it hard to publish widely and move up the ranks, among other things, because most of the research is externally funded. Another academic speaks more bluntly about the conferences which are key in enabling them to create research networks:

Networking is possible, but the problem is how do you know that one wants to work with you? I have seen colleagues who have done so but it is those that have gone for the international conferences, they meet there and share ideas. But now we who do not have a way of moving, you have to cover your transport costs, so it is not possible. You write a paper but even when it is accepted, you do not have the means to transport yourself there. The senior academics though, they have their own money, contacts and thus it is easy for them to attend such conferences.
(Interviewee: Senior-Lecturer-Department of Arts and Social Science Education)

The above academic speaks frankly about his state regarding the difficulty to attend international conferences. This is due to the poor institution support in form of incentives and support funding. This networking and collaboration is more than an individual factor since it is intertwined with how ready the institution is ready to fund and support networking platforms, some of which can be virtual or digital through the internet which reduces the costs and time yet enabling academics to partner with others from abroad. What is the nature of the networks that academics created at MUK and do they sustain the research endeavours? One interviewee addressed these questions as follow:

We have those external networks, but those networks do not work. We have been working on a study about partnerships, what enhances and kills partnerships, to me what I see is that the moment money goes away, the partnership is no longer there, and I do not think to me these are partnerships, these are people who just come together to harness an opportunity, once the opportunity is gone...even with us someone contacts you when there is an opportunity, once it is gone, then there isn't much.
(Interviewee: Senior-Lecturer-Department of Agricultural Production)

The above response reveals in as much as people seek to create networks for career advancement, one of the major drivers is the availability of the funding. The latter makes it easier for different people to come together on a common task. More detailed studies ought to be done on why networks and collaborations are not easily forthcoming in situations that are not financially lucrative especially in the case of MUK.

5.5 Organisational factors

The institutional environment can facilitate or impede the research capacity of the faculty. In reciprocal, the institution can either rise or fall in its ranking and other benefits depending on the rate of research output. Institutional support for research can be in the form of non-financial incentives to attend conferences, provision of key research infrastructure such as laboratories, library services, subscription to relevant journals, scheduling ample time for research, mentor-ship of PhDs, clarifying the research policies and expectations. All these are vital for motivating an individual academic to engage in research. The interviews included a question about the role the interviewees attached to institutional research support and whether they were satisfied with it. This is what one of them (a departmental administrator) disclosed:

We get good support, in the first place donors would want a letter of support from the institution, you have to get it from higher levels, A memorandum of understanding also sometimes is needed, and can be got from the vice-chancellor office. Two, we are allowed at least 40 % of our time to be used for research, which is more of a requirement. You cannot be here doing only teaching. What more support do you need?
(Interviewee: Departmental Administrator -Agricultural production).

The reaction from the interviewee reflects that even the university administrators treasure the non-financial institutional support such as: the time allocated for research over teaching as well as secondment and recommendation that is received from the university as they apply for research grants. In the context of MUK it is a positive step in the right direction. Another academic does point out more positively how much progress has been made over the time regarding the institutional support:

Basically we do have (now) the facilities to carry out research, for example internet, which is paramount, we have libraries, and somehow somewhere for the last five years there has been an improvement in as far as the bandwidth is concerned, it has been expanded that now we can afford to search for articles with ease unlike previously, when it was difficult to download an article. As far as the library is concerned there has been a slight improvement, I remember we used to order books, it would take a year but now it takes a maximum of four months to receive the books and MUK is also subscribing to many Journals, the main library in particular has been also organising workshops for staff and graduate students on how to use E-Materials.
(Interviewee: Lecturer - Arts and Social Science Education department)

This interviewee is clearly of the opinion, that MUK has made some strides in as far as the provision of the basic facilities is concerned. However, another academic thinks that there is still much room for improvement with respect with the institutional facilities and the overall support system:

The challenge is the internet, we have connectivity but it is slow, sometimes it is off, Electricity is also a problem due to intermittent power cuts, so if you have a Skype meeting with your collaborator abroad, you are interrupted, then the procurement issues. Sometimes you want to purchase equipment for a project, it takes so long, yet the project time is running out, some time you receive the equipment after the project had ended.
(Interviewee: Senior Lecturer -Agricultural production)

A critical look at the two statements above on facilities reveals that despite the positive steps that have been made at MUK, there seems to be a lack of unity in terms of institutional planning and coordination among key departments of the university, that is: Estates and Works, ICT and Finance and the academic departments.

Furthermore, when it comes to organisational factors, an important issue is the institutional clarity of research expectations. The academics working towards becoming full members of staff should be acquainted and inducted into the research philosophy of the institution. This makes them grounded in the research culture of the institution. This can be achieved when the institutions makes its research policies clear through mechanisms such as job contracts, departmental guidelines and promotion or incentives systems. When the interviewed academics were asked how they perceived the clarity of this institution's research policy and expectation from them, this is what one of them said:

It is not clear at all, when we come in (recruited). I look at my letter of appointment, it is not very clear especially your role attached to research, since your job title is lecturer, and that means to teach, so it is not very clear that there is emphasis on research, it is only when you begin to look forward to promotion, and pick up that promotion manual, that is when you realise that wow I have been focusing on thing that actually do not count much. Not even the Head of Department before me had emphasised it. There is no orientation for new staff. It is only after you have looked at the promotion criteria that you wake up.
(Interviewee: Senior-Lecturer -Department of Agricultural production).

As noted from the above respondent, the institution expects academics to engage in research but it

is neither expressed explicitly nor reinforced in any way apart from when the need for promotion arises. MUK pays more attention to teaching as the core duty of the lecturer. This is not a new phenomenon in SSA universities, which have not progressed much from their traditional undergraduate teaching role towards knowledge production (Cloete et al. 2011:37). Another academic frankly noted a crucial point on the lack of institutional measure to encourage or compel academics already with PhD to engage in research activity:

I think as I already told you, the department here does not place emphasis on research. Its emphasis is to ensure that you have taught. If I have my lecture now I go and teach, what I do after is none of their business. Like the dean has always told us to come together to do research, but all this has not yielded much. I think the motivation to do research must come from within you. Here no one will give you a whip that you have not done research but someone will beat your head if you have not gone to teach. So we are not accountable to anyone on research. And also no one will chase me away from the university because I have not been promoted since now am a lecturer and that is a permanent position not a training position like: teaching or assistant lecturer, so I can hit my 60 years. And we have seen some lecturers who are very good teachers because they mastered their art of teaching but not research.
(Interviewee: Senior-Lecturer- Department of Agricultural production)

The institution as seen from above is very keen on ensuring that academics are involved in teaching which in practice is key to strengthening the undergraduate courses. At the same time the rhetoric about research remains in the higher echelons of the university, especially the DRGT is responsible for :developing the institutional research agenda and the research policy and funding frameworks, but there is no enforcement on the ground with respect to the academcs with PhDS to publish; research is not a prerequisite to retaining one's tenure. When an administrator in charge of research was asked about what he thought about enforcing research to academic staff with PhD, this is what he responded:

Now the penalty for that is not available. The name of the university is that it is a research led university not a teaching university- we have positioned ourselves as a research led institution. So there will come a time when the university will put down its foot, if you have no publications but have a PhD, you are stagnant in one place for a long time, you will be asked to show the reason why you must remain in the institution.
(Interviewee: Research Administrator)

The response is reveals a tacit agreement by the administrator that the institution is not currently focusing on making academics accountable for research inactivity. The response does not stipulate whether there is any specific timeline when this will be introduced either. This laissez-faire policy towards research by the institution may account for the disinterested behaviour towards academic publishing as exhibited by some of the interviewed academic staff members. The question is; can the universities stand up to bring accountability to academics who do not publish, when the university itself has not fulfilled has not fulfilled its strategic aims and obligations with respect to research? ob

The institutional research reputation is as good as its graduate research programmes. The quality of mentorship and supervision designed for PhD students is key to building a stronger research capacity for the university, which also determines the smooth continuity of the research culture of the institution. At MUK, like in many SSA universities, time for PhD student supervision competes with other activities that lecturers find more productive, such as teaching in private universities or consultancies (Cloete et al. 2011). This situation is exacerbated by the lack of incentives for supervision of PhDs, which leaves the PhD students on their own. Furthermore, some PhD students, especially those who are self-sponsored ones, doeither not complete on time or not at all, since they have to attend to their jobs in order to pay tuition. At the same time, doctoral students with scholarship are easily incorporated into project work and usually finish their courses on time. When asked what the role of PhD mentorship was in enabling academics to become more productive in terms of research, one of the interviewees responded as follows:

I think it is very useful, I think not only PhD but also masters students, they also teach. The PhDs students I have, have been employed so it is difficult for you to work with them since they have to go back to their jobs, the masters are found more flexible, in mentoring, they do appreciate when you work with them, since they are still growing. They have time since they are not yet in full employment which is time consuming, they appreciate. I have found it useful, it is mutually enriching, the students and me as well frees me to be in a position to deliver in other areas as well. Those that tend to be more readily available for that sort of mentoring are those on scholarships, whereby you have got a grant, e.g. those of RUFORUM, on tuition, stipend and other things. (Interviewee: Senior-Lecturer-Department of Agricultural production).

This statement is indicative of not only the role that some staff attach to working with PhD students, but also confirms the impact of institutional bottle-necks as far as managing graduate programmes.

The need to harness funding for strong and consistent PhD programmes through scholarships and other means cannot be overstated. This is the only way through which mentorship will be possible without students taking time off to do other non-academic jobs. The other crucial component of mentorship lies in efficient supervision of PhDs. At MUK staff should at least supervise two doctoral students as part of their academics duties. With respect to the latter issue one research administrator stated:

There are many factors that affect the state of the PhD, there are those at the student level, some at the institutional level, supervision and funding, who is funding these students. Many people come on PhD programmes without knowing where to get the funding from, so they struggle with salaries, among others, so there are students factors. Then there are factors that are related to supervision, the quality of supervision is also a big issue, and we have tried to address them progressively by training people in supervision, people knowing the role of the supervisor and 'supervisee', sometimes people do not know what to do, they do supervise students the way they themselves were supervised. So we train all people with PhDs since they are supposed to supervise, and we believe the quality of supervision is improving.
(Interviewee: Research administrator)

This interviewee suggests that the institutional intervention currently with respect to the PhD programmes is mainly staff training on supervision techniques with the aim to improve their quality. This implies that the institution is pursuing neither the graduate funding problem nor the supervision incentives system. The result of that is the continuation of low PhD completion rate as well as low research productivity in the long run (Cloete et al. 2011).
A new positive intervention by MUK has been that of the mandatory publication by PhD candidates of at least three articles in reputable journals to qualify for graduation, which can be seen as an avenue of boosting the research capabilities of PhD students. Concerning any another institutional measures regarding doctoral studies, it is argued that :

Things are changing. Originally Makerere never had a policy, of forcing or encouraging all PhD candidates to publish before graduating, you would do your research, publish, go away, but now, Makerere insists that for you to enter the graduation book, you should have published at least three papers. Now people who want to be promoted especially professors will have to enforce that since they know that they are direct beneficiaries, because a student can't publish without tagging a name of the supervisor. MUK, has a bad practice, it doesn't pay supervisors' emoluments, so people saw no need to bother with supervising students, but now the indirect payment will be the publication

which is a must now.
(Interviewee: Senior-Lecturer-Department of Arts and Social science Education)

The use of refereed journals, both external and internal, is one avenue for achieving national and international visibility of one's academic research-based work. The arena of publication and visibility of African scholarly works in international journals has faced a number of key challenges including high subscription rates and bias with respect to African research output. As Gray (2009:7) observed, many African researchers still pursue the international journals as the single measure of performance, neglecting wider range of alternative avenues of making their scholarly work accessible such as internal journals. The local institutional journals can be an essential the first steps through which institutions assert their research capabilities before pursuing the international journals. Most works that have been produced in locally published articles, technical reports, conference proceedings, policy papers, and community resources usually disseminate more regionally-relevant data, which should be an area of interest to all government and institutional leaders. As a result this necessitates more funding and technical support to empower the local journals and utilise them to inform their policy decisions. One of the interviewees reflected upon the role internal journals in advancing the research cause of the academics, as follows:

They are playing a big role, many of my colleagues have published in these local journals. But there is a challenge, when it comes to promotion, some local journals have been challenged, people feel that some of these journals do not meet the minimum requirements like peer-review, and I think colleagues have abused these journals, for example, a single issue comes out and a member has four articles. This bring up many questions: how can one person have four articles in an issue of journal. I think somehow the local journals have been abused. So members have preferred to publish in overseas journals.
(Interviewee: Lecturer: Department of Arts and Social Science Education)

This highlights the challenge that hindered a more effective use of the internal journals: the low quality of the journal is a key hindrance for them to be recognised by the appointments board during promotion. This is a deep concern that discourages academics to publish in them. The failure for departments to follow key international peer-review guidelines can be of a worrying concern for the research culture of the institution. This is argued by the following interviewee:

They are dying, because nobody values them, people are saying that these journals are publishing things that are important to us in Uganda, but when you go to the appointments board, they will tell you no, we do not recognise it, we only recognise the outside journals. Like here we had a

journal that we used to use, all those who published within never used those papers, yet all that is useful knowledge, so I don't know if there will be some sanity now that it is being discussed, because there has been a very big move to actually boost our local journals as way of publicizing it internationally, if we don't accept them here who will do?
(Interviewee: Senior-Lecturer- Department of Agricultural production)

The negative attitude that surrounds the debate on the role of internal journals and how they have been neglected by the academics in MUK compelled the researcher to raise the issue in the interviews with the research administrators and to ask what they are doing to solve this problem. One of the interviewedresearch administrator acknowledged that:

Definitely we encourage people that when setting up a journal, a journal is judged by the quality of the editorial committee, how the peer-review process is done, so we do encourage the establishment of many journals locally here but they must be peer-reviewed journals. They must have a strong editorial board and once you do that people will have confidence in your journal. But what is happening here now is that people run out of funding, many of these journals are established because of some donor funds, so when they dry up, the journal too dies out.
(Interviewee: Research Administrator)

In essence, not only can the failure of internal journals be blamed on the poor peer-review practices, but also on (the lack of sustainable) funding, which has been a recurrent issue throughout the study. MUK as an institution is still grappling with a number of financial hurdles. Therefore, it is unclear when there will be enough funds from the university to support internal journals as a means of strengthening the research practice among the academics. The sole question now remains: What is the future of knowledge production and its visibility when internal journals are disregarded and international journals have stringent guidelines that usually reject Africa region-based content? These fears are reiterated clearly in Gray's words:

"In these circumstances, African publications at best perceived as marginal have practically no chance of being taken up by international institutional subscribers, in either print or electronic format. African scholars and scholars from other parts of the developing world equally have limited chances of having their articles published in the indexed journals. The bias of the Thomson Scientific and IBSS journal databases is clearest in those places where knowledge is most likely to be regional"(Gray 2009 : 8).

In retrospect the administrator had this positive note to make:

So for us here our policy is that when funds come we need part of it to sustain the locally published journals, and we encourage all of them to be published under Makerere University Press, which is slowly being revived.
(Interviewee: Research Administrator)

5.6 Research culture

Universities in SSA have been characterised by a strong teaching rather than research orientation. At the same time it is argued that research is a practice that is on the way to progress despite a number of impediments. The MUK strategic plan embodies knowledge generation as one of its core goals. However, as Sanyal & Varghese (2006:10) emphasize, SSA universities ought to do more than include research intentions into their strategic plans. They should also attempt to introduce and implement concrete measures, such as changing the perception that research isa means of mobilising resources as shown in their strategic plans. An effective research culture is gradual and all-embracing, and it includes the individual and organisational components of the university. One of the interviewees referred to research culture as follows:

To me the research culture is really more tied to funding, the people who write proposals are those who have a business mind and see an opportunity of earning some more money when they get indulged in research and do you know that there are some research projects I have been on and they don't demand you to publish? People have been on such projects, and when the projects end that is it. I think that research culture is now a self-driven thing, the university cannot force people to do research, it is the people themselves that have to drive themselves to research. I have also seen people who are motivated, because some projects come with cars, labs. I think the attitude also depends on how high you are in terms of hierarchy: how many years you have spent here. So if you are a senior person, no one can force you to research.
(Interviewee: Senior-Lecturer-Department of Agricultural production)

This interviewee suggests that the dynamics of a research culture encompasses more than meets the eye; multi-layered. Ambition to gain financial benefit has motivated a few academics to participate in research projects, leaving the less ambitious to stall along the way. The driving force of publication is mainly donor funding. Thus, it is fair to conclude that the culture is yet to be institutionalised. The environment has seen a great inflow of donor funds over the last ten years, while salaries are low and the economy is inflation-ridden. Both senior and junior academics' career

ambitions seem to be inclined towards the lucrative side of project work. Another academic clarified the research trend at MUK, in a similar rhetoric as the preceding interviewee:

Research has much more to do with how ambitious you are, how focused you are, but there is a calibre in the middle there, which was more skewed to teaching the evening students, and it has not advanced. Then those who went up to professorship, because already when you are a professor research somehow finds you, someone will come and say professor can I peg your name on to my research and then there are young ones who want to push up. They want to go to the top, and remember the young ones are in ICT, they know how to get the data from the journals and that is the beauty of Makerere.
(Interviewee: Senior-Lecturer-Department of Arts and Social Science Education)

The two interviews mention one thing in common: ambition of individuals, both senior and junior. We find less direct institutional participation aiming at advancing the research culture. The assumption remains that the earlier universities in Africa, including MUK discover that contractual research projects cannot build a sustainable research culture, the quicker will they find a timely solution. When asked about how the research culture at MUK has changed in the last five years one of the people in charge of research administration stated:

It has improved, and Makerere is the second in Africa, and that has not come easily, it has come from a lot of commitment. In as much as we have our challenges, but down there on the ground, people are doing very good research. So the fire of research culture is burning, there are many funding agencies attracted to Makerere, So the future of Makerere when it comes to research is quite bright.
(Interviewee: Research Administrator)

The response is filled with optimism on the future of the research culture at MUK. The administrator admits the presence of challenges and individual research going on within the institution. One fact that we cannot underestimate is the increasing presence of in funding agencies in MUK-conducted research, which shows that despite some major bottle-necks negatively affecting research productivity, the donors still regard the university in a positive light.

5.7 Conclusions on the main findings

While we have presented the key findings of our study in the previous section, in this sections, in this section the main conclusions with respect to the main findings will be discussed.
The findings reveal that research at MUK is a highly individual activity that has not yet become institutionalised. This implies that departments and faculties are yet to embrace organised research practices through the: creation of common research themes, the establishment of research groups as well as the incorporation of PhDs in research groups. The research practice at MUK is also mainly motivated by promotion to higher ranks as well as lucrative financial benefit mainly from donor funded projects. There are practically no measures placed by the institution to compel the academic staff that hold PhD degrees to engage in research work.

When it comes to funding, MUK does not finance research directly in the form of grants to departments or incentives, it instead mainly funds staff-training linked to the PhD supervision work . There are occasional research grants from the university but these are mainly earmarked for PhDs and post-docs, even though it is not always these groups who obtain them in practice. The government contribution to research is also meagre and focused in a select few of departments such as agricultural science. The major form of funding is donor funding through agencies, such as SIDA, NORAD, USAID, or the Carnegie and Rockefeller foundations. It can therefore be said that without donor funding many of the research centres, journals and other research capacities would have problems operating. Academics have highlighted how hectic it is to apply for research grants, both internal and external ones, with the internal ones being usually marred by institutional bureaucracy and poor procedural mechanisms. The external grants, which necessitate the use of the university accounts and procurement, are usually encumbered by the slow and complex institutional procedures, which have discouraged some academics to apply for them. Donor funding priorities and themes are dynamic and contractual, which hampers relevance or sustainability.

The PhD graduate programmes at the university are organised on a more individual basis. In the cases, where students have to cover their tuition fees, it has been realised that they do not complete their courses on time since they have to attend to their jobs as well. Such students cannot be incorporated into any projects or publishing endeavours since they are hardly ever available on campus. PhDs that have been incorporated into research projects are those on scholarships especially in the science departments.

The heads of department are only responsible for the allocation of the teaching loads to academics. They do not have any directly impact on research activities. Their duty is more to encourage

academics to respond to research grant calls that are advertised through the department by the DRGT. All interviewees also admitted that a big teaching load can be of adverse impact on the research time, and that consultancies and teaching in private universities are no longer as vital to them as they were ten years back.

The findings also reveal that the academic staff at MUK prefers the use of external (international) journals as a means of making their research visible, especially compared to the internal journals. Internal journals are usually discredited by the appointment board due to their low quality, and little has been done by the institution to raise their standards and strengthen their use of peer review. When it comes to networking and collaboration, the active individual lecturers who have the wherewithal to travel for conferences and have also had the opportunity to study abroad, have obtained key networks for vibrant research collaborations compared to those who have to rely on the institution to fund their travel for conferences.

The research culture is steadily improving despite the fact that it is still mainly dependent on donor funding and there are only a few active academics than on the institutional efforts and actions. With the majority of staff concentrating on teaching as the primary role enforced by the university, it is clear that research is not yet the priority for the institution. Makerere is still largely an undergraduate university, training students mainly to fill the service industry in the country. There is hope that with the increasing number of private higher education providers, the university can transform itself into a more research oriented institution.

When the researcher asked all nine respondents to rank the four factors: organisational factors, funding, individual factors and research culture, in terms of importance, most of them pointed towards funding as the strongest influence. It is also key to reveal that research administrators, deans, and academics who are active in research in the agricultural science department were quick to point out individual factors as a second key influence, while those in humanities focused rather on organisational factors. One can conclude that funding played a crucial role for both active and inactive academics: academics who were donor-funded felt that their individual attributes were the most important and thus ignored placing the blame on the institution and the lack of funds. On the other hand, those who were not receiving any donor-funds and were inactive found it fair to blame the institutional lack of funding for their research inactivity.

CHAPTER 6: SUMMARY, CONCLUSION AND RECOMMENDATIONS

6.0 Introduction

In the previous chapter the main findings of the study have been presented and discussed. This chapter will present the summary, conclusion and recommendations for further research as well as to policy-makers. Starting-point for this are the resesarch questions.This study sought to answer:

i) What is meant by 'research productivity'?

ii) How has research productivity developed over the last ten (10) years at Makerere University?

iii) How is research leadership and management organised in Makerere, what is the institution doing to stimulate research?

iv)What are the main sources of funding for research at Makerere University?

v) How do the factors at the individual level influence the research productivity at Makerere University?

vi) How has the research culture influenced the research productivity at Makerere University?

Vii)How can research productivity be improved at Makerere University from the academics' perspective?

Addressing these questions, this chapter through its different sub-sections will attempt to come to a final discussion, The first sub-section of this chapter will present a summary of the study linking the questions to the different concepts that have been used throughout the study. The second sub-section will make conclusive remarks on the study as a whole. Finally, the third will present the recommendations to policy-makers and recommendations for further research.

6.1 Summary of the study

The overall objective of the study was to investigate the faculty perceptions on the factors that influence research productivity at MUK. This was done through examining the development research productivity at MUK over the last ten years, to investigate the research management and organisation at MUK and the interventions that have been used to stimulate research. Furthermore, the study addressed the main sources of funding for research at MUK and investigated the different

ways through which research productivity can be improved.

6.1.1 What is meant by 'research productivity'?

In this study, research productivity has been interpreted in terms of two major aspects: the academic research-based publications such as articles in academic journals and conference proceedings, and the supervision and mentorship of PhD students. This interpretation is similar to that used in the HERANA study.

The findings of this study reveal that Makerere University uses research publications as well as supervision of graduate students as some of the most important requirements for academic staff members to obtain a promotion to the ranks of senior-lecturer, associate professor and professor.[25]

However, research productivity in African universities as it has been discussed in most of the literature has been mainly about bibliometric aspects. This study has highlighted that research productivity goes beyond counting the number of academic publications but can take on also different non-quantifiable forms such as mentorship of doctorates, which is a key element in shaping the research capacity of the department in the future. Research productivity is more than a job requirement to measure the diligence of the academic staff within the institution, but rather an avenue through which institutions themselves can measure their progress and competitiveness at a national, regional and global level and fulfil one of their two main tasks. Research productivity is also a result of focusing and strengthen on the four core elements of the research function that have been presented in the analytical framework that is: the organisation factors, individual factors, funding and research culture

6.1.2 How has research productivity developed over the last ten years at Makerere University?

The findings of the study revealed that the research productivity at MUK is increasing although still comparably low to that of the most prominent South African university the University of Cape Town. The findings reflect well those of the HERANA project done by CHET (Cloete 2011,

25 MUK appointment and promotions policy 2006, P.8
http://policies.mak.ac.ug/old/downloads/POLICY%20APPOINTMENT%20AND%20PROMOTION%20May%202010.pdf

Bunting 2014) which revealed that MUK, like many other African universities is still grappling with major problems: First, the research income per academic is still low and there is no proper incentive system to support researching academics. Second, the doctoral graduate numbers are also still low due to the absence of a strong grduate programme, which can guarantee mentorship and timely completion of the PhD. The number of research publications is also very low and third,the academic core is weak, due to the relatively high number of permanent academic staff without PhD qualifications.

However, this is not to say that there is no improvement. The progress in both the production of academic publications and in the PhD staff training are taking place but it is a gradual process. This is evident through the prominent position of the university in HERANA study findings: being the best in East and Central Africa, and in SSA only coming next to UCT between 2009- 2011 (Bunting 2014).

The university is now channelling its research resources and improving the qualifications of its permanent academic staff, by ensuring that most of them attain a PhD, which is an avenue tobuild research capabilities. In the last ten years many academic staff members have been awarded internal grants to take on doctorate degrees or have received scholarships with collaborating international universities. This is a positive sign given that it can be argued that the more academic staff with a PhD MUK gets, the larger the possibilities of transforming both research capacity and culture.

Research productivity at MUK is more inclined towards some disciplinary areas than others. The science related disciplines and faculties tend to be more productive than the social sciences/ humanities disciplines. This is amongst other things, due to the dynamics of donor-driven funding of the research projects which prioritises the science areas more than the social sciences/humanities areas. As a consequence, there has been an increase in the number of joint projects between MUK academics and academics in other universities in key science areas such as tropical medicine, environment, agriculture, and food science. This has created an imbalance in disciplinary research across the university as the social sciences/humanities have been left to chance and dire funding. In the end, this accounts for the difference in the attitudes towards knowledge production and the rate of staff-promotion between the academics in the social sciences/humanities and those in the sciences, with the latter in all respects out-performing the former.

6.1.3 How is research leadership and management organised in Makerere, what is the institution doing to stimulate research?

Regarding the research leadership and management, most of the work at MUK that pertains to research is based at the DRGT. One of the positive developments since its inception has been the creation of a research agenda, the institutional research and innovation policy and the intellectual property management policy. All these are endeavours aimed at transforming and strengthening the research capacity at MUK. This research management is still positioned at the central levels of the institutional governance hierarchy and there is need for more decentralisation by involving departments directly involving departments in the institutional research management through the Heads of Department. The lack of research groups is proof of the weak management of research in the institution. The DRGT has to go beyond research policy and donor-partnership rhetoric to supporting research practice.

Core institutional documents such as the strategic plan, and the self-assessment report, reflect a vision on the need for knowledge production and promotion of science and technology at MUK. The institution also reveals an incorporation of national priorities such as: the further development of the agriculture sector, a case in point in this is the funding from the government of Uganda towards research and innovation at the Food Science and Technology department.

There is at best aweak coordination between DRGT and the departments in terms of management and funding of research. The DRGT lacks measures to stimulate the (further) development of the research function at the departmental level, which renders the heads of department incapacitated as far as research is concerned.

6.1.4 What are the main sources of funding for research at Makerere University?

Funding of research at MUK is still a critical issue. Having many donor-funded projects running in a number of faculties at MUK, one would believe to be a positive sign. However, there is a lack of political will by the government to increase research funding. The institutional funds have also been diverted to PhD staff-training as a means of strengthening institutional staff research capabilities. Therefore, it is therefore fair to state that MUK depends majorly on donor funding to sustain its research function.

The DRGT runs negotiations with external donors as well as a few internal and external grants.

However, applying for both internal and external grants is still a cumbersome and bureaucratic process. It is also vital to note that active and renowned senior academics run key projects that are externally funded which is a disadvantage from the perspective of sustainability. The DRGT has not created structures to link the active academics with less active ones in joint projects. This is reminiscent of what Maassen (2012) refers to as fragmentation, where most of donor-funded projects have not been institutionalized, but run temporarily under key individuals. In short, research at MUK is still an individual process to attain career promotion and financial benefit but not as much an institutional endeavour.

6.1.5 How do the factors at the individual level influence the research productivity at Makerere University?

The study has revealed that the individual factors that influence research productivity comprise motivation as the prime driving factor, as well as an individual's passion in the field and an individual's training. Research is an individual exercise, where MUK staff set out to seek for new knowledge in their discipline. However, this is an almost impossible endeavour without the right conditions being in place. Motivation to engage in research has been found to be the strongest factor as it encompasses all the intrinsic drives of an individual towards achieving a specific goal such as ambition, determination, passion, patience. In the study, we have seen the passion to discover new knowledge within one's discipline is most responsible for academic staff engaging in research-based publications. This passion is then followed by other motivations such as the wish to rise in the department and disciplinary ranks (ambition), which also leads to active engagement in applying for grants, participation in research groups and networking with fellow academics. Finally, material achievements, such as financial gains are also instrumental in stimulating some academics to become active researchers.

Makerere University's research capacity is still weak with a limited number of active senior academics that mainly engage in individual research assignments through mostly donor-funded projects. This trend has sometimes been fuelled by the financial gain that seems to be attached to these projects, making departmental group research a very rare event.

Another element of individual research capability is the academic qualification and especially the doctoral degree. According to Bunting et al. (2014), MUK's research capacity is still impaired by the low number of academic staff with a doctoral degree. With only 43% of the total senior academic staff holding a PhD, this number is not sufficient to take care of all research, training and

management activities and functions. Furthermore, only 14% of the degreee-holding academics are in senior positions to head research groups (Bunting et al.2014 :18).

In a nut shell, although few academics at MUK exhibit an active spirit to engage in research that is most donor-funded, it would make a more positive impact if this diligence is transferred to the rest of the academics through promoting work at disciplinary level in research groups and academic staff doctoral programs (in-service training).

6.1.6 How has the research culture influenced the research productivity at Makerere University?

Many people would agree that for research productivity to prevail in a university,the institutional culture is of vital importance. However, this culture can not be examined by using a single indicator as it usually manifests itself through various, mainly symbolic forms. T In this study, this all-embracing phenomenon has been narrowed down to some key elements that are considered highly relevant to the context of Makerere University. These are the institutional research policies, the departmental research culture and the research budget.

The findings of this study suggest that Makerere University's research culture is tied to the funding as the major driving force. Funding has impacted the way academics relate to one another at the department level as far as the research activities are concerned. Since the institution has only a limited research funds which can hardly promote research initiatives at the departmental level (like for example research groups), this has created an individual-based research culture. This is where active, ambitious academics take on the research roles especially through their own links in the framework of projects that are mainly donor-funded. Such initiatives have had financial impact for the individual but have in practice 'killed' the joint research culture at the departmental levels.

Although the MUK's strategic plan has an emphasis on the role of knowledge production as a research university, the institutional research policy does not make research a job requirement and therefore is not sufficiently aligned. Research is a requirement for those that seek promotion from senior-lecturer upwards.[26] This implies that the only factor that would inspire one to engage in research is to attain a promotion. It is therefore crucial to note that one could remain working as a lecturer at the university as long as he/she has a doctorate degree. This shows that MUK is still to a

26 MUK appointment and promotions policy 2006, P.8
http://policies.mak.ac.ug/old/downloads/POLICY%20APPOINTMENT%20AND%20PROMOTION%20May%202010.pdf

greater extent an undergraduate university that mainly emphasizes the education role (teaching and learning) of its staff and not the research function.

In brief, the study has succeeded in revealing that although the research culture at MUK is improving, it is a gradual process that requires both the individual academic effort in a well-organised institutional research environment

6.1.7 How can research productivity be improved at Makerere University from the academics' perspective?

According to the perceptions of the academics, a number of institutional related interventions on how to improve research productivity are discussed below:

First, the university ought to consider allocating more funding towards the research function. This should be done to the degree that the incentive system is streamlined to stimulate for example, research publication, PhD supervision and mentorship, conference attendance, management of journals. Increased funding from both the government and the institution will reduce the staff dependence on donor funding. There is a need to break the belief that research is meant for a few individuals, who are ambitious for promotion and financial benefits, rather than strive towards being an active researcher should be streamlined in the academic culture of the institution.

Secondly, the university ought to revisit its employment policies that pertain to research as a duty of the staff. The institution should ensure that research is more than a requirement for promotion, but part of the job description. Making research a requirement for one to preserve his/her job will challenge many of the academics to engage in research and consequently usher in a new form of research culture.

Third, the university research office (DRGT) ought to adapt its mandate by decentralising parts of its tasks to the departmental levels. The creation of departmental research offices or an empowerment of the heads of department can ease the management of internal grants and other forms of funding, which have previously been characterised by bureaucracy and inefficiencies. The DRGT in the same regard ought to strive to institutionalise donor-funded research projects, to encompass a variety of academics and not only a few prominent senior professors. A central organisation and coordination of all donor-projects within the university is required to prevent further fragmentations and the further strengthening of the individualised research culture.

Four, the institution could revisit its PhD policies especially regarding the funding mechanism, supervision and mentorship. Admission to PhD programmes should be granted only when candidates prove to have sufficient funds to pursue the courses. To alleviate cases of long extension due to the fact that self-sponsored candidates are as well doing jobs outside the university, the institution should revise the duration of the degrees, as well as introduce partial scholarships, or student loans to ensure that graduate students can fully devote their attention towards their programmes.

Fifth, for the university to diversify its funding towards research, it may need to consider a stronger interaction with private companies and businesses. This should begin with bringing Ugandan private companies on board before considering those outside the country. This would not only give them an opportunity to work on joint innovative ideas relevant to the Ugandan society, but would also create a sustainable research income for the university.

6.2 Conclusion of the study

The findings of the study lead us to the conclusion that research productivity at MUK is apparently increasing despite the funding, institutional and individual challenges. The low research output can not solely be blamed on a lack of funding, as we have noticed that even in the agricultural science department where there is access to donor-funds, some academics are still inactive and hesitant to engage in research activities. Therefore, it is a mixture of a weak research culture and a lack of institutional research incentive structures; a situation in which many staff members do not develop individual aspirations as far as research is concerned. It is also safe to conclude that until the institution creates mechanisms to make academics accountable in terms of their research output, the current situation will not change much. Change is only possible when MUK ceases to see itself as an undergraduate university dependent on a large private tuition-paying student population, and moves more towards being a more financially independent institution ready to embark on knowledge generation for knowledge's sake. The academics at MUK cannot dream of higher strides in knowledge production in their university, when the research function is driven by donor-funding priorities, and ever-changing global research agendas, such as climate change, poverty alleviation, incubation, sustainable development, peace and conflict, among others neglecting maturity in their disciplinary pathways.

The university has to assert itself as a research university not only through numerous donor-driven and funded projects, but also through staff-driven disciplinary-based research initiatives. Makerere University should progress from being seen as an arena in which different external donors play for their own objectives, towards a platform of nurturing knowledge production from the departmental level up. However, this however shall require an increased and steady income focused towards faculty-based research teams and not just a few active individuals.

In retrospect, the research teams can only thrive when the institution uses its mechanism and strategic room to manoeuvre for holding academic staff accountable with respect to fulfilling their research role. The university can no longer use the acquisition of the PhD as the sole minimum requirement for staff to retain their positions perpetually thus it may also need to reconsider the phenomenon of promotion as the only motivator for research-active academics. Research hence should become a qualification for one to retain his tenure as an academic staff in MUK.

MUK requires building a robust research capacity originating from graduate programmes. The master programmes should be designed to cultivate the spirit of scholarships among the students, to motivate them later to enrol in PhD programmes. The doctoral education trajectory has been found to be overly lengthy due to the financial status of private-sponsored students, who are usually doubling non-academic work and doctoral studies. The financial requirements of the doctoral studies ought to be revised and financial support structures, such as student loans, and partial scholarships, ought to be initiated for prospective doctoral students who are willing to take on the scholarly journey but are financially needy.

The other doctoral-related problem is that PhD students have not been engaged in the departmental research, since most of them are preoccupied with non-academic work and operate in faculties without research groups. It is therefore vital for the university to rethink the role of the PhD students in improving the research capacity. Key facilitation and incentives ought to be used to stimulate them into working within the department rather than opting for non-academic work outside the university. So far this has been only successful in the science-related faculties that have projects funded by donors. Furthermore, the incentive structure has to be revised to include the role of mentoring and supervision of doctoral students by senior staff. The link between teaching and research at the graduate level is paramount for increasing research productivity.

MUK has to differentiate itself from other public universities in the country as far as its functions are concerned. Despite the fact that it is the most reputable public institution and can attract many students, whose dream it is to attend this 'flagship' institution, MUK has to begin a shift in its

priorities from undergraduate teaching to engagement in more research. As a public institution, there are means of transferring a large number of the taught programmes at undergraduate level to other public regional universities. This would not only enable it to focus directly on research, but also create more time for its academic staff to engage in research work.

Last but not least, with respect to research productivity at MUK, we have to recall the ardent need for research universities in Africa to place special attention to the research function since it is one of the ways through which they can market themselves in the global knowledge economy. Altbach (2007: 131) states that for the developing countries, research universities act as the sole link to the international knowledge network, especially through the outstanding local academics. It is this avenue through which knowledge from a global perspective can be used for solving local needs.

MUK has earned its name in the eyes of the local and foreign public especially the donors. This position could be used as a starting point to assert the university's research priorities.This includes channelling donor funds towards building locally incubated ideas at faculty level, partnerships with the private industry to fund doctoral fellowships, provision of infrastructure, among other research initiatives. Of all the four major factors addressed in this study: funding, organisational factors, individual factors, and research culture, funding plays the most pivotal role in determining the quality of organisational incentives, management systems and consequently the research culture of individuals in the university. This is becausethe academics are already faced with a poor basic remuneration compared to other professionals in the country.

6.3 Recommendations for further research

This study has focused on examining the views and perceptions of MUK academic staff on the different factors that affect research productivity. It has elaborated the individual, organisational, funding, and research cultural-related challenges that academic staff at MUK regard to be worthwhile to note. The study has also made some key recommendations to policy makers and institutional leaders about the current state of research at MUK, which can be explored to stimulate research productivity.

Several avenues for further research are possible based on the findings of this study. First, a more comparative qualitative study should be done on the influence of organisational and funding mechanisms on research productivity, involving two or more faculties between MUK and any other

African university such as: the University of Dar-el-salaam or the University of Ghana in line with the approach of the HERANA project.

Furthermore, an in-depth study to understand the actual nature of research productivity, at an organisational, funding, and individual context should be done in MUK. Such a study would be key to investigating more closely the research productivity across the different faculties of the university. Among the key issues to examine are the production of academic publications, and the ways in which the empirical data is collected and funded.

In retrospect, the researcher's choice of the analytical framework with its four main components, individual factors, organisational factors, funding, and research culture, in this study can be regarded as a worthwhile as it has been shown in the findings. The research productivity at MUK is influenced by the four components, with the organisational components and funding having shaped the research culture. The study has also found that the individual beliefs on research at MUK, are shaped by donor funding as well as the university's research policies. Active researchers yearn for more career progression and financial benefits, while inactive ones are not driven by the institutional mechanisms hence sliding into their teaching comfort zones.

The research tools that have been used to support the analytical framework that is,the semi-structured interviews with different groups within the university, such as individual academics and university research administrators, have been relevant for the attaining of the research objectives. They have elicited key perceptions from individual academics as well as university leadership. The opinions from the latter have shed light on the institutional policies in the areas of research management and funding. The opinions from different academics have enabled us to understand the varied attitudes and beliefs of different individuals as regardsto research at MUK, this has clarified the state of research culture in the institution. To a greater extent, the researcher believes that the analytical framework components have been satisfying based on the findings attained. In retrospect, it can be concluded that this thesis is an important primary step in exploring the issues of research productivity at Makerere University.

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Appendix

Appendix A: Interview guide for academic Staff at Makerere University.

In this study, Research productivity refers to Research publications in professional journals, conference proceedings, writing a book or chapters, and working with postgraduate students especially PhD supervision and mentoring.

Background questions

1. Can you please introduce yourself?
(Academic discipline, research interest, career experience)
2. What is your position at this faculty, and what are your main academic roles?

Personal factors

1. What are your academic research interests and why?
2. How has been your experience from the time you started conducting research to date?
3. How would you describe your motivation to carry out research?
4. How would you compare your task as a researcher in this university to researchers in other universities?
5. To what extent do you attribute your doctoral programme and training to your success as a researcher?
6. How would you describe your workload in terms of distributing time between teaching and research?
7. What role as a research would you attach to collaborative research?

Organisational factors

1. How is research organised in this faculty?
2. What role is played by the H.O.D or Dean in determining how much time you dedicate to teaching or research?
3. How would you perceive the clarity of this institution's research policy and its expectation from you?
4. How is your research task at this university supported in terms of research (management)

training, institutional funding for your research, research output dissemination.

5. How important is such support for you to be able to do the research you would like to do? How satisfied are you with this support?

6. How would you describe the procedural simplicity and speed of obtaining internal research grants?

7. What is has been the role of databases and relevant academic journals in stimulating your research activities?

8. How would you describe PhD student mentor-ship in this faculty and its contribution to research output?

Funding

1. How does the faculty fund its research activities?

2. How would you describe the university incentive system pertaining research publication, conferences, and PhD supervision?

3. To what extent would you attribute the role of external funding to the growth of research publications in this faculty?

4. What is the role of donors in determining of the time allocated to teaching and researching?

5. How would you describe the process of obtaining and using external research grants?

Research culture

1. What is your view towards academic publication as an institutional expectation of its academics?

2. How is collegial relationship key to stimulating collaborative research in this faculty?

3. In your opinion what has the university done in the last five years changed more positively to stimulate research productivity?

Appendix B: Interview guide for senior administrators and heads of research at Makerere University.

1. As an administrator, what are your main duties as regards to research in the university?

2. Where does the university obtain funding for research purposes from and how are they distributed?

3. What activities is the university taking to stimulate academic research productivity?

4. In your opinion, how has the research process and dynamics in Makerere University changed over the last ten years?

5. What is the university's efforts in training, retaining and attracting PhD candidates?

6. How has the university streamlined the process of research grant application and administration?

7. What steps have been taken in relation to performance evaluation and feedback to boost research in faculties?

8. In your opinion, of the personal and organisational factors, which ones are the most significant when it comes to influencing research productivity?

9. Is there any other comment you wish to make?