



SELINUS UNIVERSITY
OF SCIENCES AND LITERATURE

**PUBLIC UNIVERSITIES AND RESEARCH CULTURE
DEVELOPMENT IN OF GREAT LAKES REGION OF EAST
AFRICA: EMPIRICAL LESSONS FROM UGANDA**

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Declaration

I, Mark Kiiza affirm that this PhD thesis is my original work, ensuring it does not breach ethical codes or laws. I have acknowledged the work of others and cite relevant authority. The thesis is submitted for assessment on the Doctor of Philosophy in Education management and evaluation program at Silenus University.

Signed ... 

Mark Kiiza UNISE28451T

Date: 30 /07/2024

Dedication

I dedicate this work to my father Charles Ssekyanzi who initially exposed the journey to education, unwavering the truth and alternate reality. Furthermore, I dedicate this work to my brothers and Sisters. I pray that let this work be an inspiration and a spring board to all nephew and Daughters with abundant love and prayer for my Family to an extent that they will never critique nor continue the research project herein.

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Table of contents

DECLARATION	I
DEDICATION	II
ACKNOWLEDGEMENTS.....	III
TABLE OF CONTENTS	IV
A LIST OF FIGURES	VII
A LIST OF TABLES.....	VIII
ABSTRACT	X
CHAPTER ONE: INTRODUCTION.....	1
1.0 INTRODUCTION	1
1.1. BACKGROUND HISTORICALLY	1
1.1.2 THEORETICAL PERSPECTIVE.....	2
1.1.3 CONCEPTUAL PERSPECTIVE.....	3
1.1.3.1. THE CONCEPT OF UNIVERSITY EDUCATION.....	3
1.1.3.2 CONCEPTUALIZING RESEARCH CULTURE	4
1.1.3.3 THE CONCEPT OF RESEARCH	4
1.1.3.4 THE CONCEPT OF CULTURE	5
1.1.3.5 THE CONCEPT OF RESEARCH CULTURE	5
1.1.4 CONTEXTUAL PERSPECTIVE.	6
1.2. PROBLEM STATEMENT OF THE STUDY.	6
1.3. GENERAL OBJECTIVE OF THE STUDY.....	7
1.3. SPECIFIC OBJECTIVES.....	8
1.3.1 RESEARCH QUESTIONS.	8
1.3.2 HYPOTHESIS OF THE STUDY.....	8
1.4 SCOPE OF THE STUDY.....	9
1.5 CONCEPTUAL FRAMEWORK.....	10
CHAPTER TWO: LITERATURE REVIEW	12
2.1 INTRODUCTION	12
2.2 THEORETICAL FRAMEWORK	12
2.3. KNOWING- KNOWLEDGE.....	13
2.4.1 KNOW-WHAT KNOWLEDGE.....	14
2.5.1 KNOWLEDGE PRODUCTION	16
2.6.1 CHALLENGES FACING UNIVERSITIES REGARDING KNOWLEDGE PRODUCTION.....	16
2.7 EMPIRICAL RESEARCH AND SCHOLARLY COMMUNICATION	18
2. 8 SUMMARY AND CONCLUSIONS.....	19
CHAPTER THREE: THE RESEARCH METHODOLOGY.....	20

3.1 INTRODUCTION	20
3.2 RESEARCH DESIGN	21
3.3 PHILOSOPHICAL UNDERPINNINGS OF THE STUDY.	22
3.4 STUDY POPULATION.....	22
3.6 DATA COLLECTION METHODS	24
3.7 DATA COLLECTION INSTRUMENTS.....	25
3.8. QUALITY CONTROL.....	26
3.9 DATA MANAGEMENT.....	28
3.10. ETHICAL CONSIDERATION	29
CHAPTER FOUR:	32
PRESENTATION OF FINDING, ANALYSIS, INTEPRETATION AND DISCUSSION.....	32
4.1 INTRODUCTION	32
4.2 RESPONSE RATE AND DATA SCREENING	32
4.4 THE CHALLENGES OF PUBLIC UNIVERSITIES ON RESEARCH CULTURE DEVELOPMENT	34
4.1 CONNECTION AMONG KEY RESEARCH STAKEHOLDERS.....	34
4.2 LOW LEVEL OF RESEARCH FUNDING	37
4.3 INADEQUATE READING AND WRITING CULTURE	38
4.4 DISCUSSION OF THE FINDINGS	40
4.8. 3 FACTOR CODING	48
4.8.5 RELIABILITY ANALYSIS	54
4.8.6 RELIABILITY ANALYSIS OF RESEARCH SUPERVISORS	55
4.8.7. RELIABILITY ANALYSIS OF SUPERVISORS AND RESEARCH SELECTION	56
4.8.9 RELIABILITY ANALYSIS OF SUPERVISORS' OVERSIGHT ROLE	57
4.8.9 RELIABILITY ANALYSIS OF QUALITY OF RESEARCH WORK.....	58
4.9 STRUCTURAL EQUATION MODEL DEVELOPMENT ANALYSIS.....	59
4.10. RESEARCH SUPERVISOR AND THE QUALITY OF RESEARCH WORK	61
4.11 DISCUSSION OF THE FINDINGS	67
4.11.1 CRUDE CONCEPTION OF RESEARCH	67
4.11.2 IMPORTANCE OF RESEARCH CULTURE	69
4.11.3 SUMMARY AND CONCLUSIONS	71
CHAPTER FIVE: RESEARCH CULTURE BUILDING IN PUBLIC UNIVERSITIES.....	72
5.1 INTRODUCTION	72
5.2 SUCCESSFUL RESEARCH CULTURE BUILDING IN PUBLIC UNIVERSITIES	72
5.3 RESEARCH TIME AND SPACE	73
5. 4 DISCUSSION OF THE FINDINGS	75
5.5 SUMMARY AND CONCLUSIONS	80
6.1 INTRODUCTION	81
6.2 APPROACHES TO A RESEARCH CULTURE DEVELOPING.....	81
6.3 STRUCTURAL AND PROCEDURAL RESEARCH CULTURE DEVELOPMENT APPROACH	81
6.4 DESIRABLE RESEARCH CULTURE AND PRACTICES REINFORCEMENT	83

6.5 RESEARCH CAREER PROMOTIONS	83
6.6 RESEARCH CAPACITY DEVELOPMENT APPROACH (RCDA)	85
6.7 MANAGERIAL POSITION AND POSTGRADUATE RESEARCH SUPERVISION	87
6.8 DISCUSSION OF THE FINDINGS	87
CHAPTER SEVEN:	95
CONCLUSIONS, CONTRIBUTION AND RECOMMENDATIONS	95
7.1 INTRODUCTION	95
7.2 THE MAJOR FINDINGS	95
7.2.1 NATIONAL COUNCIL FOR HIGHER EDUCATION POLICY ON THE RESEARCH CULTURE DEVELOPMENT	95
7.3 RESEARCH CULTURE DEVELOPMENT WITHIN PUBLIC UNIVERSITIES	96
7.4 CHALLENGES OF RESEARCH CULTURE DEVELOPMENT	98
7.5 CRITICAL FACTORS FOR RESEARCH CULTURE BUILDING	99
7.6 CONTRIBUTION OF THE STUDY	101
7.7 RECOMMENDATIONS.....	105
7.8 RECOMMENDATIONS FOR FUTURE RESEARCH	110
7.9 THESIS CONCLUSION.....	110
REFERENCE	112
PPENDIX I: QUESTIONNAIRE	112
APPENDIX II: INTERVIEW GUIDE WITH DIRECTOR AND RESEARCH FELLOWS	120
APPENDIX III: INTERVIEW GUIDE WITH THE DEANS / HEADS OF DEPATRMENTS	122
APPENDIX IV: INTERVIEW GUIDE WITH ACADEMIC STAFF MEMBERS.....	125
APPENDIX VI: INTERVIEW GUIDE WITYH DEPUTY VICE CHANCELLOR UNIVERSITY TOP MANAGEMENT	130
APPENDIX VI: PROPOSED RESEARCH ACTION PLAN AND SCHEDULES RESEARCH	134
APPENDIX: VII RESEARCH SCHEDULES FROM DECEMBER, 2023TO JUNE, 2024	136
PENDIX: VIII: LETTER OF INTRODUCTION TO FIELD FOR DATA COLLECTION FROM SELINUS UNIVERSITY	138
APPENDIX: IX CONSENT FORM FOR RESEARCH PARTICIPANTS	139

A list of Figures

Conceptual frame work.....	11
Scree plot figure	41
Structural equation model development.....	57
Final structural equation model	104

A list of Tables

Table 3.1 Population and sample size	25
Table 4.1 Demographic results.....	35
Table 4.2: KMO and Bartlett's Test.....	38
Table 4.3: Factor extraction using Maximum Likelihood.....	39
Table 4.4: Item loading per Factor.....	42
Table 4.5: Items and item codes of Supervisor monitoring students' research progress.....	45
Table 4.6: Items and item codes of research oversight role.....	46
Table 4.7: Items and item codes of Supervisor selection.....	48
Table 4.8: Items and item codes of research quality work	49
Table 4.9: Summary of reliability test results.....	51
Table 4.10: Item total statics of research supervision.....	53
Table 4.11: Item total statics of Supervisor selection.....	54
Table 4.12: Item total statics of Supervisors' oversight role.....	55
Table 4.13: Item total statics of research culture	56
Table 4.14: Supervisor Selection Results	59
Table 4.15: Declaration to research originality and quality work.....	61
Table 4.16: Supervisor monitoring research progress results.....	61
Table 4.17: Adequacy of supervisory skills.....	62
Table 4.18: Appraisal of Supervisors during Research Process.....	64.

A list of Acronym and Abbreviations

ER	Excellence in Research
ESRC	Economic and Social Research Council
ETP	Education and Training Policy
FGDs	Focus Group Discussion
HEP	Higher Education Policy
K U	Kabale University
KBE	Knowledge-Based Economy LDCs
KYU	Kyambogo University
MUST	Mbarara University of Science and Technology
GU	Gulu University
SU	Soroti University
NACHE	National Council for Higher Education
RQAA	Research Quality Assurance Agency for Higher Education
RAE	Research Assessment Exercise
R&D	Research and Development
RE	Research Excellence
RS	Research Site
RS1	Kyambogo University
RS2	Mbarara University
RS3	Kabale University
RS4	Soroti University
RS5	Gulu University
SPSS	Statistical Package for Social

Abstract

The study examined the development of research culture in public universities in Uganda, focusing on the experiences of university leaders, students, staff, and research fellows. It uses a descriptive mixed methodology, a theoretical framework, and case research to gain a deeper understanding of the concepts and variables in Uganda's public universities and research culture. The research paradigm includes pragmatic philosophy and epistemological and ontological approaches. The study, involved 166 Ugandan public university leaders, staff, and students, found that most universities submitted feasible policies to the national council for higher education, but improper policies and practices hindered research culture development. The research suggests strengthening practices and mechanisms with innovative alternatives to support research culture development in Ugandan public universities. The study findings also identified that, there were need for motivation mechanism, provision of incentives and essential factors that influences building a research culture and development. Some of the mechanism and critical path ways includes research training, research mentoring, and research funding and research functional framework to support Public Universities in research culture development. However, it also notable that, some Public University leaders were slow in decision making and actions towards successful research culture development. The implication is there were many factors underpin public universities in research development. The study therefore concludes that, public universities need alternatives reform and transformation appropriate strong research culture development and informed decision making in higher education system. The study suggests that public universities should align their research agenda with education policies, health, and socio-economic development. It recommends alternative measures, advanced research culture building approaches, teaching methods, and seminars. Adequate space and time for research fellows and academic staff are also recommended. The study also suggests confirming national council education policy to bridge research gaps and post into research culture building and development in Uganda

CHAPTER ONE: INTRODUCTION

1.0 Introduction

The study explores the challenges faced by public universities and research culture development in emerging economies, particularly Uganda, in the Great Lakes Region of East Africa. It focuses on the education system, research questions, scope, conceptual framework, and conclusion of the study.

1.1. Background Historically

The global perspective, Robertson (2010) recently argued, that over the course of three decades, many countries have moved from the educating system of university education, and research is given much emphasis and attention in Global, continental, regional and Public (Simuforosa and Wiseman 2015). The cornerstone of a successful University education system, seeking both to produce groundbreaking knowledge and provide quality education, and in turn, foster the socio-economic growth of a nation, is grounded in research innovations.

As a result, research increasingly sits at the top public policy agendas, and now constitutes a high-stake undertaking for Universities (Leathwood & Read, 2013; Cloete, Bunting & Maassen, 2015; Shin & Lee, 2015; Hladchenko, de Boer & Westerheijden, 2016). The World Declaration on University Education in the 21st Century (UNESCO, 1998, 2015), for example, insists that University education should undertake research as an integral part of their respective missions. Similarly, the World Bank's reports *Constructing Knowledge Societies* and *Accelerating the monitoring* (World Bank, 2002, 2008) urge developing countries to improve University research in order for sustainable development to emerge. Support for University research can also be observed through different countries' development strategies, education policies and official speeches from the ministries of education in the Great Lakes Region of East Africa. Countries such as the United Kingdom, Australia, Hong Kong, South Africa and New Zealand have, in recent decades, instituted policies that link University education funding to university research performance, as a measure of the growing significance of research.

Research receives much emphasis and attention in global, regional and Public policy agendas and reforms, because it is central to the facilitation of the effective engagement with the teaching and community service functions usually performed by Universities (Chapman & Austin, 2002). In fact, research produces and preserves knowledge; teaching transmits this knowledge to develop skilled personnel; and community service transfers and applies the knowledge to improve productivity and the standard of living knowledge and it adds value to the existing knowledge in the society. That is research serve for the two functions of teaching and community service to be effectively performed, knowledge must be present; it is the function and duty of research to produce and advance this knowledge.

1.1.2 Theoretical Perspective.

There are a number of theoretical perspectives that will be used to ground this study. This section has reviewed both the theoretical and empirical literature around the development of a research culture in University education. Theories discuss strategies that are used to develop research in Universities and establish the knowledge gap that warrants further investigation (Akalu, 2014).

From these theories reviewed, are underpinning the study's topic in its context, revealed the knowledge gap and indicated how the present study could fill this knowledge gap. This also clarified the research questions that were formulated, a theoretical and conceptual framework to guide the study (Farjoun et al., 2015). Interpretivism, feminism, and positivism are suitable theories for studying human culture and practice patterns. Positivism suggests that knowledge can be objectively obtained from humans by measuring and observing these patterns, as they are similar to those of matter.

The Interpretivism theory posits that reality and human knowledge are social products, influenced by social actors who contribute to their development. Humans are sentient beings capable of thinking and feeling, reacting to stimuli, and interpreting them before making appropriate decisions (Crotty, 1998). Feminist perspectives explore the influence of gender on human interactions and societal practices, particularly in the context of university education policy. They focus on addressing existing inequalities and regalties in research and aiming to

level the playing field by changing the research culture (Azzi, 2017). The interpretive perspective aligns with the anti-foundationalism ontological position and social constructivism epistemology and can be reliably applied to the University education system and research culture.

1.1.3 Conceptual perspective

1.1.3.1. The concept of university education

Defining the phrase ‘University education’ presents a daunting challenge despite it being widely used, as some mistakenly associate it with further education, which also refers to post-secondary education but is not part of university education. In brief, University education principally describes post-secondary learning that takes place at universities and colleges, whose courses lead to the award of undergraduate and postgraduate degrees and other professional qualifications.

University education does not commence and end with the Universities. It covers diverse types of universities: Universities, polytechnics, and colleges of university education among them. Moreover, University education is primarily authorized to offer degree programs at undergraduate and postgraduate levels that take a minimum of three to four years to achieve completion. Although a university education is initially recognized as a degree conferment University, it can also offer other professional qualifications including certificates, diplomas and University diplomas. Degree programs offered at this University s are classified as Undergraduate, which constitute bachelor degrees, and Postgraduate, which is made up of Master and Doctoral degrees. These credentials are universally recognized as representing specialized expertise and skills (Howells et al., 2012). A university education should foster graduate competencies, appreciate diverse knowledge, and foster a reflective, creative, and ethical approach to serve communities.

(Gibson, 2017)&(Bank, 2018). This study explores the learning environment in universities, focusing on advanced research activities to develop graduate attributes and competencies among learners across various public universities.

1.1.3.2 Conceptualizing research culture

The understanding of ‘research culture’ in the context of this study is important because the concepts forming ‘research culture’, i.e., ‘research’ and ‘culture’ have a research report meaning (Gurbutt & Cragg, 2019). Again, the emerging nature of research culture in University education as an academic area of study necessitates this operationalization. To ensure clarity in defining research culture in the present study, each of the terms ‘research’ and ‘culture’ is first clarified separately (Gibson, 2017).

1.1.3.3 The concept of research

Controversies have arisen among university education, academics, evaluators and funding agencies on how exactly research should be defined and how its output could be measured (Hazelkorn, 2005; Morgan-Jones et al., 2013). Research, especially in the University setting, has traditionally been associated with discovery or to put it differently, searching for something new, in which the findings are submitted to a vetting process in journals for publications.

Jalote, (2020) The conceptualization of research culture is criticized for focusing solely on basic research and excluding applied research, suggesting that a more comprehensive definition of research is needed. Thus, research is defined as a systematic and creative process of using and organizing existing knowledge that leads to the production of new knowledge and/or generation of new concepts, methodologies and understandings that will provide a solution to or impact a given problem (Alina et al., 2021);(Marie, 2021).

Such a conception of research implies that the product or findings of research in given field should make a theoretical contribution to the body of knowledge (basic research). Indeed, the product or findings of research should make a practical contribution or being useful in developing new or making significant improvements to existing products or services (Massaro, 2021); (Alina et al., 2021)). Research, in this sense, includes undertaking to generate or improve

knowledge that will usually meet the research clients' immediate needs; for instance, knowledge for teaching and decision making.

1.1.3.4 The concept of culture

The concept of culture has its roots in the field of anthropology, and it can be traced back to the late 19th century (Sotirova, 2021). Anthropologists Kroeber and Kluckhohn in 1952 examined 164 definitions of culture and conclusively established that culture involves the patterns of behaving, feeling and reacting and the unstated habitual ways of thinking, feeling and reacting, that characterize the ways specific members of the society deal with their problems (Roberson, 2017); (Harikkala-Laihinien, 2020). In brief, culture refers to the values and beliefs shared by members of a society.

1.1.3.5 The concept of research culture

The concept of research culture has been generally defined as a system of shared attitudes or shared basic assumptions concerning research. Žukauskas et al., (2018) defines research culture as an “intellectual seedbed required for sustainable and productive research activity.” According to (Miller, 2019); (OECD, 2021) research culture is also “a lived worldview grounded in values and beliefs that surface in a dedication to the pursuit of excellence in discovering and refining knowledge for the betterment of humankind” .

Carrizo & Pedro, (2019) also define research culture as “shared values, assumptions, beliefs, rituals and other forms of culture and practices whose central focus is the acceptance and recognition of research practice and output as valued, worthwhile and pre-eminent activity”. The present study operationalizes research culture development using (Jalote, 2020) comprehensive definition, showing that the research culture reflects the attitudes, ideals and beliefs regarding research within the organization held by both the management and the members. As the organization or University does not exist in a vacuum, there are external factors, especially government policies, which can shape the culture of research within the University, and which ought to be taken into account (Botha & Vilyte, 2021). Therefore, it is reasonable to add that research culture constitutes the beliefs, attitudes and ideals about research within the University

held by both the staff and management and as stimulated by the government policies at the public level.

1.1.4 Contextual perspective.

The Public council for higher education sector has engaged University as well as a public University just like many other Universities in the mentioned category; quality has remained a big challenge among them (Stadler et al., 2021). Developments in education and attendant practices take different forms and structures in different countries around the world. It is thus vital to analyses the context of the present study the Republic of Uganda in order to familiarize the reader with the country's geographical and political characteristics as well as education developments and practices. This analysis also helps the researcher to shade-light and illuminate on salient points at both the Public and University al level that warranted the empirical investigation in this study (Cagica et al., 2021). This section provides a comprehensive overview of Uganda, including its political roots, economy, population, official languages, university education system, and research culture development structure

1.2. Problem Statement of the study.

The government of Uganda has a National Council Higher Education (NCHE) sector that is mandated to regulate, monitor and oversee the operation system of higher education. The national Council of higher education ensure that there are appropriate policies and the strategies for higher education learning and research culture development is required produce quality research work (Halperin & Heath, 2020). Efforts and huge sums of money invested in regard to higher education offers quality services and research culture development seem not to be eminent. Although efforts have been made by the government of Uganda through the council of higher education and other forums it seems there is no research culture developed as expected (A.G, 2021). It is against that, scenario in Uganda that trigged the research and curiosity of investing into Public University education sector and research culture. It is also evidenced in developed Uganda's strategies, it is reasonable to conclude that the quality of research within Ugandan Universities is accorded the status it deserves and paradigm shift so as to realize a

viable and development. Barling, (2023) contends that, experience from the researcher's workplace shows that the levels of research quality and productivity of the Universities in Uganda is low, with some students and members of academic staff not producing significant research field-based papers or publications over a period of time. Despite effort made by national council of higher education to encourage Universities within the country to offer quality education services, research is still a major concern that calls for attention. While some members of academic staff in Uganda are less involved in research, the country, as stipulated in its National Development Vision 2040, is seeking to "graduate from being a least developed country to a middle-income country earns (Council, 2021). The Country has a high level of human development, whose people are engrained with creativity and innovativeness to respond to the development challenges and effectively compete regionally and internationally" (Republic of Uganda). This Development Vision recognizes the significance of knowledge in spearheading the country's development. To materialize the 2040 National Development Vision, it is imperative for Universities in Uganda to develop a research culture that is linked to national development prospects. The absence of a research culture which is defined as philosophies, policies and activities engaged to undertake research on a continuous basis could retard social and economic growth of Uganda and East Africa in general (Büssing, 2021). Uganda can import scientific knowledge and technology while hiring expatriates to solve problems. A researcher is investigating the university education sector system to develop a research culture and provide evidence-based recommendations for best practices without compromising international standards.

1.3. General Objective of the Study

The studies comprehensive examines the Public Universities and develop a research culture development in Greater Lakes Region. In particular, the study sought to answer the following four research questions

1.3. Specific Objectives

1. To examine the challenges Public Universities encounter in research culture development in Uganda
2. To analyze the needs for research culture development in public universities of Uganda
3. To assess the influence National Council for Higher education policies on research culture development in Uganda
4. To establish the needs of Public Universities to build and foster research culture development in Uganda

1.3.1 Research Questions.

1. What challenges does Public University education face in developing a research culture in Uganda?
2. In what ways does Public University develop a research culture in Uganda?
3. How does the National Council for Higher education policy influence research culture development in Uganda?
4. What does the Public University need to do to build and foster a prosperous research culture in Uganda?

1.3.2 Hypothesis of the study

- (i) There is no influence of the challenges of Public University research culture development on the quality of research in Uganda.
- (ii) There is no influence of the National Council for Higher education policy research culture development in Uganda.
- (iii) There are no influence Research ethical committee rules and regulations in Public University research culture development in Uganda

1.4 Scope of the study.

1.4.1 Geographical Scope.

The study was carried out in selected Public Universities in Uganda. The Public University was: Kabale University (KU), Mbarara University of Science and Technology (MUST), Kyambogo University (KYU), Soroti University (SU) and Gulu University (GU). These Public Universities were purposively selected across Uganda cover all regions, focusing on variables under research culture development investigations.

1.4.2 Content Scope.

The study content scope involved an investigation of research culture development into public University education and development of research culture in teaching and research. The study explores research culture development in Ugandan public universities, analyzing National Council of Higher Education policies, challenges, expenditure, and autonomy's impact on quality research assurance in public Universities

1.4.3 Time Scope.

The study time scope involved the period between 2018 -2024 since it is during this period that reports from National Council of Higher education about the situation in Public University. The study focused on Uganda Public University's challenges and setbacks between 2018-2024. This period of times was selected due to the highlighting the negative impact of research culture development on the quality of research work as required by the National Council of Higher Education and reports in Uganda.

1.5 Conceptual framework

INDEPENDENT VARIABLE DEPENDENT VARIABLE

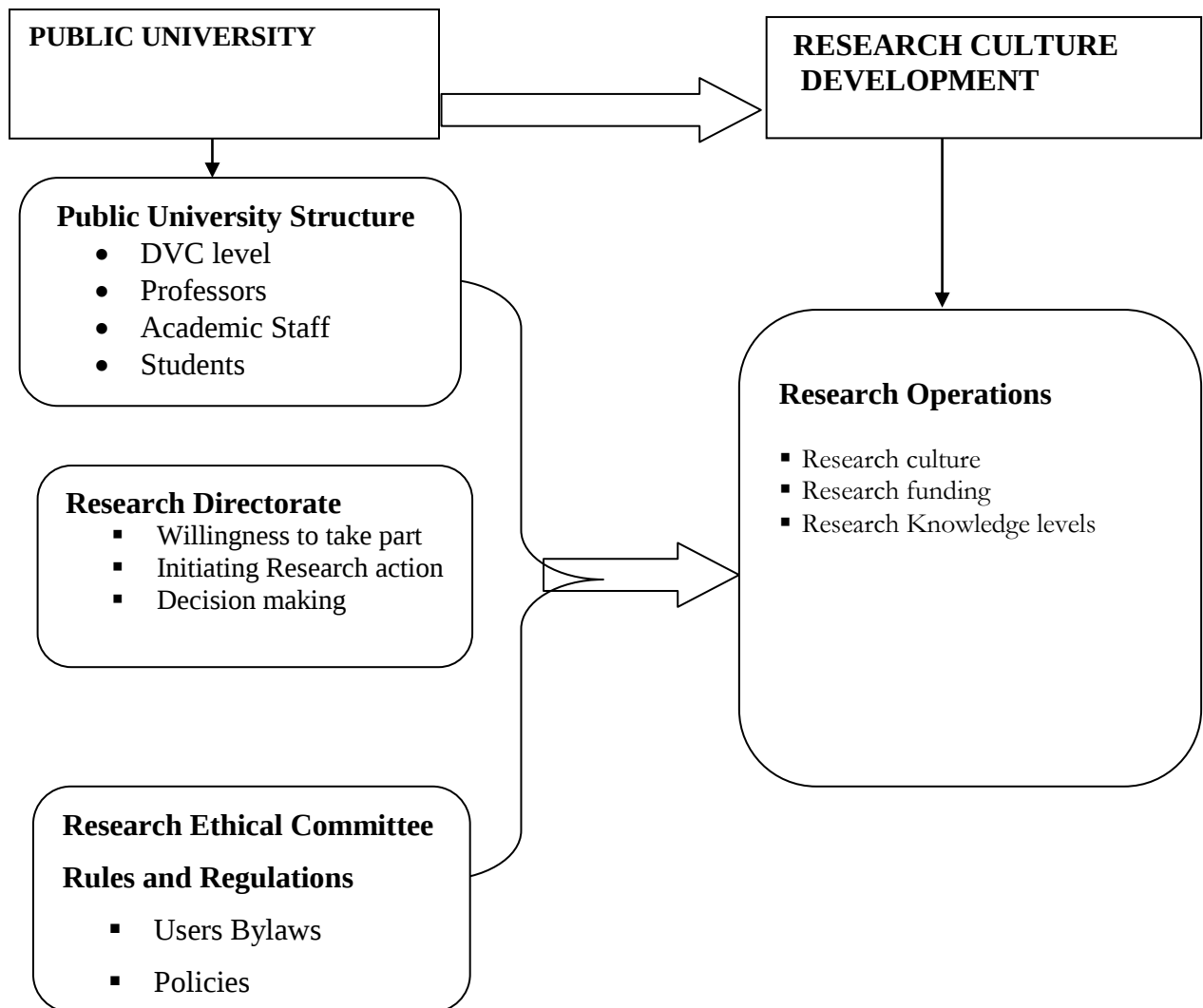


Figure 3-1 Conceptual Framework Guiding the Study Source: Adapted from Stufflebeam (1971)

The conceptual framework demonstration of how key concepts in university education sector and constructs of the present study interaction in actual research culture settings, the study employs a conceptual framework. Metcalfe (2008) introduced a framework for analyzing the research culture development of research in Public University education. Public University research

culture practices, including mission, support, management, and translation, are crucial for academic and industrial competitiveness, ensuring funding, training, leadership, evaluation, and ethical issues. Although Metcalfe's (2008) provides informative concepts. The study provides an analytical tool for understanding research within university education and developing a research culture in Public University. It focuses on identifying perspectives of education and stakeholders for improving research quality in Ugandan Universities and comparing them to other universities in the Great Lakes of East Africa.

1.6 Summary and Conclusion

This chapter of the thesis provides an overview of research culture building and development in Uganda's public universities. It clearly demonstrates the motivation for the study and goes on to highlight the concepts of research culture in university education sector. The thesis explores research culture building and development in Uganda's public universities, focusing on the historical background, problem, research questions, scope, conceptual framework, and conclusion. It is organized into eight chapters, each addressing core concepts in university education.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter focuses on the literature on public Universities and research culture development based on referential framework and theories that affirm the ground for the research culture building and development in the Great Lakes Region of East Africa, Uganda in particular. The referential framework choice of prototype design focuses on the core research variables under investigations. The choice for this study's referential framework rotates on research culture and research professional career development in public Universities. It entails the scientific research of investigations grounded on organization culture theory, border crossing theory and practices that produces knowledge from other academic fields and this knowledge is crucial for the research growth and innovations in universities. The study uses the referential framework and research cultures theories to guide its research. It adopts organization culture theory to regulate and direct research into problem-solving in research culture building and career development in public universities. The study adopts three major approaches from research culture-based activities: knowledge production, knowledge transmission, and knowledge transfer. The chapter is organized into eight sections, including an introduction, theoretical framework, knowing-knowledge, knowing what knowledge, knowledge production, challenges faced by universities, empirical studies, and summary and conclusions.

2.2 Theoretical Framework

The study adopted an Organizational culture theory and practice of research action as propounded and cited by marline walker (1993). This theory focuses on the emerging interaction that contributes to developing of sub-social interaction the contemporary research culture setting perspective. The organization culture theory provides explanation and rigor of the sociological and anthropological interaction with the aim of research culture building. The theory presupposes that the University can develop and building the identity, values and beliefs that firmly ground its existence. Besides that, the study further used the theory in educational research and practices in teacher education as cited by (Astleitner, 2020). This theory plays a

significant role and it integrates theoretical knowledge that has traditional knowledge thoughts of university classroom with the experience of knowledge based in reality. In the same vain the study also adopted the border crossing process of moving between the research cultures theory and practices of different worlds (Alina et al., 2021). This theory states that students are asked to constantly border cross between disciplines in Universities and students tend to have the most difficulty border crossing into the discipline of science (Farazmand, 2023). Scientific research in higher education involves students participating in research experiences, learning science content, and gaining knowledge about the field through legitimate peripheral participation, enabling them to successfully cross into the scientific research culture (Chen & Steensma, 2021). Legitimate peripheral participation in research culture investigations was developed from research on apprenticeship in fields of scientific research. The critical engagement in scientific knowledge generation yielded the practices and eventually formed a research culture of knowledge. This referential framework synthesis the importance of the adopted theories and practices of research culture development and shows how they seek to replicate and support the context of social justice in research culture development and empowerment of the university.

2.3. Knowing- Knowledge

There is no single definition of the term “knowledge” on which scholars agree, although the term is widely used. Even though the dictionary defines knowledge as information, understanding and skills acquired through experience or education (Alareeni & Hamdan, 2022). A.G, (2021)affirms that, there is still an absence of consensus regarding the definition of knowledge in literature. Thus, in the present study, there is a need to conceptualize knowledge as it is generally understood particularly with regard to the KBE. Knowledge under the KBE is defined as “reasoning about information and data to actively enable performance, problem-solving, decision-making, learning and teaching” (Orgoványi-Gajdos, 2019). This implies that the conception of knowledge in relation to the KBE is often linked to professional intellect.

Critics have established a set boundary between knowledge and information. For example, (Akbar et al., (2023) contends that information purse is not knowledge. Information differs fundamentally from knowledge in terms of the purpose and power of each of them in facilitating

communication and the understanding of ideas. The purpose of information is a description of ideas while that of knowledge is action from those ideas. These actions are, nonetheless, instigated by knowledgeable people, who make choices and decisions and act upon the choices made (Medicine et al., 2016).

2.4.1 Know-what knowledge

Know-what knowledge refers to the knowledge of facts; for example, Uganda got independence in 1962 and the Normans invaded by the British. The knowledge of the rules and laws of accounting, and that of grammar and vocabulary in a given language also belong to this category of know-what knowledge (Roach, 2020). Know-what knowledge is also considered to be the most basic stage of knowledge – equivalent to information – that one needs in order to make a decision. The know-what knowledge is generally explicit and can easily be codified and shared. Experts in any profession must possess this type of knowledge for them to fulfill their jobs effectively (Wart & Dicke, 2016) Much of this knowledge is provided in undergraduate programs at University level and through reading and listening to various sources of information from domain experts and relevant scholars.

2.4.2 Know-why knowledge

Seidman, (2016) contends that to know-why knowledge can be understood as the big-picture view of something, or the why behind the what. This type of knowledge goes beyond the basic statement of a fact and establishes the reason for or the why of the stated fact. In so doing, know-why knowledge enables individuals to deal with unseen circumstances and unfamiliar interactions (Medicine et al., 2018). This type of knowledge, though, often belongs to the realm of information since it can be coded and shared. Scientific methods and procedures were established to guide the production or discovery of this type of knowledge.

According to Per-Olof et al., (2021) contend that, the production of know-why knowledge is frequently organized and conducted within specialized University s, such as Universities and research University s. This implies that knowledge of how to produce the know-why knowledge and people (scientifically-trained personnel) who could participate in the production of this

know-why should always be available (Eisenmann, 2021). Consequently, Universities play a crucial role in producing and reproducing know-why knowledge, necessitating the creation of professionally-trained human resources and expertise.

2.4.3 Know-how knowledge

(Longley et al., 2015) states that, know-how knowledge represents the ability to use the information one has to create or come up with something, such as the ability to translate learned knowledge or transform information into tangible real-life results. This type of knowledge differs considerably from information and often falls within the realm of tacit knowledge (Dzekashu, 2015). Universities can deliver and facilitate the sharing of know-how knowledge through the formation of students' discussions, research groups or teams and University networks. Know-how knowledge can also be delivered at universities by utilizing active forms of learning that merge theory and practice. One form of active learning is enquiry-based learning (EBL). EBL actively engages both teachers and students in the learning experience, encouraging them to search for new knowledge and to develop critical thinking, independence of thought, entrepreneurial skills, and the ability to deal with uncertainties (Rogers & Allen, 2019), (A.G, 2021) which is a basic feature of know-how knowledge.

2.4.4 Know-who knowledge

Know-who knowledge refers to knowledge of relationships, networks and contacts with individuals who possess know-what and know-how knowledge. To get access to this kind of knowledge or experts of know-who knowledge in an organization, it requires the formation of certain social interactions and relationships (O'Donoghue, 2024). Universities can successfully tap into this type of knowledge through encouraging and supporting internal and external networks and communities of practice such as research teams, mentoring programs and University-industry or community partnerships community engagement.

Franco et al., (2019) affirm that, know- who knowledge facilitates creativity and research culture innovation as it fosters collaboration and networking of people with diverse knowledge, skills and experiences. By and large, there are four types of knowledge under the KBE, and

different approaches and channels are used for mastering these four different types of knowledge.

2.5.1 Knowledge production

Since the introduction of innovative research in Universities and creative learning model, Universities have been considered to be primary producers of new knowledge (Nico & Ian, 2018). Although other research universities that engage in research-based knowledge production exist outside of the University domain, Universities in the present KBE will continue advancing the treasure and importance of knowledge (chand, 2017), (Nico & Ian, 2018). The impact of University research is powerful and permeates various sectors, and is essential for economic competitiveness and the sustainable development of a nation (Ary et al., 2018) (Nowotny et al., 2011; Russell Group, 2012; Bloom et al., 2014; Kruss et al., 2015; Aebischer, 2015) Public universities play a crucial role in the University setting, providing skilled personnel for research and independent research, highlighting the importance of a prosperous higher education sector.

2.5.2 Knowledge transmission

Universities are mandate continue with their conventional role of transmitting knowledge, by developing and educating human resources through teaching and community engagement activities. Correspondingly, they need to provide a high level of skills and promote lifelong learning that emphasizes creativity, innovation and flexibility to engender continual adaptation to the KBE demands (Gurbutt & Cragg, 2019), (University et al., 2020a). Characteristics of the world's best performing and successful higher education systems in Finland, South Korea and North Carolina of the United States were investigated in Pillay's (Nico & Ian, 2018) Finland, South Korea, and North Carolina have successfully integrated their higher education universities with public development strategies, according to studies.

2.6.1 Challenges facing Universities regarding knowledge production

Universities in Uganda and Great Lakes Region of East Africa play a central role in the production, dissemination and transfer of knowledge, as the trend for private research University s to supplement the Universities' triple roles as in developed countries, has just begun to emerge

in Africa (Connelly, 2020) and even then on a rather limited scale. This implies that a strong higher education system in Africa is a prerequisite for Africa's development and accelerating catch-up with the world's leading economies. This section discusses the challenges, largely historically-based, which African Universities face in engaging in knowledge production roles (Luzón & Pérez-Llantada, 2022). The challenges discussed include colonial educational policies; international donor policies; the African political landscape; academic freedom and autonomy; brain-drain; and language used for academic and research

2.6.2 Importance of research in universities

(M & Stephen, 2021) argues that, this section provides the rationale for why staff working at Universities as academics and researchers should engage in research activity, and why a research culture needs to be developed in Universities (Senior et al., 2018). The benefits of research discussed include informing and enhancing the teaching and learning process; bolstering University al prestige and funding; enhancing the professional capital for academics; serving as an indicator of accountability; strengthening University industry links for knowledge and fostering socio-economic growth and development.

2.6.3 Informing and enhancing the teaching and learning process

Research in Universities informs and enhances the teaching and learning process particularly in maintaining the teaching and learning infrastructure and pedagogical practices. The teaching process leads to creating new disciplines, training new researchers and creating a venue for professional development for members of academic staff (Gao, 2019); (Pietsch, 2020). Knowledge created from research up skills academic staff members with new research methods and literature that eventually facilitates their research productivity and the supervision of students' research (Zami, 2019). This is particularly true when the University is committed to research-led teaching and learning. Research-led teaching and learning, which is a current practice and expectation for many established and aspiring research-intensive Universities Gibbs, (2017) employs academic staff's disciplinary research in order to enhance student teaching and learning outcomes. Research-led teaching and learning has been found to assist in the

development of research skills and critical thinking skills among students and academic staff members (Murtonen & Balloo, 2019)

2.7 Empirical research and scholarly communication

Competence in the global languages of academic and scientific communications, primarily English which has a research report global reach, is essential for University research communities (*World-Class Universities*, 2021) without which Universities cannot function efficiently in global research and knowledge networks. Most of African Universities operate in a European language, either English in Anglophone Africa, or French in Francophone Africa, or Portuguese in Lusophone Africa (Priest & Barine, 2019). Many academics in Africa adopt English, Portuguese or French as their second or third language. As such, these scholars have to use languages that were not spoken during their formative years of childhood and have not yet been thoroughly mastered (Douglass et al., 2017)

Arguably, the non-native language of academic learning and scholarly communication excludes the majority of African academics from participating in prestigious formal public discussions. King, (2013) affirms that, the attribute the rote learning situation prevalent in African classrooms to unfamiliarity with the language of instruction by both the teacher and the student. This unfamiliarity with the language of instruction limits the effective development of abstraction skills, system thinking and fluency in communication (Experts, 2020).

Academics in Africa are also required to be involved in international forums of knowledge production and dissemination, through presenting their findings in international conferences and publishing their research in international peer- reviewed journals. African academics are, thus, placed at a major disadvantage because of these language fluency issues (OECD, 2013). Recent studies have examined impediments researchers from non-English speaking countries face when attempting to publish their research findings in international, peer-reviewed English language journals (Achala, 2016). These studies found that writing in English is more taxing and time-consuming for non-native English speakers than for native speakers. Researchers experienced

difficulties in reading and paraphrasing the works of others and expressing clearly their own ideas in writing.

Such impediments ensure that only a few papers by African academics are accepted for publication in top-tier international journals, and those African- based articles which are published, rarely become citation classics in high- ranked international journals (Nations, 2019). This implies that when considering publishing their research in high-ranked international journals, African academics and researchers have to let the native English proof-readers polish the language of their manuscripts before sending to journals, which is expensive and thus call for a considerable investment of resources as well from governments and higher education stakeholders.

In summary, the discussion in this section has indicated major challenges that Africa has to contend with as a pre-condition for building a research culture within its higher education system. (El-Kogali & Krafft, 2020) contend that, the higher education sector in Uganda has been faring with these complex and multifaceted challenges discussed thus far in its endeavor to develop a research culture, is the question that the subsequent chapters of this study address, specifically the empirical chapters.

2. 8 Summary and conclusions

This chapter explores research culture and knowledge development in public university education, providing a framework, theories, and knowledge-based research. It highlights the significant role public universities play in knowledge production, transmission, and societal development. Through knowledge production, knowledge transmission and knowledge transfer in the field of academia research. The Universities plays a profound and vital role developing knowledge in the society through research innovations and practices. Universities in Uganda face challenges in fulfilling their mandate of knowledge production and dissemination, which contributes to the successful development of a research culture. To achieve this, Uganda and East Africa's governments must address these challenges and foster a prosperous research culture in Uganda.

CHAPTER THREE

THE RESEARCH METHODOLOGY

3.1 Introduction

This chapter describes the descriptive mixed research methodology that was employed to aid the data collection. This chapter discusses a descriptive mixed research methodology used for data collection, incorporating both qualitative and quantitative data. The study was based on a theoretical case research design, allowing for in-depth understanding of variables and utilizing four demission theoretical frameworks and research paradigms.(Marie, 2021) This chapter therefore is appropriated following the provided section as an listed : 3.1 introductory, section of the study 3.2 Research design of the study, 3.3 Philosophical paradigm underpinnings of the study, 3.4 Study populations, 3.5 Sample size. 3.6 Data collection methods, 3.7 Data collection instruments, 3.8 Quality control of the instruments for data collection 3.9 Data management procedures, followed by analysis of the study 3.10 Ethical considerations of the study.

The chapter presentation of the research design and methodology in this chapter is primarily organized around (Schneider, 2021) four basic questions for developing a research methodology framework, which include procedures used to collect and analyze data connected to a given study's research questions or hypotheses. Tight, (2017) defines methodology as the plan of action, design or strategy behind the specific methods' choice and use. Theoretical perspective refers to the philosophical position underpinning the methodology and, thus, providing a setting for the process and creating a foundation for its logic and criteria. Finally, Titchiner, (2019)defines epistemology as the theory of knowledge rooted in the theoretical perspective and

thus the methodology. The study employed a mixed method to enable collection of both qualitative and quantitative data as advanced in (Creswell & Creswell, 2017). The study guided by the philosophy and research paradigm position of pragmatism. University education systems are needed a control policy of the University's research and affirm ground of research culture. The study also used stakeholder's theory argued that every legitimate person or community participating in the activities of a firm or organization (Almalki, 2016). It is presumed that, by doing the communities are to obtain benefits of the University role in higher education system and development of research culture. Universities are mandated to innovatively generate knowledge through research, that is the priority of the interest of all legitimate stakeholders in education sector (Naman et al., 2019),

3.2 Research design

The study adopted a case research design, this design enabled deeper understanding of the variables under investigation and arrive at the ultimate reality of the study (Houser, 2021). Jalote, (2020) defines a research design as the overall plan or strategy for conducting research and contends that, the research design is applied because of its distinctive characteristics to enable the discovery of knowledge and help the study to get ultimate reality. The study was grounded on interpretivism and positivism theoretical positions. The positivism posts into the behavioral change enhance forming a desired research culture (Maier, 2024). The deeper investigation will lead to clear understanding of the study variables and ultimate reality of the knowledge claims on the phenomenon of university education system and development of research culture. A case design will be used since the study will deal with the selected case of Private Universities (Gibson, 2017). The study will adopt a case design and research paradigm mainly following the philosophy of Edmund Hassel whose epistemology and ontological view stands that reality is subjective (Hamlin, 2015).

3.3 Philosophical underpinnings of the study.

The study will further adopted philosophical underpinnings of empirical study and knowledge required to answer the questions of the method choice and design that posts into a positivism paradigm which supports the expressions of the epistemological and ontological concepts (Alina et al., 2021). The adopted approach in the study allows the endeavor to establish the truth of knowledge claims and leads to arrive at the ultimate reality (Patrick, 2019);(Roach, 2020) . In the same vein Kuhn (2015) &(Ritchie et al., 2013) contends that a case study design gathers data from the sampled population at a particular time and provides in-depth understanding of the variables under study. The design and research paradigm enabled clear understanding the extent to which University education system was going through and its influence in research culture development in public Universities.

3.4 Study Population

The study population included senior University Leaders, academic staff, research fellow officials and policy makers in the public University (Tandberg et al., 2018). At the University level, the research participants include Deputy Vice-Chancellors (Academic) and (Research), Directors of Research and Publications, Faculty Deans, Academic staff members and Postgraduate Students. These were drawn from Kabale University, Mbarara Science and Technology, Kyambogo University, Soroti University and Gulu respectively. Accordingly, the study went on target populations and unit of inquiry. The total numbers of 240 research participants were targeted to be engaged into the study and served as unit of inquiry in the study. The units of inquiry were drawn from Public University located in all the four regions of Uganda (Bolton et al., 2024). These included western, central region, Eastern and Northern region of Uganda. These units of inquiry members were selected using stratified sampling, purposive and simple random sampling strategies. The research participants of this study were scientifically drawn from the unit of analysis due to the fact that they had direct stake in research work and culture development (Žukauskas et al., 2018).

Table 1.2: Population and Sample Size

CATEGORY	CESSIBLE POPULAION	SAMPLE SIZE
Post graduate Stdnts	110	81
Deans and head of departments	16	16
Academic Staff	37	33
Doctors' professors	24	22
Members research direct committee	18	17
Top Management Members of University	11	11
Total	240	180

(Source: Staff and postgraduate students and staff from Public University under study in Uganda.2021)

3.5: Sample Size of the study

The sample size were determined by using scientific approach of Krejcie and Morgan table, this helped in arriving at the size of the sample population (Bolton et al., 2024). The sample size enabled the researcher collect the necessary data for this study. The sample size, in the table were arrived at by the researcher using the Krejcie and Morgan scientific formula of 1970, of 5% margin error, that was approved by relevant scholars. The sample and sampling have often been a contentious issue in qualitative studies.

Resources, (2021) defines a sample as “a number of people or things taken from a larger group and used in tests to provide information about the group”. Similarly, the defines a sample as “a portion of that is representative of a whole.” These definitions show that a sample is a subset but with all characteristics of the population it represents. Purposive and simple random sampling techniques will be employed in the study.

3.6 Data collection methods

The study adopted the mixed method with multiple choice questions main to enable the collection of both quantitative and qualitative data (Creswell & Creswell, 2017). The survey method was used to respondents and interviews were used to the key informants. The focus group discussion and Documentary review were also employed in the study. A number of relevant documents were reviewed to compliment the field study findings.

3.6.1 Survey Method

The survey method was used whereby quantitative data was gathered guided by closed end questionnaires and multiple choice instruments in the study (Luhanga & Harbaugh, 2021). This survey method was used because it is the most common and popular method to collect data in social science research

3.6.2 Interviews

Marie, (2021) the interview was used to help the researcher to gather valid and reliable data from the key informants of the study. The interviews were adopted to enable the researcher to obtain first hand data direct from the key informants who are appropriate to research questions and objectives of the study. Interview second main in data collection method was to give the feel of the research culture development in universities (Fotiadis et al., 2021). Each research question of the study was capturing the relevant data. The interviews were used because they allowed interaction with the research informants and enabled probing. The interrogation of key informants enhanced deeper understanding and getting detailed information.

3.6.3 Focus group discussions

The study further employed focused group discussion method to help the researcher to gather valid and reliable data from the key discussants or participants in the study (Nguyen et al., 2016). The discussion session brought about the interactive approach among the research participants. This method is believed to be suitable because it enabled the researcher to obtain data direct from the discussants and key informants of the study (Dima, 2016). This method provided in-depth insights and resolution from the discussions of the variables under study.

3.6.4 Documents Reviews.

Prisacariu, (2015) defines secondary data as data that already exists; this kind of information is refined by other scholars. This method is highly supplementary, aims at supporting arguments from the survey, interviews, focus group discussions and observation methods (Sharma & Nayar, 2021). Document review was another method adopted in data collection approaches. This involved reviewing relevant documents policy documents from National Council of Higher education, Circulars', university research policy, research funding policy among others. The research quality assurance policies, teaching, research culture, annual reports, and strategic plans, among others (UNESCO, 2019). Documents reviewed were selected purposively since they had relevant information on certain aspects variables under study.

3.7 Data collection instruments

3.7.1 Questionnaire

These data collection instruments were chosen because they were most appropriate tools for collecting data from large sample of data. Questionnaires were utilized for this research study due to their usefulness in quantitative data collection (Alina et al., 2021). Agreeably questionnaires had advantages over some other types of data collection tools in that they are cheap and affordable, do not require as much effort from the questionnaire and often have standardized answers that make it simple to compile large data. Mustafa, (2023) contend that, this kind of instruments were more suitable as compared to other data collection instruments. This self-administered questionnaire entailed quantitative questions positively formulated,

closed-ended and ranked on a five-point Likert scale (where 1-strongly agree, 2-agree, 3-partial agree, 4-disagree, and 5-strongly agree).

3.7.2 Interview guide

Interview guides were the main data collection tools. These instruments of data collection had open ended items that enabled the researcher to get the reality of the variables under study (Resources, 2021b). The key informants were engaged through asking relevant questions on research culture development while taking notes (A.G, 2021). The interview guides were used because they allowed provoking key informants for detailed responses. Further facial expressions and moods of key participants when asked rather sensitive research culture building concepts and responding to questions (Kleef et al., 2016) posed in the study.

3.7.3 Focus group discussions guide

The study further employed focused group discussion guide to help the researcher to gather valid and reliable data from the discussants of the study (Jastrzębski, 2022). The discussion demission will bring the interactive approach among the participants.

3.7.4 Document review guide.

A documents review guide instrument of data collection were used (Welter & Urbano, 2020). Documents on research quality assurance and guidance were enlisted and reviewed. The check list entailed purposively selected documents from the National Council of Higher education, policies and frameworks for public universities. The staff promotion criteria record available, academic staff recruitment, their qualifications, student quality, annual reports, and postgraduate graduation records among others were reviewed.

3.8. Quality control

The instruments of data collection were tested and pre-tested for the purposes of data quality control and management in research cannot be understated. Good research requires testing and pre-testing of data validity and reliability. The piloting of the instruments of research is taken to

be very important in research (Alina et al., 2021)& (Mustafa, 2023). However, some researchers in qualitative studies, as they still prefer to use the terminology of ‘validity’ and ‘reliability’, cautioning that determining validity and reliability in qualitative research differs from quantitative research. The overriding argument is that the validity and reliability concepts can be applied in all kinds of research, as all research undertakings have one central goal of establishing plausible and credible findings (Jalote, 2020)& (Mustafa, 2023). In qualitative research, validity means checking for the accuracy of the findings by employing identifiable procedures involving the researcher, the participant or the readers of the account

3.8.1 Validity

The validity of the instrument is determined after testing of tools of the study. (Kothari & Garg, 2014) noted that, validity is the most critical criterion that indicates the degree to which an instrument measures what it is supposed to measure and can also be thought of as utility. (Zhang & Lyu, 2014) defined validity as; “the extent to which the differences found in a measuring instrument reflect the true differences among the items being tested”.

(Kothari & Garg, 2014) argues that accept items in the instrument with validity coefficients of at least 0.70 as valid and reliable in research. Validity was determined by using Content Validity Index (C.V.I). $C.V.I = \frac{\text{items rated three (3) or four (4) by both judges}}{\text{total number of items in the questionnaire}}$. After calculating the C.V.I, if the results are above 0.7, the instrument is valid.

Validity seeks to describe, understand, represent or explain social phenomenon in the real world, and if the given explanation fits a given description. (Henseler et al., 2015) state that, validity refers to the degree of the congruence between the explanation of the phenomenon and the realities of the world. Therefore, validity is not a single fixed or universal concept. It is rather a contingent construct inescapably grounded in the process and intentions of a particular research methodology.

3.8.2 Reliability

Reliability is a measure of the degree to which the research instruments yield consistent results or data after repeated trials (Sharma & Nayar, 2021). For qualitative data, the researcher gave the instruments to the experts who confirmed that responses against previous answers are appropriate and detected questions likely to elicit inadmissible responses (Berchtold, 2016). The researcher also used the standardized methods and protocols for capturing observations, alongside recording forms with clear instructions.

Lastly, a pilot of the instrument in a time lapse of 2 weeks enabled establishment of consistency in responses. According to (Berchtold, 2016), test-retest reliability can be used to measure the extent to which the instrument can produce consistent scores when the same group of individuals is repeatedly measured under same conditions. The results from the pre-test helped to modify the items in the instruments. In this study, the pilot study involved a small number of respondents, mainly subject experts, to help fine-tune the appropriateness of the questions and their understandability (Sekaran & Bougie, 2013).

3.9 Data management

The data collected in the study from questionnaires, interviews, focused group discussion and documentary reviews will be managed properly in accordance to research requirements (Žukauskas et al., 2018). All the data collected will be locked into the cardboard. Before starting the analysis of study, researcher will do the clean of the data as part of data management. Thereafter, collected data is cleaned for appropriateness it will be analyzed using SPSS, Smart PLS and thematic analysis as relevant techniques as recommended in the study (Al-Emran & Shaalan, 2021). The researcher will observe ethical considerations in data collection and management as required in research profession.

3.9.1 Data Analysis Method

The researcher conducted a number of tests to the quantitative data to check if it meets the statistical requirements for the use of SPSS and used Smart PLS software to generate Structural Equation Modeling (SEM) (Cooksey, 2020). Initial descriptive statistics revealed normality in the data distributions owing to the skewness and kurtosis levels being within accepted tolerances.

In this study the used Smart PLS that helped in a multivariate statistical analysis technique to investigate the relationship between the study variables. SEM allows researchers simultaneously predict multiple outcome variables from multiple predictors or exogenous variables in the same model, while allowing only one endogenous variable in a model in regression analysis. This is an important advantage of SEM, which also enables researcher to investigate the interrelationships between latent and observable variables in complex models (Byrne, 2001; Wan, 2002).

3.9.2 Qualitative data analysis

The research developed themes in the qualitative data collected as guided by the study questions. The thematic data analysis approach used; helped clustering qualitative data and developing central conclusion according to patterns of thematic structure in line with study (Cassell et al., 2017). The data collected from the documentary review and focused group discussion was also analyzed using the thematic analysis, because it proved to be a powerful approach to handle huge forms data and generate robust interpretation while maintaining its original context. The purpose of documentary review and focus group discussion was to consolidate and field findings facts on research culture development in public Universities. The documents reviewed provided significant and substantial contribution to the perceived finding from the instruments of data collection and expert opinion gathers during interviews (Jason & Glenwick, 2016).

3.10. Ethical consideration

The ethical issues of research were considered in this study. The research thought for approval of the study and obtained a letter of introduction from Silenus University. The researcher sought for permission from the research participants, requested for consent and always assured participants confidentiality. To ensure informed consent, respondents and all those who participated in this study, the researcher provided with all the relevant information about this study (Bast & Hawkins, 2012); (Saunders et al., 2012). This is to ensure that, they understood the nature of the study, rationale of the research and the benefits of the study. Furthermore, this study respected research participants' right to privacy.

The nature, timing and location of this research made it very imperative that ethics and rules of research will be upheld as required (Pietsch, 2020). Furthermore, considerations around right to privacy and deception, as well as protecting both the researcher and participants from harm. This research will consider confidentiality as ultra-important, owing to the ‘risky and sensitive’ nature of the answers given by many respondents. Deception arises when research participants’ understanding of the purpose of a study is different from the purpose the researcher wants to achieve (Sultan et al., 2021). To maintain confidentiality, it is important that those who decided to cooperate in the research do not suffer any negative effects resulting from publication of the research. This study, like political violence research, had many ‘skeletons to handle, too many closets to inspect.

3. 11 Research protocol

The researcher sought permission to conduct this study from relevant authorities. The researcher submitted a comprehensive request for the authorization of the ethical committee which is a prevalent standard for many research and educational Universities (Marschark & Knoors, 2020). The plain language statement was attached to the ethical application form showing procedures for data management and storage and assurances of the protection of study’s participants from harm. Agah et al., (2016) urges that, informed consent document was also attached to the ethical application promising the safety of the participants through guaranteeing that they would not risk their lives by participating in this study.

3.12 Informed consent

Informed consent in the present study was achieved by making participants aware of the purpose of the study, type and uses of the information being sought and the implications of their participation (Halperin & Heath, 2020). The researcher explained to participants the amount of time required for participation, methods and devices used for data collection, use of the data and issues of confidentiality as participants were promised that the study’s report or subsequent publications will not disclose their personal identity.

The foregoing explanations were openly issued prior to data collection using both verbal and written accounts. The researcher provided the plain language statement that describes the study. This chapter has presented the research design and methodology employed in the present study , which sought to find answers to the central question (Teater et al., 2016) affirms that, University education sector in Uganda developing a research culture.

3.13 Summary and conclusion

This chapter presents the methodology and theoretical framework the was adopted in the study. It described the research designed, philosophy and the paradigm that enabled ultimate understanding of the research culture development and knowledge claims. In this regard, the choices of the research design and methodology opted in this study were particularly relevant to the nature and overall purpose of the study as well as the study's research questions. An actual sample of 166 research representatives was engaged. These included senior University leaders, research fellow officers, University Deans, academic staff members and postgraduate students, were selected through purposive and stratified sampling. Quantitative data was collected using questionnaires while Qualitative data were collected through face-to-face interviews, FGDs and documentary review (Terry & Hayfield, 2021).

CHAPTER FOUR:

PRESENTATION OF FINDING, ANALYSIS, INTEPRETATION AND DISCUSSION

4.1 Introduction

This chapter analyzes research culture and development practices in public universities of Uganda, focusing on their conceptualization of research practices and norms. The study aims to establish the findings from four primary research questions, presenting results in sections such as introduction, response rate and data screening, demographic distribution, factor coding, reliability of research supervisors, structural equation model, research supervisor and quality of research work, discussion of findings, crude conception of research, importance of research, and summary and conclusion.

4.2 Response rate and Data screening

These study findings indicate that, data collected of 166 who were engaged out of the target 180 research participants giving a response rate of 92.2%. This response rate is high enough to ensure more accurate survey results (Creswell & Creswell, 2017). While 7.8% of the targeted research participated did not participate in the study. The implication is that 7.8% is low basing on the targeted research participants and it does not have a significant effect on the results of the study. The 92.2% participants had a high response rate and it significantly impacted on the results and lessons learnt from the study.

4.3 Demographics data distribution

The bio demographic data from the research participants were clearly presented and the finding indicates age range, education level, experience, gender, age, levels of education, training and position held in the public universities. This demographic data as guided the research to determine whether the research participants were adequate representative of the target population in this study. Below in table 4.1 are the results.

Table 4. 1: Demographic results as a percentage

Gender	Percentages %
Male	76.5
Female	23.5
Age bracket	
<20 years	0.6
20-29	13.9
30-39	47.2
40-49	25.3
>50	12.7
Level of education	
Certificate	0.0
Diploma	3.0
Degree	71.7
Masters	23.5
PhD	1.8
Training	
Yes	69.9
No	30.1
Position	
Officer	59.6
Middle manager	24.7
Senior manager	13.3
Top manager	2.4
Experience	
<1 year	4.2
1-3	39.2
4-6	31.3

7-9	16.9
>10	8.4

Source: Primary data (2024)

From table 4.1 above, all the research participants registered minimum qualification of Masters (97% with at least a degree). These results indicate that the respondents had reasonably good education qualifications hence they were able to read, understand the questionnaire and give appropriate responses. In addition, more than 90% of the participants had work experience of more than five years. Furthermore, majority (69.9%) of the participants had received Research skills professional training on research process. This confirms that research participants were able to comprehend the issues of public University and research culture development variables under investigation in this study.

4.4 The challenges of Public Universities on research culture development

The findings of data analysis in this study identified several categories or sub-themes which were then used to form five major themes that constitute major challenges that Public Ugandan Universities face in developing an appropriate research culture. These challenges included a number of factors that hampers research culture development among public universities, these included: fragmented connection with research stakeholders, low level of research funding, inappropriate of reading and writing culture, heavy teaching and administrative workload and inadequate guiding policies, inappropriate sensitization of research culture values and inexperienced academic staff in research agenda.

4.1 Connection among key research stakeholders

The findings established the existence of a fragmented connection among key research stakeholders in Uganda, particularly the triple Public Universities, the government and the wider community. This challenge has resulted in difficulties in conducting relevant research topics, getting funding, disseminating the research results for knowledge and recording the volume and impact of University research.

Research findings and knowledge generated from universities, for example, were not readily available at the public level. The research-based knowledge was not even readily available at the University level either, as, during fieldwork, the Universities under study had no comprehensive repositories of the research conducted at their university, let alone a comprehensive repository of the influence of their research to the community.

Researchers just think of research as their personal property, which is wrong, because research findings are supposed to be disseminated beyond the publication outlets so that the information reaches the targeted group. Similarly, one is left uninformed of how much research is produced from the University, how much research funding is provided to the University and what influence or impact the University research has on the wider community:

The uptake of research results and findings by the industry and policy makers remains minimal, and this leads to a perception of low relevance of research activities done by universities of university learning in the country. (Director of Research: RS3)

This statement suggests that the fragmented factors that hampered the use of results and dissemination of information regarding major research projects conducted by Public Universities and general research outputs produced by Public Universities. This situation resulted in not only the duplication of similar projects or themes by neighboring departments or Universities, but also gave a negative perception of the quality of research work towards the relevance of the Public University stakeholders within and the external community.

In Uganda the study indicates that, Public Universities tend to know, for instance, this group is work projects and align it towards the political agenda and all the government or Public University efforts are directed to that group research project. (DVC Principal: RS3)

The research participants in this study pointed out that the duplication of similar research projects has humped research culture development is not only confusing but also constituted a waste of research resources. The implication is that given the meager research resources available in Uganda, Public Universities need to refocus research to researches that inform policies and business community for socio-economic development of the county.

The study revealed that, Uganda Public Universities don't have research culture system of monitoring and enhancing the quality of research. The findings record clearly indicate how much research is conducted in public Universities remain in shaves due to the quality of research and because there has been a problem of not having a research agenda. The findings also indicated that there are delays specific allocation of funds for research to Public University which in the long run affects the interest and the quality of research work. The findings show that most of the academic staff and research fellows carry out from the donor funding sources, that's where now the issue research cultures are actually very difficult to embrace and uphold. (Public University DVC Officer: RS4)

As such, research participants commented that the government of Uganda should sponsor research work, as required and in so doing it will motivate the researchers and facilitate sharing of research outputs or results inform of publications. The implication herein is government of Uganda should not wait until problems have arisen then it provides funding for research work in order to underpin the problem at hand. One of the participants explained more on this: The government should create good research culture in public university and use the research work to solve the country's problems and challenges in the communities. We should have answers before we getting good research culture in time for better planning and development. And, we should disseminate our research findings and apply the research results to solving our country problems and executing various plans, because nowadays you do research and then the findings end up on the shelves. (Director of Research: RS5)

This statement implies that the country should have firm and strong research culture in order to answer for various issues using grounded research-based knowledge and skills of problem solving. The research approaches in planning and research-based knowledge provides better ways in solving various problems and implementing various projects. The implication is research culture is necessary in Public Universities and it's of significant values to assist unpacking the challenges in Uganda.

4.2 Low level of research funding

Participants in this study identified that, there is low research funding culture in Uganda. Having low funds is one of the most critical challenges that hamper the development of research culture in Uganda. The meager resources also affect the quality of research and the morale of research in Public Universities under study. It also came out very clearly some academic staff research depend primarily on donors and donor syndrome is very dangerous to research culture development in public University.

Due to the absence of comprehensive research repositories in the Public Universities under study or within the faculties, it was difficult to get statistical data regarding research sources of funds for academic staff members' and publications for the past five years. It is only now that one of the public Universities under study is attempting to set up such a database. The implication is clear that, there is no good research culture and practices in public universities.

During fieldwork, the Directorate of Research and post graduate of public Universities was hardly researching ethical committees and appropriate guidelines of post graduate students. The implications are research is culture is necessary and applying the database on an experimental basis is significant in Public Universities.

Nonetheless, there were indicators of research regulations and guidelines during interviews, the majority of academic staff indicated that they often have research without research ethical committees due to meager resources allocated for research. Some professors indicated that, they self-fund their research activities, sometimes using the donor sources which are often deemed inadequate and unreliable. The funding research mechanism in Ugandan public Universities leaves a lot to desire. However, this informs the study that we need to build a strong research culture and create reliable fund to support research work and activities. The implication here is that research resource allocations depend on the availability of the funds and this affects the quality of research as explained in the following statement.

The study reveals that Research funding is a problem in Ugandan Public Universities; the biggest problem is that the government is not having a direct sponsoring research agenda, the country

depends greatly on the external donors. Although Uganda is one the known countries in the Great Lakes Region of East Africa to have good public universities, the government spends one percent of the GDP in research and the hampers the research culture. (Faculty Dean: RS4)

Even when this funding could be available on a regular basis, participants in this study maintained that the 0.3% is too small to meet the research needs of the country. Although the findings also show that the government of Uganda through its fourth term president announced to increase R&D funding from 0.3 to one percent, beginning from the 2010/2011 fiscal year (Shoo, 2009), the 0.7% increment had yet to materialize during the writing of this report.

4.3 Inadequate reading and writing culture

The findings of this study indicate that the research culture of Ugandans is very low. Basing on that underlying factor reading culture among members of the public University is equally low. The research reveals that Ugandan community a strong approach towards research building and development if we are to have a steady progress in the field of academia and economic growth. Given the mission statements of the Public Universities under study, teaching learning, research and community engagement are core function of these Universities. The implication there is research culture and practices need to be strengthened policy guideline that: “

All academic staff are expected to spend 35-45% of their time on research activities”, it could be expected of a large percentage of academic staff to have at least one publication in a refereed journal/publisher or one manuscript undergoing review during fieldwork. On the contrary, the majority of academic staff, despite possessing postgraduate qualifications, did not have a single publication to their name or a manuscript under review.

As stated elsewhere in this report, a Master’s degree was the minimum education qualification for the academic staff who participated in this study. The following statement attests to the lack of a reading culture among members of the University research community:

Our students today are not eager to know new things. They do not want to carry out research and read widely, they depend on what we teach in classes which is very detrimental to developing countries. (Faculty Dean: RS5)

Another participant elaborated more on this:

Most postgraduate students and researchers' findings are very weak and not well grounded on theories and research paradigms. They review and copy research topics from previous researchers and they present them to be their own and that affects the quality of research. This is a result of failure to develop a strong research culture and practices in Public Universities (Postgraduate Student: RS5).

Although some research participants involved in this study attributed their possession of limited resources for research culture, and supervisors' morale alone in public universities in Uganda. It is clear that research culture has a significant bearing on the quality of research output. The participants from Public Universities under study encountered a number of challenges that affect research development during the interview. They were in their fifth and fourth year of service, without a single publication nor a manuscript under review. The implication is that research is not given adequate attention and yet it's a very significant role in the university's life and the country's improvement on the quality-of-service delivery.

The findings demonstrate that the unwillingness to engage in research by members of the University. Research was a result of lacking a reading and writing culture from even the lower levels of education: We don't have the spirit of reading, from the lower level of studies up to the Universities. If you don't have the reading culture automatically even if you become an Assistant Lecturer, you will just end up with that rank, because publishing, you know, needs one to read extensively. (Academic Staff: RS3)

Some participants who have an international experience further compared the reading culture of Ugandan academics with other East African countries and beyond: What we are missing here in Uganda is the aspect of reading culture. Reading culture is low; it is not as high as, say, in Kenya.

where I stayed for three years doing my Master's degree and Finland where I stayed for four years doing my PhD. (Academic Staff: RS3)

Moreover, senior University leaders involved in this study noted that the University research community missed critical research ideas as a result of their lack of reading culture. These senior University leaders commented on some academic staff who strongly believe that they conduct research for universities, and not because they are professionally obligated. This comment by senior University leaders was also confirmed in the following statement of one of the junior academic staff who provided reasons for limited research outputs they possess.

I don't have the morale to publish because in order to move from my current position to the next, a PhD is needed. I see what is important right now is to have my PhD first. Therefore, I concentrate much on looking for PhD scholarships. (Academic Staff: RS3)

This statement suggests that some academic staff view the activity of researching and publishing research results is reserved for senior academics with doctoral qualification. This view misses an important point that even faring with the rigors of postgraduate studies requires one to develop a culture of research and writing from early stages of career. The implication is that one cannot write if one does not read. Reading encourages one to acquire wisdom, ideas and writing skills, particularly when one reads extensively exemplary articles from peers in one's respective field.

4.4 Discussion of the findings

The discussion of the findings regarding the challenges of developing a research culture in Ugandan Public Universities is presented in this section. To maintain clarity, the discussion follows the order used to present the findings in section

4.5 Connection among key research stakeholders

This study has found the existence of a fragmented connection among Public Universities, industry and government, which are key research stakeholders in any country. As the findings reveals that, this challenge has resulted in difficulties in conducting relevant research topics,

getting funding, disseminating the research results for knowledge generated by the research studies.

Similar conclusions regarding the fragmented and disconnection among the three entities have been reached by other studies on research culture development in Public University in developing countries. The study concluded that many Public Universities in developing countries are detached from the government research agenda and the community by conducting research that is mostly driven by curiosity, rather than a need to find solutions to practical problems facing society or industries in the country where study is carried out. On the contrary, a mutual relationship resulting from having inappropriate research agenda among the three entities. When Public Universities are grounded into a well-developed research culture then they are bound to carry out research underpins industrial and government existing challenges in order to foster economic development (University et al., 2020b). The well-developed research culture makes these countries far better positioned in addressing and migrating their existing problems using scientific knowledge generation by research, making better production, transfer and translation generation knowledge into tangible realities in the community .

However, the database or records for each Public University indicate that, there is no firm and strong research culture developed in some of these Universities. Failure to having research culture and good research practices makes funding of research activities very difficult in many public universities. The implication is that even the quality research work is compromised and yet research is one of major roles and pillars of universities. University rating and academic staff promotion is based research work and research should well-funded and encouraged due to its usefulness.

Indeed, data reported in this study indicate that in many cases, the research conducted lies on the desks and shelves of responsible researchers. Therefore, public universities should ensure the research work carried out results are disseminated and also published for the communities' consumptions. Lacks publications and dissemination of results makes it very difficult to solve communities' problems using scientific knowledge place in some of the academic libraries, as

we use grey literature if rarely taken seriously for inclusion as part of the library collection makes life very difficult. With research culture and innovation, we expect to public Universities addressing day today community and industrial challenges using refresh ideas and new knowledge generated from research work. Thus, policy- makers and practitioners are usually unaware of what is taking place in Public Universities in terms of research, and are often uninformed of scientific knowledge evidence available in the Public Universities. The implication, is having good and practical research culture in public universities is very pertinent that could be used to support carrying out quality research work that can pave way for decision-making and practices in the countries for economic development.

Although academics and scientists can benefit from an academic journal article, policy-makers and practitioners may require a strong policy brief and research agenda to inform public with scientific audiences in problem solving. The implication here is public universities need to have firm research culture to support scholars and research fellows to make use of illustrated information leaflet or booklet written in scientific manner to improve on quality service delivery.

4.6. Low level of research funding

The findings indicated that generally there is a low level of research funding within Ugandan Public Universities. The low and meager funding mechanisms of research in public universities affected the quality of research work and the practices of research activities. The revealed that the main sources of research funds in Public Universities of Uganda are the government, donors and sometimes academic staff's own money to carry out research. The implication is that this compromises the quality of research work. It also indicated that 80% percent of most research conducted in Ugandan Public Universities is funded by donor sources, mostly from outside Uganda, followed by some self-funding initiatives taken by individual academic staff. What emerging implication here is that the government of Uganda only commits a small amount to support research activities. That alone affects Pubic Universities effort and research agenda despite its design strategies to promote research and innovations. Paradoxically Public Universities are guided a strong research policy statement that recognizes the centrality of

quality of research and innovations in developing countries (Chan, 2020). The government of Uganda remits only 0.3% of its GDP for research activities, which is too small to meet the research needs of Ugandan researchers and no wonder that public universities have inappropriate research culture developed. Without a strong research culture and good research practices we should not expect quality research work and publications in Uganda and probably in the entire Great Lakes Region of East Africa.

From research report perspective of this study, it is clear that research funding has remained a constant challenge and eventually affecting most Public Universities in developing countries, particularly Africa (Arndt et al., 2016); (Group, 2016), (*World-Class Universities*, 2021). Among the 19 surveyed countries in Africa, for example, only three Uganda, Malawi and South Africa were found to commit up to 1% of their GDP on research activities. As such, this funding limitation, as already stated, drives the Public University research community to over dependence on donor funding and unreliable self-funding sources. That scenario hinders and compromises the quality of research work, innovations and affects development of sustainable robust research activities.

Indeed, the impact of low research funding in Public University affects the quality of research and innovations. Low research funding may not seem to be a big problem on the surface, but it has significant bearing on countries development. In that vein it becomes a matter of grave concern to having appropriate research culture to inform Public universities and Scholars when one deeply analyzing scientific studies (Halperin & Heath, 2020). Firstly, the low level of research funding inadvertently encourages parochialism in research facing realities in Uganda today. This implies that quality research conducted tends to be localized, small-scale and lacking serious scholarship which is rooted into inappropriate research culture developed. The implication is that, public universities need to have good research culture developed to inform the researchers for quality research work

A significant portion of research in Uganda and entire Great Lakes Region of East Africa carry out research under bilateral or multilateral aid... such support can be as high as 70-90% of total

available research funds but it was notable such funding source is never reliable (Swilling et al., 2011, p.8). It is also not grounded or arched on a research culture. The implication here is that Public Universities need a firm research culture to guide researchers and scholars for better research work and innovation is the country is to move to middle income earners.

In light of this study, Public Universities relying too heavily on external donor support for their research is not only unsustainable course of action but also a flawed route of research culture development. By virtue of their economic power, bilateral and multilateral donor partners, for example, the World Bank gets involved directly in setting research education policies, priorities and research agendas in recipient-donor countries (Ha & Ngoc, 2020). The suggested policies by multilateral donors do not often match with the recipient countries' research agendas and priorities. This greatly affects the research culture development and development innovations of the country and the implication is that Uganda needs strong research culture to inform research practices and improve on the quality of research. In many cases the external funding coupled with its conditions does not aim to emancipate recipient countries from dependence, because there is little element of this donor funding that shows a sign of developing these recipient countries' own capabilities to formulate and implement research policies and priorities (Dudkowski, 2021).

In consequence, Public Universities need research culture individually to inform and guide researchers Uganda and entire East African countries. Uganda in particular needs research agenda and align it government agenda. Once these two aspects are in agreement the we can build and develop research culture in country. But when we are still heavily dependent on multilateral donors in general, it is very difficult to have well developed research culture in public universities the doldrums.

4.7 Inappropriate reading and writing culture

The findings of this study show that the research culture and reading was low among the Public University. The Public University in and research culture building and development is keeping aspect in Ugandan community. It is therefore imperative to instill and build strong and firm

foundation well ground on theory of social and research culture in Uganda. The weak reading culture among the Ugandans negatively impact on the research culture development. This aspect of low reading culture is something which in turn undermined their writing aptitude and their full participation in research activities.

Many academic staff members with Masters and doctoral qualifications did not have a single publication and this was as an implication of low research culture. It is noted that, most of the academic staff are not research orientated and that is why we can hardly see any research paper or articles they published in the recent five years, despite being in their fifth year of service and being aware of the Public University. Research is one of the cordial roles of public Universities and community engagement as a requirement besides aiding the teaching and learning. The undertaking of research culture developing is a strong move to pave way for publishing posting into community engagement, in order for them to climb the academic ladder (Welter & Urbano, 2020). The findings have also established that a lack of a reading and writing culture on the part of Uganda's University research community resulted in the duplication of previous studies regarding ideas and methodology employed.

4.8 In the study hypothesis analysis of findings.

This study hypothesized that the variables are uncorrelated. The aim was to retain factors with more variables loading, and eliminate factors with fewer variables loading (*Model-Based Approaches to Learning*, 2019) The rule of thumb is to retain items that load at a minimum of 0.35 and eliminate those factors that load below 0.35. Loadings below 0.35 show weak strength of the item towards the measuring of the construct (Castro et al., 2015). Factors with fewer than three (3) items loading are weak and unstable (Wentzell et al., 1997).

Table 4. 2: Item loading per Factor

	Factor					
	1	2	3	4	5	6
CS1			.583			
CS2			.764			
CS3			.587			
CS4			.746			
CS8			.885			
CS9			.904			
CM1	.938					
CM2	.691					
CM3	.764					
CM4	.757					
CM5	.805					
CM7	.584					
CM8	.779					
CM9	.420					
CM0	.466					
RO1		.717				

RO2	.843	
RO3	.919	
RO4	.913	
ROP5	.860	
C1		.836
C2		.666
C3		1.00
C4		.777
T1	.733	
T2	.954	
T3	.930	
T4	.747	
T5	.821	
Q1		.655
Q2		.761
Q3		.773
Q4		.565

Extraction Method: Maximum Likelihood.

Rotation Method: Promax with Kaiser Normalization.

Source: Primary data (2024)

4.8.2 Step 5: Interpretation To ensure that only the factors that are stronger, stable and yielding of quality research products in most interpretable results remain, this study considered 34 factors with an Eigenvalue ≥ 4.8 and has a minimum of three items loading with 0.35. (Brown, 2015). Consequently, only six (6) factors remained for further analysis in this study. The Eigenvalue of the six (6) extracted and retained factors ranges between 32% and 4.7 %. The percentage of variance accounted for these factors ranges between 31% and 4%. The six (6) extracted and retained factors for further research culture development analysis in this study account for 62.98% of the total variance. Table 4.4 indicates the items loading per factor

4.8. 3 Factor coding

This section discusses the naming of extracted factors as reflected in this study. It also enabled the coding the items grouped in each factor and enabled the research to keep ethical issues as required in scientific research. In reading section, reference is to Table 4.4 above. The coding of items is according to the question numbers on the questionnaire

Factor 1: Research topic selection

Under this factor, retained were Six (6) out of nine (9) items for further analysis after extraction. No items moved from other factors to this factor. Table 4.7 indicates the items and item codes for Supervisor selection.

Table 4. 5: Items and item codes for selection of research topic

CS1	The Supervisor selection procedure is not appropriate for complex research report
CS2	The selection procedure focusses a lot on preliminary eligibility requirements
CS3	The procedures allow unnecessary interference through complaints which causes delays
CS4	The selection procedure has many unnecessary approval stages
CS5	The selection criteria lack the requirement for students to demonstrate their consistency in delivery

CS6	The selection criteria do not require students to declare their internal control procedures on efficiency
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Source: Primary data (2024)

From the study findings in the above table 4.5, indicate that (64.9%) respondents were in agreements and (35.1%) respondents' disagreements that the selection of research had not complexity and challenges as far as they were concerned. The finding also revealed that when selecting research topic supervisors always hold consultative meetings research directorate that proves delays of approval stages. Results indicate (63.7%) respondents were in agreement and (33.3%) respondents were in disagreement with this with idea and selection criteria which does not demonstrate students' competence and ability to carry out research. It was also observed that University management authority should academically staff members and research fellows to guide the students in identifying and selecting research topic. The findings show that (53.5 %), respondents indicated that, the selection criteria do no show internal control in quality of research, while (46,5%) respondents were not with the notion.

The finding of this study demonstrates that active academic staff members and research students' does not find any complexity in selecting a research topic. This implies that research supervisor with appropriate supervisory research skill can easy the exercise and practice of research topic selection and suitable for investigation.

Factor 2: Research supervisor

This factor consists of ten (9) items discussed under research supervisor and research management's factors. For this reason, the selection of the research topic and Supervisor to monitoring students' research progress factors refers to this factor and its items. After extraction, (9) nine items were retained. Table 4.5 indicates the items and item codes of research monitoring factors.

Table 4. 6: Items and item codes of Supervisor monitoring

CM1	Inadequate supervisory research skills among staff designated to monitor students' research progress affect the quality of research.
CM2	Failure by research student to clearly understand Supervisor monitoring procedures affect the steady progress in research
CM3	Research academic monitoring staff does not care to prepare Supervisor-monitoring plans.
CM4	Research students do not care to communicate to Supervisors expected project goals and expectations
CM5	Research supervising staffs do not bother to make appraisal of their students' during research project process.
CM6	Research ethics are not taken into account seriously by Supervisors
CM7	Delayed payments affect Supervisor monitoring
CM8	Irregular field site inspection by research Supervisor monitoring students' progress
CM9	Feedback between students' and supervisor affect research supervision and progress

Source: Primary data (2024)

The study findings in table 4.5, it indicates that (33.1%) respondents agreed, (18%) strongly agreed and (22.9%) respondents slightly agreed which give a total of (74%) respondents were in agreement that strong supervisory skills contribute quality research work. Only (26%) of respondents disagreed with the idea and said their other factors that may influence the quality of work, these students' competence, commitment skills and supervisors' professional ethics. This implies the majority of the respondents agreed that supervisor significantly contribute in both students' steady progress and quality of research report.

Results further show that (27.5%) respondents agreed (12.8%) strongly agreed and (25.7%) respondents slightly agreed which give total of (66 %) respondents who were in agreement that

the delayed remuneration of supervisors' do affect quality of research projects. While 34 % respondents disagreed with idea of delayed payments of the research supervisors to affect the quality of research work.

The study findings reveal that (31.5%) respondents agreed, (10 %) strongly agreed and (23.2%) respondents slightly agreed which give a total of (64.7 %) respondents were in agreement that regular site inspection of the students doing applied research and providing appropriate feedback strong supports the quality of work and steady progress of the students. This implies that good supervisory practices in study the ably support the quality of research and research culture development in the public Universities

Factor 3: Research Supervisor's' oversight role

This factor consists of five items; no items that moved from one factor to this factor. For these reasons, the name research oversight role refers to these items. Table 4.6 indicates the items and item codes for research oversight role factors.

Table 4. 7: Items and item codes of research supervisors' oversight role

ROP1	University has been effective in ensuring compliance in the research report process
ROP2	University has been effective in its advisory role in research process for public research report projects
ROP3	University has been effective in setting standards in research report projects
ROP4	University intervention during the research processes has not been effective improving performance of research report projects
ROP5	University has effectively built capacity of key players on research report projects.

Source: Primary data (2024)

The results of above table 4,6 research supervisory oversight roles indicates that (64.9%) respondents they were agreements and (35.1%) respondents' disagreements as far as supervising, monitoring students research progress were concerned and supervisors' compliance services. The

finding also revealed that when the supervisors are active and friendly the students always hold consultative meetings hence improve on the quality of research.

The findings further indicated (63.7%) were in agreement that some Universities were having setting standards of research work and (33.3%) respondents were in disagreement with this with idea. It was also observed that the National Council of Higher education management authority should regularly inspect and form policy to regulate research work in Uganda. The findings (53.5 %), respondents indicated that, there in need for research culture development to humbly contribute towards the quality of research work. While (46,5%) respondents were not with the notion of making regular interventions to contribute towards the supervision and monitoring students research progress. The finding of this study demonstrates that active research supervision and setting affirm university culture could promote quality research delivery in public universities.

Factor 4, 5 & 6: Performance of research report delivery

These three factors make up quality of research performance delivery components. The findings indicate that, there are Factor 4 corresponds to Timeliness, Factor 5 corresponds to cost, while factor 6 is quality performance. Under this factor, retained (13) thirteen for further analysis. No items moved from other factors to this factor. Table 4.8 indicates the items and item codes provided.

Table 4. 3: Items and item codes of research financing and quality of research

Cost	
C1	The research report project is not implemented within the research estimated costs
C2	The research report was never completed within the budgeted cost
C3	The research report costs were inflated before the start of the research
C4	Prohibiting price negotiations is affecting cost of research report projects

Time of delivery	
T1	There are unexplained delays in the research report projects commencement
T2	The research report projects are not completed in project scheduled time
T3	The delayed compensation affects the scheduled completion date
T4	Delayed payment to Supervisors led to delays in completion
T5	Design reviews affected delivery time of research report projects
Quality	
Q1	Material used on the research report projects affected the quality
Q2	There is poor workmanship of the research report projects.
Q3	Poor designs affected the research report quality
Q4	Weak Supervisor capacity affected the research report quality

Source: Primary data (2024)

The study findings in table 4.8, it indicates that (33.1%) respondents agreed, (18%) strongly agreed and (22.9%) respondents partially agreed which give a total of (74%) respondents who were in agreement that research projects are carried out within estimated costs and the financial shortage to contribute inappropriate quality of research work. Only (26%) of respondents disagreed and the estimated costs can be adequate and there are other factors leading to inappropriate quality of research work. The main issue is around supervising and appropriate follow-up of research work plan designed by research student.

Results further show that (27.5%) respondents agreed (12.8%) strongly agreed and (25.7%) respondents slightly agreed which give a total of (66 %) respondents who were in agreement that the research project are not completed in time and this affects students' completion rate of their course or student Programme. While 34 % respondents disagreed with idea of time management

aligned to framework for completion research work. They clearly indicated that delays for research report completion is attributed to supervisors' irregular feedback and delayed enumerations of supervisors.

The study findings reveal that (31.5%) respondents agreed, (10 %) strongly agreed and (23.2%) respondents slightly agreed which give a total of (64.7 %) respondents were in agreement that the quality of research work was greatly dependent students competence and supervisory research skills. This means there is good supervisory practices in study the ably supported university research culture and policies could yield quality research work.

The results confirm on the other that (34.7%) respondents agreed, (14.4 %) strongly agreed and (19.8. %) respondents slightly agreed which give a total of (68.9 %) respondents were in agreement that the competent academic research supervisors coupled with university research policies to ably support research system and control publications. However (31.1%) objected the idea suggested for formulating research guidelines, rules and bylaws to complement the existing university sector research policies. This means most of members were in agreement that strong research culture development could contribute quality research and publications in the universities understudy.

4.8.5 Reliability analysis

This section analyses the results of the internal consistency reliability of the extracted variables. The Cronbach's coefficient alpha is used to test the internal consistency, because it is the most common and widely used method (Mehrabian et al., 2013). The coefficient ranges from between 0 and 1, and a value that is equal or less than 0.6 indicates unsatisfactory internal consistency reliability (Zhang & Lyu, 2014). According to (Mehrabian et al., 2013), coefficients equal to or greater than 0.70 indicate high reliability of the measuring instrument. The following three criteria for judging Cronbach's alpha results are used in this study (Wang et al., 2015).

Good Reliability is when the Cronbach's alpha is above 0.8.

Acceptable Reliability is when the Cronbach's alpha is between 0.6 and 0.8.

Unacceptable Reliability is when the Cronbach's alpha is below 0.6.

Table 4.9 summarizes the reliability results of the extracted factors. It indicates the Cronbach's alpha of each factor and the number of items each factor consists of relevant study variables.

Table 4. 4: Summary of reliability test results

Factor	Cronbach's alpha	No. of Items
Supervisor monitoring	.903	9
Supervisor selection	.891	6
supervisors oversight	.929	5
Performance	.878	13

Source: Primary data (2024)

From the study results analysis, the results clearly indicates that there is a positive relationship between supervisors' research skills and quality of research. There is an explained the coefficient of correlation of 0.903 at 50% level of significance. In addition, the coefficient of correlation of 0.891 at 50% level of significance shows that the respondents' active engagement of the supervisors and the students research delivery. This implies that there is a positive and significant contribution of research supervisors' oversight towards quality research work and research culture development in university education sector.

4.8.6 Reliability analysis of research supervisors

This factor consists of nine items. The Cronbach's alpha for these items ranges between 0.899 and 0.885. All items have a Cronbach's alpha greater than 0.6 and are therefore acceptable for further analysis. The findings indicate overall Cronbach's alpha for this factor was 0.903 and considered acceptable for further analysis.

None of the items of Cronbach's alpha is greater than the overall Cronbach's alpha. No deletion to increase the overall Cronbach's alpha. The scale mean, scale variance and Cronbach's alpha, items are indicated in Table 4.10.

Table 4. 5: Item total statics of research supervision

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Total Correlation	Item-Cronbach's Alpha if Item Deleted
CM1	30.3795	19.110	.768	.885
CM2	30.3133	19.829	.701	.891
CM3	30.5181	19.197	.658	.894
CM4	30.4819	19.063	.705	.890
CM5	30.4880	19.560	.714	.890
CM7	30.5241	19.681	.596	.899
CM8	30.3976	19.174	.737	.888
CM9	30.2711	20.550	.579	.899
CM10	30.1205	20.458	.630	.896

Source: Primary data (2024)

4.8.7. Reliability analysis of supervisors and research selection

This factor consists of six items. The Cronbach's alpha for these items ranges between 0.886 and 0.857. All items have a Cronbach's alpha greater than 0.6 and are therefore acceptable for further analysis. The overall Cronbach's alpha for this factor was 0.891 and considered acceptable for further analysis. None of the item Cronbach's alpha is greater than the overall Cronbach's alpha.

Therefore, no item deleted to increase the overall Cronbach's alpha. The scale mean, scale variance and Cronbach's alpha if any item is deleted is indicated in Table 4.11.

Table 4. 6: Item total statics of Supervisor selection

	Scale Mean ifScale	Variance ifCorrected	Item-Cronbach's Alpha if
	Item Deleted	Item Deleted	Item Deleted
CS1	14.6024	13.950	.610
CS2	14.4940	12.651	.801
CS3	14.6506	13.404	.659
CS4	14.5000	12.967	.693
CS8	14.3253	12.657	.724
CS9	14.3253	12.330	.769

Source: Primary data (2024)

4.8.9 Reliability analysis of Supervisors' oversight role

This factor consists of five items. The Cronbach's alpha for these items ranges between 0.928 and 0.906. All items have a Cronbach's alpha greater than 0.6 and are therefore acceptable for further analysis. The overall Cronbach's alpha for this factor was 0.929 and considered acceptable for further analysis.

None of the item Cronbach's alpha is greater than the overall Cronbach's alpha. Therefore, no item deleted to increase the overall Cronbach's alpha. The scale mean, scale variance and Cronbach's alpha if any item is deleted is indicated in Table 4.12

Table 4. 7: Item total statics of Supervisors' oversight role

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Total Correlation	Cronbach's Alpha if Item Deleted
ROP1	9.1265	10.293	.736	.928
ROP2	9.1566	9.418	.842	.908
ROP3	9.3072	10.238	.861	.906
ROP4	9.2590	9.866	.841	.908
ROP5	9.2470	10.187	.801	.915

Source: Primary data (2024)

4.8.9 Reliability analysis of quality of research work

This factor consists of thirteen items. The Cronbach's alpha for these items ranges between 0.878 and 0.863. All items have a Cronbach's alpha greater than 0.6 and are therefore acceptable for further analysis. The overall Cronbach's alpha for this factor was 0.878 and considered acceptable for further analysis.

Although there is one item with Cronbach's alpha greater than the overall Cronbach's alpha, the competence of the decision-makers, with Cronbach's alpha of 0.878, deleting it will lead to a minor change to the overall Cronbach's alpha of this factor. Therefore, no item is deleted to increase the overall Cronbach's alpha. The scale mean, scale variance and Cronbach's alpha if any item is deleted is indicated in Table 4.13.

Table 4.8: Item total statistics of quality research work

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Total Correlation	Cronbach's Alpha if Item Deleted
C1	41.3133	43.719	.662	.863

C2	41.5482	42.976	.627	.865
C3	41.5602	43.254	.619	.865
C4	41.6386	42.656	.647	.863
T1	40.9759	45.212	.602	.867
T2	40.9819	45.497	.583	.868
T3	41.0181	45.824	.598	.868
T4	41.0904	45.004	.618	.866
T5	41.0663	45.117	.655	.865
Q1	42.2831	44.556	.473	.874
Q2	41.7771	45.156	.451	.875
Q3	42.3916	44.276	.466	.875
Q4	42.2831	45.174	.405	.878

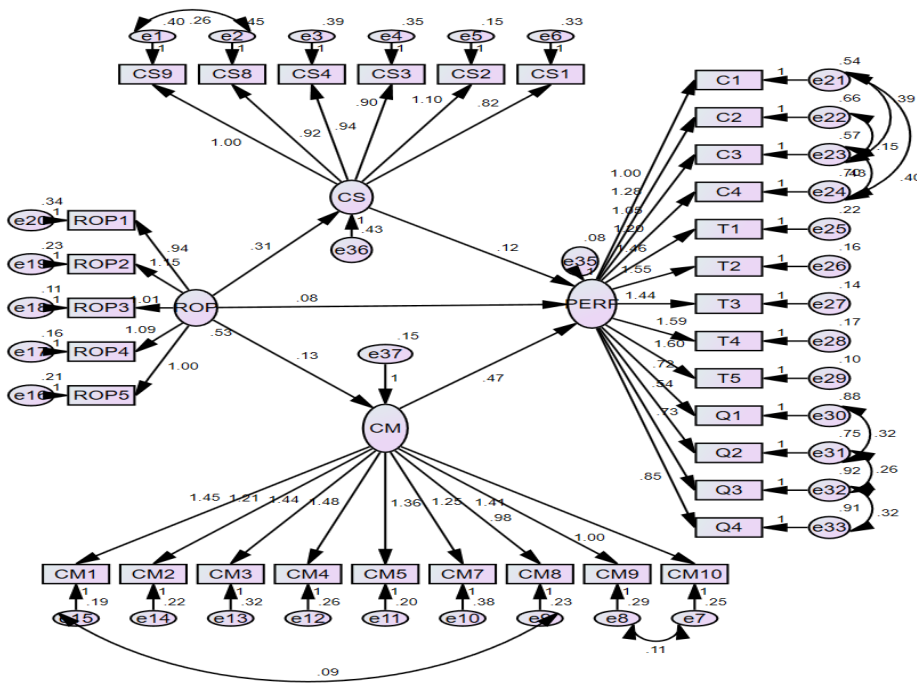
Source: Primary data (2024)

4.9 Structural Equation model development Analysis

The construction and development of this structural equation model was carried out of two parts in a PLS path model: 1) a measurement model relating the observable variables to their own latent variables and 2) a structural model relating some endogenous latent variables to other latent variables as far as research culture is concerned (*Coronavirus Disease (COVID-19).*). In Partial Least Squares (Smarts) method, structural model and hypothesis were tested by computing path coefficients. The first item that PLS provides to determine how well the model fits the hypothesized relationship is the squared multiple correlations (R²) for each dependent construct in the model. The R² measures a construct's percent variation that is explained by the

model (Wixom & Watson, 2001). The model was assessed using three criteria: 1) path coefficients (β); 2) path significant (p-value); and 3) variance explain (R). Following bootstrap re-sampling method was employed to test the statistical significance of each path coefficient (Xu et al., 2019) The aim in the study was to establish a critical path analysis among the four study variables. The generated inferential statistics to derive the associations at univariate and multivariate levels of the study variable respectively in the structural acquisition model shown below.

Figure 4.2: Structural Equation Model Correlation Weights



Source: SEM Results (2024)

Based on the results from study, as detailed in the figures below, the constructs studied of research structures, research directorate committees, supervisor operation and functionality of research participants and stakeholders' participations revealed they influence the quality of research work positively, at a rate of 37 %. Hence an indication that the prosperous research culture development in the study areas is determined ($R^2=0.351$) =37 % by the factor's studies. And based on significantly, all the constructs' studies, revealed to influence significantly to the

sustainability o (P Values <0.05), as detailed in above and figure 4.2. The structural equation model clearly indicated that there are a number of factors that are significantly influencing the research culture development public universities in the study area as predicted 37 % of the variance in (Adjusted R Square =0.504). The remaining 63%, this is believed to be predicted by other factors outside the study.

The sum of 37% thesis model embedded in the new research culture development system and university education research policy paradigms that call for the involvement of multiple stakeholder actors with different role and responsibilities so as to build and develop an appropriate research culture in universities understudy. The efforts put in by the public university as inputs for research culture development and structures are to ensure that students are well mentored and produce quality research work. The findings clearly indicated that, they are a number of other factors that influences the quality of research work besides the variables under investigation in this study.

4.10. Research supervisor and the quality of research work

Research Supervisors and the quality of research work was analyzed basing on the descriptive data generated from the nine questions in the questionnaire that are presented in Table 4.14 below

Table 4.14: Supervisor Selection Results

N=166		Mean	Variance
CS1	The Supervisor selection procedure is not appropriate for complex research report projects	2.8	.188
CS2	The selection procedure focusses a lot on preliminary eligibility requirements	2.9	.188
CS3	The procedures allow unnecessary interference through complaints which causes delays	2.7	.188

CS4	The selection procedure has many unnecessary approval stages	2.9	.188
CS5	The selection criteria do not provide methods to analyze of Supervisor competency	2.4	.188
CS6	The selection criteria do not require certified evidence from bidders to demonstrate their capacity to execute works	4.0	.188
CS7	The selection criteria do not require bidders to declare commitment to quality	3.1	.188
CS8	The selection criteria lack the requirement for bidders to demonstrate their consistency in delivery	3.1	.188
CS9	The selection criteria do not require bidders to declare their internal control procedures on efficiency	3.1	.188

Source: Primary Data (2024)

According to results in table 4.15 above 50% of the research participants, agree that the selection procedure of supervisors matters greatly to the quality of research work. In some Universities where they have experienced academic staff and professors, they are doing it appropriately. The selection procedure does not focus on eligibility, allows unnecessary delays, involved unnecessary approvals and these affect the quality of research work. The supervisor declares commitment and portrayed better fundamental research supervisory skills to ably guide the student. This demonstrates consistence and does not require supervisor to declare their internal control procedures in order come up with quality research. However, the study observes good research policies and institutional culture regulates the Public Universities research performance.

Furthermore, 70% of the research respondents perceived that the selection criteria do not require certified evidence from student to demonstrate research capacity. In addition, the cross tabulation of the research capacity to demonstrate the quality of research work verses position, it is clear

that, top University management and research fellows’ officers who are involved in day-to-day operations, agreed that most students do not demonstrate evidence of research capacity—Table 4.15.

Table 4.15: Declaration to research originality and quality research work

Declaration to quality					
Position	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Officer	4.0%	24.2%	27.3%	43.4%	1.0%
Middle manager	2.4%	22.0%	48.8%	26.8%	0.0%
Senior manager	0.0%	50.0%	13.6%	36.4%	0.0%
Top management	0.0%	0.0%	50.0%	50.0%	0.0%

(Source Primary data 2024)

From the Overall study findings, the results indicate that, the selection of the research topic show originality, strength and weaknesses of study. The following the findings from individual interviews and documentary reviewed in this study validated the primary data. During interviews, it was noted that; Research supervisors’ guidance, monitoring the steady research progress of the students was paramount and significantly contributed to originality and the quality of research work and most importantly grounded on research culture.

Supervisor research monitoring progress was analyzed basing on the descriptive data generated from the 10 questions in the questionnaire that are presented in Table 4.20 below

Table 4.16 Supervisor monitoring research progress results

	N=166	Mean	Variance
CM1	Inadequate supervisory skills among Staff designated to monitor	4.0	.188

	research is affecting performance		
CM2	Failure by research managers to clearly understand Supervisor monitoring procedures is affecting performance	4.0	.188
CM3	Research monitoring staff does not care to prepare Supervisor - monitoring plans.	4.0	.188
CM4	Project staff do not care to communicate to Supervisor s expected project goals and expectations	4.0	.188
CM5	Research monitoring staffs do not bother to make appraisal of Supervisor during research project processes.	4.0	.188
CM6	Record management during research project process is not taken serious research supervisors	4.0	.188
CM7	Delayed payments of Supervisors affect Supervisor monitoring	4.0	.188
CM8	Laxity to invoke penalties due to delayed or poor-quality works affects monitoring research and quality of research work	4.0	.188
CM9	There is irregular supervision by research supervisors affect quality of work	4.0	.188
CM10	Poor feedback between Supervisor and students affects Supervisory progress.	4.0	.188

(Source: Primary Data, 2024)

According to results in table 4.17 above 80% of the research participants, agree that there are inadequate professional research skills among some of supervising staff, failure by research supervisors to under understand regular monitoring procedures do affect the quality of research work. It was also noted that, some of research monitoring staff do not have Supervisory monitoring work plans for research projects and the supervisory staff do not communicate

expectations to students they are supervising. Therefore, there is no appraisal for Supervisors and there is laxity to keep supervisory records. Furthermore, the respondents agree that there is delayed payment of Supervisors, laxity by Supervisor monitoring staff to invoke penalty due to delays and poor research quality of work. In addition, the cross tabulation of the adequacy of supervisory professional research skills among the academic staff Supervising verses position in the University, it is clear that, from the level of academic officer to senior management matters in research supervision. This makes skilling critical research supervision and monitoring students' progress to enhance delivery research report.

Table 4.17: Adequacy of supervisory professional skills

Skills among supervising staff				
Position	Disagree	Neutral	Agree	Strongly Agree
Officer	3.0%	17.2%	63.6%	16.2%
Middle manager	4.9%	31.7%	48.8%	14.6%
Senior manager	13.6%	31.8%	50.0%	4.5%
Top management	0.0%	50.0%	50.0%	0.0%

Source: Primary Data (2024)

The findings to the above table indicate a concurrence with the views of the majority of the research participants, the results of the study revealed that the issue of appraising Supervisors during research process makes significant contribution to critical research monitoring process and the quality of research is measured highly in the EFA (CM5=.805, mean =2.8). The findings in evidenced from the table below, majority of the respondents all the brackets of years of experience concur with percentage above 50% that Supervisor appraisal is critical and necessary but it not being done often times to the monitoring academic staff in public Universities.

Table 4.18: Appraisal of Supervisors during research process

Appraisal of Supervisors				
Experience in years	Disagree	Neutral	Agree	Strongly Agree
<1	0.0%	28.6%	71.4%	0.0%
1-3	3.1%	26.2%	58.5%	12.3%
4-6	7.7%	25.0%	59.6%	7.7%
7-9	10.7%	25.0%	57.1%	7.1%
>10	7.1%	35.7%	57.1%	0.0%

Source: Primary Data (2024)

Overall findings of the study clearly indicate the weaknesses of academic staff in Supervision and monitoring of student's research progress process. The weakness in research supervising affects the quality of research and the is due inadequate competence and professional research skills that jeopardizes the students steady research progress opportunity. These findings validated by the following individual interviews and documentary review. This was the view noted during interview. In one of the individual interviews, an interviewee observed that:

“The problems are the poor supervision by the assigned University. The Supervisors are left to execute their supervisory works the way they wish and the supervisors just approved certificates without verifying poor research quality.

This could be due to lack of professional research skills, competency and lack of research culture in some universities understudy. This is an area of concern because monitoring cannot improve by merely putting adequate procedures but also skilling the supervisors with modern monitoring systems and ensuring they perform. Mulumba (2016) noted that this could be avoided through design and build project models. However, this study did not cover the merits and demerits of research culture building in public Universities.

4.11 Discussion of the findings

The discussion of the findings in this section follows the order used to organize the presentation of the same findings to ensure clarity of the study variables.

4.11.1 Crude conception of research

An understanding of how research is conceptualized in the Ugandan University education context was central in the present study. In order to determine efforts needed to develop a research culture in the public Universities. This study has found that there is still a crude and ambiguous conception of quality research, primarily due to generally overlooking the practical research aspect of knowledge generated through research in Uganda as affirmed (Žukauskas et al., 2018) .

Admittedly, there are some controversies existing among funding the research due to lack of rigorous and scientific application in some University research education. The Public Universities, academic staff research and students' research sometimes miss out on how precisely scientific research is carried out, particularly in universities.

Nevertheless, the general consensus is that, there is need to have a firm research culture in university settings. These culture values and core practice of scientific research are in a cyclical process of activity which involves conducting scientific research investigations right from the time research topic, research proposal writing, getting and able supervisor up to producing research reports (Rubin & Babbie, 2016).

The critical and empiric findings generated through rigorous research activities, disseminating findings and seeking or assessing the impact of the disseminated findings to the community. All these require a policy or University organizational culture to guide and regulate the research activities.

In this way, both pure and social types of research work are included in the equation defining research practices and the communal ownership of the approaches and scientific procedures involved in research can be demonstrated as affirmed by (Harikkala-Laihinen, 2020). The

understanding of ‘scientific research’ as explained in the foregoing paragraph is contrary to what the findings established in this study.

As demonstrated in the findings reported in this study, the current understanding of research policy and culture development has been largely influenced by the research professional career advancement and practices. Research policies and other ethical core values in research are placed with greater emphasis on academic staff to make scientific research and publications.

It was also found out that, the academic staff promotions are based hard work and quality of research produced. Therefore this research culture and practices safeguards the academic staff and secure employment, tenure and pay rise (Conrad & Dunek, 2020). As such, the exoteric dissemination of one’s innovation research-based knowledge beyond the confines of the academic corridors to the wider community who stand to benefit from such research is largely ignored in Uganda. The knowledge generated through scientific research innovation it should be an integral part of such research-based knowledge generations if at all we are to prosper.

A reasonable conception of research culture values would have gone beyond the production of research reports based on the empirical research findings and embraced the practical application of those research results for the impact of research culture to be felt in the community and for the betterment of public Universities in Ugandan society.

Although the presentation of research papers at academic conferences and the publication of research results in journals and books are popular methods of knowledge dissemination and transfer, uncertainty, however, exists on whether these channels allow the knowledge produced through research to reach those who need it most and bring about the desired impact on the community (Naman et al., 2019), had this view regarding relying greatly on research-based publications as medium of knowledge dissemination:

The implication is that the research-based knowledge disseminated through academic journals publications and conferences may largely reach professionals in particular fields. It is notable that, the academic research in community constitute the majority core values and people need

this knowledge the most for improving their livelihoods beyond the confines of academia (Hoffman, 2021).

Although the change of Public leadership in disrupted the research culture process, the policies should be laid down to form the foundation of research in universities for subsequent like-minded pilot studies after the research impact criterion was brought back into the Public policy agenda (Development (UNCTAD), 2020) .

Although there is an ongoing debate with regard to how the scientific research are carried out and how they greatly impact of university research and innovations can be assessed. As explained in the findings factoring in the aspect of research utilization and impact in National University research policy and practices is very important in Uganda. For example, as seen in the United Kingdom and America, serves as a learning experience to University education stakeholders (OECD, 2021).

University research knowledge is of great importance in the communities and to education stakeholders become more familiar with what research innovations has to say and what kind of energy and investment should be expended, in order to cause a viable, develop. It is important therefore to have a firm and strong research culture to enable Uganda's Universities generate appropriate and relevant knowledge in the society.

4.11.2 Importance of research culture

The National Council for Higher Education and Universities are mandated to educate and reinforce research culture development in Uganda. They are also obliged to formulate research guidelines and research policy that streamlines sustainable development in public Universities (Inc, 2015). There is need for university education sector in Uganda to have a strong research culture building by attracting more human resources, setting research physical structures and having fiscal resources directed towards enhancing research capacities within Ugandan Universities.

Policy declarations are a major indicators of a government's resolve and commitment to developing University research culture, because they set directions for practically everything taking place in the real world as expected in the research field (Costa et al., 2018); (Nestel et al., 2019) (Gao, 2019). The findings of this study revealed that, research is placed at the central or top of many things in the field of academia and the Public University policy agenda. Therefore, it is imperative to have a confirmed research culture and a Public University research policy to guide research initiatives in universities.

The findings illustrate that, instituting a National Research forum and building strong University research culture, backed government research Policy is paramount. It should be noted that having research policy and guidelines in a bid to foster research culture building is very important for the country like Uganda. These research values and innovations are not only good for the country, but also for the sustainable develop their own academia, through a firm research culture at universities level. However, it still faces some limitations. These are also apparent in this Public Research council and Development Policy and warrant some critical attention and policy to build up a culture (UNESCO, 2017).

The Uganda Public Research Council and Development Policy is overloaded with responsibilities as it strives to cater for all of the research in the country, including University and non-University research, both private and public. Universities provide teaching and research services whereas non-University research Institutions mainly function as research factories (Aamoucke, 2016);(Cagica et al., 2021). As such, it becomes problematic for the National Research Council and Development Policy in Uganda to manage both the University education and independent research accordingly.

Although empirical evidence is less conclusive with regard to which funding model research delivers the best performance in research (Dimitropoulos & Koronios, 2021), the logic behind competitive research funding is that researchers and University s compete with one another in order to secure funding and at the same time become committed to improving their research excellence and performance (Ha & Ngoc, 2020); (OECD, 2021).

In conclusion, a discussion and interpretation of the findings surrounding the key themes for research practices and culture which were identified from Uganda's University. The discussion established that there is a discrepancy between the elevated status of research in universities and that of National policy council and the events on the ground regarding funding, managing research and promoting research in Uganda

4.11.3 Summary and conclusions

The presentation and discussion of the findings pertaining to the challenges facing Ugandan Public Universities in developing a research culture in Uganda. The chapter was based on the five major themes, connection among key research stakeholders, low level of research funding, lack of reading and writing culture, heavy teaching and administrative workload and inadequate and inexperienced academic staff in Public Universities. This chapter discusses challenges Ugandan Public Universities face in developing appropriate research culture, including low funding, lack of reading and writing culture, heavy workload, and inexperienced academic staff. Lastly it explores strategies for building and developing a successful research culture in Uganda.

CHAPTER FIVE:

RESEARCH CULTURE BUILDING IN PUBLIC UNIVERSITIES

5.1 Introduction

The Uganda Public Universities education sector needs to establish guidelines and fundamental concepts to foster a strong research culture in Uganda. Key themes include research training, mentoring, incentives, funding, and time and space. Scientific research requires continuous task value-based training and monitoring to achieve quality research. Supervisors should monitor each task or activities to ensure all levels research perform their duties effectively in public University. Therefore, this chapter is organized into relevant sections. 5.1, introduction, 5.2, successful research cultural building, 5.3 Research time and space, 5.4 Discussion of the findings and 5.5 summary and conclusion the chapter.

5.2 Successful Research Culture Building in public Universities

The primary research question guiding this final empirical findings and lessons learnt in this study. What does the Ugandan Public University need to cultivate, build and foster a prosperous research culture? The study participants established a set of guidelines, norms, traditions and practices that forms effective policies and practices for the desired Ugandan public universities and other institution of higher education countries in the Great Lakes Region could adopt to build the culture of research.

The data collected went through rigorous exercises management, cleaning and analysis process in order to appropriately provide required result. The norms and the traditions required for research culture building were classified into five key themes, included: research training, research mentoring, and research incentives, research funding policies and research practices in time and space among others. The findings indicated a continuous sequence of embracing the

require research task-based values like training, monitoring, provision of incentives. Research funding mechanisms and timely management practices eventually formations affirm and strong research culture in public universities. The strong research culture is not formed, built or development by observing the core factors or policies but should inculcated into the minds of research participants, willingly own it as an ideal way of doing research in order get quality and scientific outcome. A good research culture in this case is to pave way of doing research activities following the required practices, norms and traditions. This implies that each theme or core aspect has the same level of importance as far as research task-based value, practices and culture development is concerned. Among others the effective research training, continuous monitoring and support supervision makes one successful scientific research and eventually produces quality research work required in the field of academia. Therefore, this chapter is organized into sections that begin with this introduction, followed by a presentation and discussion of the findings, summarizes and concludes

5.3 Research time and space

Creating time and space for research is one the aspects were observed as core value. Time and space had a significant bearing and role to play in the quality of research and more so into scientific research that requires rigorous exercises. It is a good research culture to provide adequate time and space for training, practicing and monitoring the process of research. The observance identified values are other factors that could helpfully accelerate the research culture building and development within Uganda's Public Universities. The findings show that Public Universities in Uganda should introduce a research culture, whereby academic staff members and students could fail back free research break without compromising the quality of research outcome (Ewart & Ames, 2020).

The core values in research culture should commit the researchers and supervisors to deliver quality research output at the end of the research period or semester, depending on the agreed upon time, quality and quantity of research to be delivered in public universities. It was also observed that, having adequate time and space was imperative in formation and build research culture (Hoffman, 2021). Therefore, reducing teaching methodology, research skills or

administrative workloads would not make sense in research culture ample time and space remains very patient if we are producing quality research work to inform policy makers, communities and government for socio-economic development of our countries as participants explained:

Lecturers and all academic staffs should be given much time and space for research because research is a core pillar and a cardinal role for the universities. Therefore, it should be grounded into institution culture and practices if its fundamental concern for the common good of university. It is also notable the research ethical committee should be in place to competently enforce and encourage staff members and students to uphold the set core values and research culture as required (Close, 2021). It was also critically observed that scientific research proposals require clear practices that conform to the set research culture values and time so as to have a strategic fit into research culture. Timely research funding and space remains a pivot factor which should be left unobserved for quality and original research work that, one can own it, based on scientific evidence in order to bring changes and innovation to the society and the academic community. (Faculty Dean: RS4)

Another participant added this:

Teaching is given more priority than research yet research is a cardinal role in universities, promotions of academic staff and rating depends on the quality of research and publications. The experience in this study shows and clearly indicates that academics devote much time in teaching than research. The implications are therefore, there is need for rethinking of the future of research culture and public universities in Uganda. I think the University should provide more attention to research as well as its quality. (Postgraduate Student: RS4)

The implication herein is that creating ample time and space for members of academic staff is very patient and it may serve as act a catalyst for one to engage in research activities and produce quality research work. Another strategy for creating time and space for the Public University research community (Tandberg et al., 2018). The research participants in this study included the provision of writing retreats and seminars for one or two weeks, so that academic staff could

engage in research without the distractions of the University and teaching environment (Nash et al., 2016). Writing retreats could only be provided upon submission of one's research project or viable concept note to avoid such research opportunities being wasted or abused.

Additionally, research participants indicated and maintained that Public Universities in the country Uganda should build a strong research culture system where an academic staff is forcibly be allocated time to carryout research and then publish the results their findings. This will drive the researcher to produce quality research work because the universities demand the output, instead of waiting for these members of staff to request for the time. It very important for public to ensure they pave way by building and developing a research culture to support research activities as illustrated in the statement:

Of course, with the ample time allocated to academic staff and research fellows it will motivate them to carry out research essential activities without compromising the quality of research work. Research be cardinal role of the universities in Uganda one should give it the required time and space over other duties such as teaching or administrative. This is because research adds a significant value to the university, lecturers and posts in community development.

In other words, one can willingly request for an amount of time and support for research or forcibly allotted it, the end result being to reinforce the undertaking of research and developing a research culture (Gurbutt & Cragg, 2019).

To sum up, this section as a whole study has presented the findings regarding the critical factors that were seen to be essential for building and developing a successful research culture in Uganda's Public University education system. The discussion of these findings is presented in the following section.

5. 4 Discussion of the findings

This section discusses the findings on the critical factors necessary for building a successful research culture in public University, as presented in section.

5.4.1 Research skills training

The findings of this study show that Public Universities in Uganda need to develop regular and powerful tailor-made research training on research supervision, research writing and making scholarly publications. The findings also align with (Cassell et al., 2017) concepts of ‘collegiality’ and ‘learnability’ which are central to building individual research culture and organizational capability and capacity in scientific research.

Collegiality facilitates members of the research community, who often possess diverse experience, knowledge and research skills, to cooperate and collaborate, and thus makes it easier for promoting learning of research skills, attitudes and dispositions (Halperin & Heath, 2020).

Previous research in the Philippines, Ghana and Nigeria also reported on the kind of support provided towards the enhancement of research skills amongst the University. Having quality research work in community is a result appropriate research training and postgraduate education (Zami, 2019) (Trimmer et al., 2020). Reporting a dramatic change regarding the research culture from a three-year research capacity-building model in a then teaching-dominated public University in Ghana.

Medicine et al., (2018) explains that the success in transforming a teaching culture to a research culture was greatly influenced by research training opportunities, such as doctoral training and supervision and monthly research seminar and workshop series instituted within the University

5.4.2 Research supervision and mentoring

The findings reported in this study indicate that research mentoring is identified as an enabling factor necessary for encouraging the research culture development within Ugandan Public Universities. The findings of this study established a twin pronged approach for a research supervision and mentoring Programme. Personal research mentoring and group research mentoring and supervision leads to having firm research culture that led to quality research delivery. Personal research mentoring is the form of a research culture leading to person-to-person mentoring whereby an experienced researcher would guide and advise a junior researcher over a set period of time to produce quality research work (Medicine et al., 2020).

Group research mentoring, on the other hand, involves a team or group members who work together towards learning the skills of research writing and scholarly publishing (University et al., 2020). Under the tutelage of a research team, experienced researchers can share their research expertise with junior researchers through collaborative efforts and mentoring so that the early-career researchers can begin to build research profile and networks.

These findings regarding the importance of research supervision and mentoring are in line with the good practices and research cultural values development to strongly ground the research spirit in public Universities. A great deal of literature also supports research supervision and mentoring as a crucial strategy for expediting the cultivation of affirm research culture development in Public University education sector.

5.4.3 Research incentives

This study established that the provision of direct research incentives and indirect research incentives is an imperative course of action that could foster a research culture development within Public Universities in Uganda. This finding regarding research incentives serves as an impetus, as Public Universities in Uganda have been incentivizing their researchers through career-advancement promotion, as explained in the study. The implication of this that, incentives will cultivate the morale and improve on the quality of research work in Ugandan Public Universities (Nations & Commission, 2024). Despite being the most used and relied on form of incentive, the career- advancement promotion has been found less effective in encouraging a research culture development and productivity of academic staff in the public universities understudy. Participants involved in this study indicated that, research culture development enhances career-advancement promotion as conventional practices and provides rigor to unmotivated factors in Public University of Uganda.

The participants, in this regard, called for more forms of incentives, such as managerial position promotion in Public Universities (e.g., head of department), pecuniary incentives and crediting active researchers in University (University et al., 2020b),(World-Class Universities, 2021). Data presented in this study also support previous research cultures that underscore the fact that

research incentives and benefits stimulate academic staff members to undertake quality research work. The implication is that a variety of incentive schemes needs to be in place in order to encourage research culture development and enhance a successful research culture in Public University education.

5.4.4 Research funding

This study has identified research funding as a key driver of a successful research culture in university education. This finding is in accord with the framework guiding the study, which stresses that a sustained research funding is a necessary input in strengthening research capacities in public universities. This finding is also in agreement with other findings in previous studies that say the cost allotted for research is not always adequate for the completion of the study.

More research funding was found to be critical in enhancing the capability and latitude of University education in order to develop a culture of research in studies that determined processes and strategies that Universities in OECD countries pursue to promote research (OECD, 2021).

Similarly, academic staff members and University leaders affirmed that more research funding would be needed to create a flourishing research culture in Southern and Northern African Universities (Cunha, 2020); (Cagica et al., 2021).

The demand for more research funding in Uganda and this should be borne out of the fact that the government of Uganda has been inconsistent in providing research funding to the country's Public Universities. The Ugandan government remits limited research funding to Public Universities that pass through which is largely problematic and unable to deliver the desired goods.

The government of Uganda also indirectly includes research funding in the annual Public University budget remitted to public Universities based on student unit cost. As the findings of this study reveal, the inclusion of research funding in the general University budget is largely unreliable and counter-productive, because senior Public University leaders tend to apportion

funds for research from the pool of annual University budget only when satisfied that the funding for other University activities such as teaching was sufficiently allocated (Jalote, 2020).

In order to develop a successful research culture in public Universities, many governments and Public Universities come up with a strong policy. Increasingly this research policy should diversify their funding mechanism systems by allocating special funding for research in addition to the general funding allocated to Public Universities.

In fact, adequate funding is needed for a successful research environment in Public Universities in order to establish high-quality laboratories, state-of-the-art libraries with a subscription to key local and international journals as well as the fastest internet connections, to facilitate communication and access to diverse teaching and learning materials.

5.4.5 Research time and space

The present study has identified time and space and ethical research culture consideration as an enabling factor in fostering quality research in public University. Participants involved in the study explained that since time has persistently been used as an excuse by a vast majority of academic staff members. (Massaro, 2021), Public Universities should create time by reducing the teaching and encourage research as a source of knowledge production. The implication here is research culture is imperative and it should be one of the administrative workloads of Public Universities in Uganda.

The Public University staffs allow them to engage in research writing, scholarly articles publishing and self-development research undertakings. The sabbatical research is an effective stimulant to fostering research, because one voluntarily decides to engage in research at a particular time rather than be coerced to do so (Ollendick et al., 2018); (Cunha, 2020) .

Secondly, the use of writing research retreats appears imperative to furthering the Public University research culture development in the present study. Writing research retreats accord the Public University instills research culture building in community. Besides that, it provides an ample time and space to concentrate on their research projects for quality research output

(Resources, 2021). The implication is that, there is need to foster research culture as beneficial move to pave ways of visibility and research culture grounds in the field of academia. In summary, a discussion of the findings regarding the critical factors for building a successful research culture in Public Uganda has been provided in this section. The discussion has established set of guidelines to guide the research culture development of effective policies and practices necessary to build a research culture in Uganda and elsewhere.

5.5 Summary and conclusions

The chapter has presented and discussed the findings on the critical factors necessary for building a prosperous research culture in Uganda. These include: research training, research mentoring, research incentives, research funding and research time and space.

By presenting these critical factors, the chapter has established a framework for making decisions and guiding action in efforts geared towards developing a successful University research in Uganda and other nations in the world. As such, the following concludes the study by providing a summary, the conclusions and recommendations for policy and as well as for further research.

CHAPTER SIX:

PUBLIC UNIVERSITIES RESEARCH CULTURE DEVELOPMENT IN UGANDA

6.1 Introduction

This chapter explores Uganda's Public University education's role in developing a research culture, presenting findings and discussing them in separate sections. This section (6.1) introduces the chapter, followed by section 6.2 which presents the approaches to the research. 6.3, Structural and procedure, 6.4 The desirable research culture and approaches 6.5 research career promotion and other sections follow till summary and conclusion of the chapter in section

6.2 Approaches to a research culture developing

The analysis of data related to the approaches of research culture development has examined it based on the empirical lessons from the three Public Universities under study. The study focused on the research practices leading to develop a research culture building and development in Uganda.

6.3 Structural and Procedural Research Culture Development Approach

The Structural and procedural research development approach (SPRDA) has formed a common place to serve as approach to research culture building and development in Ugandan Universities. The SPRDA involves establishing research directorate offices, developing instruments of powers, research policies for good practices in research while observing the ethical norms. The findings indicate that Research Ethics and Intellectual research property policy were very important. Sternberg et al., (2019) affirm that, there is need to incorporating research culture into the University mission, academic staff career advancement path and promotion criteria of carrying out scientific research in Uganda.

All of the public Universities understudy had instituted research offices entitled the 'Directorate of Research and Publications' with officials or research fellows responsible for facilitating

research activities in the public University. Exceptionally, the findings indicates that two public University which, had well set up the Directorate of Research in the Public Universities (Resources, 2021). One of them had gone further in establishing the Deputy Vice-Chancellor for Research supervision and publication. This was a good paradigm shift to support the research funding and for into the University.

The findings established that, the DVC-Research position at this University is borne out of the University's recognition that research needs greater focus as contended by (Major et al., 2015) . This will strengthen the research Programme and be funded in order to produce appropriate and quality research work.

Strengthening of research in university education sectors is also paramount and it involved a restructuring of the Directorate of Research by creating a new office of the Deputy Vice Chancellor, Research and publications. These efforts are expected to create a better research environment and building a affirm research culture with more conducive environment for the academics. The findings indicated that, some of the conducted research and disseminate results were not properly carried in order to keep with global trends and standards. (Research Site 3)

Academic staff participant also added:

The Research Site 3 public Universities recently conducted the study and engaged the office of DVC (Research and academics). This is deliberate to try to raise the profile of research activities at the University level. (Academic Staff: RS3)

Similarly, Universities under study have developed instruments for good practice in research, such as Research Ethics Policies and Intellectual Property (IP) Policies. These instruments were very instrumental and purposely developed in order to provide appropriate guidance in conducting ethically informed research. It is also notable in the findings that public priority research themes provide protection the researchers' and Universities' intellectual assets.

Research and IP Policies, however, existed only in public Universities under study. The Public Universities, in contrast, had yet to develop research and IP policies. Participants in this study

attributed the absence of affirm research culture and IP policies in universities to the nascent nature of these Universities, as they now mark a decade since they were established, they are not yielding better results of qualitative research.

6.4 Desirable research Culture and practices Reinforcement

The Desirable Research Culture and practices Reinforcement Approach (DRBRA) emerged as another approach to developing a research culture in Ugandan Universities. The DRBRA approach involves using different carrot-and-stick tactics in order to reinforce desirable research culture and practices among the members of the Public Universities in Uganda. The findings revealed that, research work has strong weight in university and community as well. For instance, academic staff are promoted basing on hard work and quality of research he/she produces and students who fail research are not allowed to graduate even though he/she complete class work. Approaches reported clearly show the weight of research in Ugandan Universities.

The findings further indicate that, conducting research include so many privileges, like career promotions, managerial position promotions, sabbaticals and postgraduate research supervision, as well as pecuniary incentives and relegation.

6.5 Research career promotions

All of the Public Universities under study require their members of academic staff in different designations to have a number of refereed publications for them to rise through the career ranks. Climbing from Tutorial Assistantship to Assistant Lectureship, for example, requires one to possess a research-based, through knowledge in research skills and publications.

In order to climb from Assistant Lectureship to professorship, one has two options: either to possess a PhD or a minimum of four refereed publications since the last promotion. From Lectureship to Senior Lectureship requires one to possess a PhD and a minimum of four refereed publications. Since the promotions are rated on quality of research, while from Senior Lectureship to Associate Professorship requires a PhD and a minimum of seven refereed publications the academic staff are forced and motivated to conducting quality research work for promotion purposes. Finally, promotion from Associate Professorship to Professorship requires a

PhD and a minimum of twelve refereed research publications since the last promotion. In addition, the duration for staying in one designation before promotion to the next level is three years minimum.

The publications required for promotion include journal articles, books, book chapters, dictionaries, consultancy reports, published conference papers and technical notes. These publications are to be made in reputable Journals types were regarded differently depending on the level of University.

Unlike technical notes which are viewed less favorably, receive less attention and are not considered for promotion in public Universities, journal articles are highly regarded and preferred in all of the Public Universities under study (Jalote, 2020).

The findings revealed that, one could not be promotion if the weight of peer reviewed journal articles in their promotion portfolio is below 50%. The following statements affirmed the requirements for academic promotion body based on the quality of research work.

If you want to be promoted, you have to publish on the so called recognized and repeatable journals. (Postgraduate Student: RS1)

The implication is that the academic staffs are encouraged to publish in ‘recognized journals’ such as Francis and toeyer, springer, emerald publisher etc. One of the requirements is geared towards their career advancement in publications. It was challenging to get a clear conception of the phrase ‘recognized peer reviewed and credible journals. However, some participants, particularly senior Public University leaders, maintained that one indicator of ‘recognized journals’ which for Universities, use is international publishing impact and indexes for promotions of academic staff:

One is needed to publish under Web of Science where serious journals are listed. (Faculty Dean: RS1). Participants explained that if one publishes on those journals listed in the international indexes such as Scopus and Web of Science, the expectation is that the quality of their papers is high. Nevertheless, this is not only the requirement, as one’s articles have to be subjected to

independent review when the person requests for promotion (Büssing, 2021). The promotion may not be secured if one receives unfavorable outcome of the reviewers. Therefore, it is important to produce quality research and publication in order to be safe if at all one is to remain relevant in this regard.

The papers cannot be approved until they are read by someone who is independent and they are graded. If they are not substantive, one doesn't get a grade that is needed to upgrade someone. (Faculty Dean: RS1)

By and large, findings regarding kind of publications show that only peer-reviewed publications are considered for promotion. The peer-reviewing process is checked in two ways. However, the challenges here were determining the quality of peer reviewers.

6.6 Research Capacity Development Approach (RCDA)

Provision of research-based for postgraduate and professional development programs was the main approach used to realize the University research capacity development. Research is made part and parcel of university programs and it need to be grounded on the research culture and policy. To begin with, two Universities under study were found to integrate research into postgraduate programs, wherein a research dissertation formed the criterion for a student to be awarded a Master's degree. In their final year, every student is allocated a supervisor to oversee research development and finally the production of a dissertation under the tutelage of the academic staff. This is demonstrated in the following statement:

It is a requirement here at (RS2), that every second-year student must undertake research in order to complete the study Programme. There is also an opportunity for study tours in some courses which thereafter we insist students to produce research project reports which are then assessed and awarded marks. (Academic Staff: RS2)

Participants in the two private Universities under study, particularly members of academic staff, reported that the undergraduate research supervision in their university s is as rigorous as postgraduate research supervision. One University in this category also introduced an

undergraduate student journal specifically for undergraduate students to publish their papers. Academic staffs are the chief editors of this biannual journal which, during data collection, was in its sixth issue.

Moreover, all of the public Universities under study were running various Master and doctoral programs. In these postgraduate programs, students were attending research courses before beginning to write their research proposal for dissertations and thesis. In addition, the findings revealed that research skills trainings and seminars, there were also regular and the university encouraged attending international conferences.

It was also noted that postgraduate seminars during which students presented their research proposals, research reports and other papers. In one public University, research training or course workshop was a mandatory step prior to embarking on research proposal development and quality dissertation writing (Nico & Ian, 2018). In the same public University under study, a peer-reviewed research publication from the objectives of one's dissertation or thesis was one of the prerequisites for successfully completing doctoral studies. This is demonstrated that there was rigor to arrive on promotion as required:

Quality Research is must to both students and academic staff because for one to achieve said promotion should portray evidence publication one among the requirements for fulfillment of their promotion purposes. We do also have seminars and international conferences or workshops on research and these were must do for doctoral students here in Uganda at (RS1) both for staff and students. (Academic Staff: RS1)

Although the Public University under study had established various postgraduate programs as noted in the foregoing paragraph, Master Programmed dominated the postgraduate training in these Universities. Two Universities under study, for instance, had a total of only 14 doctoral candidates from 2021 to 2022, while the figure for Master students stood at 110 were recoded.

This finding alone poses a question as to whether such a huge discrepancy between Master students can create a good foundation for the country's human personnel imbued with advanced research culture and analytical skills to function both in the University sectors. This helps to

guarantee, at least each student should produce publication (Resources, 2021). Secondly, publications considered for promotion, irrespective of whether they have passed through a rigorous peer-reviewing process during publication, are also assessed by two independent reviewers, both internal and external to the University

6.7 Managerial position and postgraduate research supervision

Managerial positions such as the Faculty Deanship, Directorate of Research, Directorate of Undergraduate and Postgraduate Studies, Deputy Vice- Chancellorship and Vice-Chancellorship are given to PhD holders at a Senior Lectureship and Professorship designations. This is explained in the following statement:

I was appointed to be an Associate Dean after my promotion to a

Senior Lecturer (Academic Staff and Associate Dean: RS3). Another participant adds this statement: To be given students to supervise, a lecturer is supposed to have published several papers and hold a PhD. (Postgraduate Student: RS3)

The implication is that University managerial positions are only given to academic staff members with a high research reputation. Similarly, postgraduate research supervisions and sabbaticals are also granted to academic staff primarily with a Senior Lectureship designation and above. Under the sabbatical leave, academic staff members are granted one-year paid leave in order to embark on research.

6.8 Discussion of the findings

The discussion of the findings in this section follows the same order used to present the findings in section in order to maintain consistency and clarity.

6.8.1 Structural and Procedural Research culture Development

Structural and procedural research development initiatives, such as the establishment of research offices, research centers and criterion-referenced staff management policies, are necessary indicators of an University's seriousness towards substantially developing research (*Issues in*

Global, Public, Community, and Institutional Health, 2012). This line of reasoning is supported by the present study, as the findings show that creating research offices, such as the DVC-Research and the Directorate of Research and Publications, introducing research guiding tools for academic staff promotions was right and fitting(Allan, 2013, p.) Puts it (Büssing, 2021). The study observes that such as Research Ethics Policy and Intellectual Property Policy, as well as integrating research into university mission and career advancement path, were major structural approaches established to develop a research culture in Ugandan Universities.

These findings concur with many other studies. For example, in South Africa, (Congress, 2014) found that all of the five Universities studied had research offices, research centers, research-based career paths, research-led University missions and Intellectual Property Services. These South African Universities had also created a two-tier system of leadership with regard to the University's core functions in order to manage teaching and research separately.

The research tier consists of the Deputy Vice Chancellor at the top, the Director of Research in the upper-middle, the College or School or Faculty Dean for research in the middle, and the Departmental or Academic research leader at the bottom (Resources, 2021a). The teaching tier follows the same order as the research tier, as there exists the DVC for teaching and other successive positions or offices. OECD, (2019) report a similar trend in the United States and OECD countries.

Contrasting findings emerged in studies by Isaias et al., (2020) in Vietnam. Both studies found a presence of a one-tier system of University leadership overseeing both teaching and research, a lack of clearly-defined career tracks and professional ranks for academic staff and the existence of muddled research policies.

Universities across the world develop research structures purposively to create a seedbed for cultivating, guiding and managing University research. Although Uganda has developed some of these research structures and procedures as the current research findings illustrate, reservations do exist on whether the created structures would have a significant impact on cultivating a successful research culture in the country.

Although it is currently a global trend to manage teaching and research separately at Universities through a two-tier system of University leadership (Collective, 2017) a large percentage of the existing leadership structures in Ugandan Universities, as shown in the findings, do not subscribe to this two-tier leadership profile. As the study's findings reveal, only one University under review has recently introduced the DVC office for Research. Even though the DVC Research office lacks a research report - based system of support from the bottom level because the successive offices, the offices of the College or School or Faculty Deans, for example, operate under the one-tier leadership system as both teaching and research are conjoined.

The establishment of only the DVC – Research office at the top leadership level conforms to standardization orientation, as opposed to the diversification of research management at the University setting (Education, 2016).

Standardization implies that research procedures and structures are centrally developed and dominated, which many find to be unhealthy for the development of a sustained research culture. Diversification implies a commendable level of intra-University al autonomy where organs at the bottom level, for example, Faculty or Department, are also involved in developing and controlling research standards and structures (Moon, 2013); (Yang & Huang, 2016). In this regard, it is essential for Ugandan Universities to subscribe to the two-tier leadership profile in order to enhance the management of research and teaching separately.

The two-tier system has been successful in elevating the research portfolios of South African Universities and improved the standard of socio-economic development of a nation. South Africa has the most developed economy in Africa and it is the only African nation with a large number of the world's best Universities as ranked by the 2016 Times University Education World University Rankings. In this the world rankings, South Africa features are dependent on universities research work and publications. In conclusion research work and publications are list represented by an candidate for promotions in three Universities (Tirri & Toom, 2020). Given the limited quantity and quality of research outputs produced by Ugandan Public Universities leaves a lot to desire.

Furthermore, research structures created in Ugandan Universities, as shown in the findings, may not significantly cultivate a successful research culture and this need to be backed up with public council for higher education policy. This is because the practices that do exist right now, they have been borrowed from the global trend without knowing exactly what the structures ought to do as far as research culture development is concerned in Uganda.

The findings of this study indicate, the structures were created without being empowered with viable policies to strengthen and manage their functions, particularly in the local context, under which the research structure is required to operate (González & Lugo, 2019).

What remains unclear is what the research structure should actually be doing, and how compliance with its function could be enforced. Despite the presence of the Director of Research offices for many years, all the Universities under study, for instance, lacked a comprehensive solid research culture source regarding research matters.

This suggests that some structures and research culture should have been introduced and developed to promote research in universities, have remained as aspirational in the University guidelines and policies rather than a reality on the ground.

It is worth mentioning that borrowing policies and structures of the successful Universities is a trend for many Universities worldwide (Alexander et al., 2018). However, mimicking the best practices from the successful Universities without integrating them with the contextual factors and local culture is a preparation for adversity, as doing so may lead to a disconnected state of affairs regarding the direction in which progressive University research should head.

6.8.2 Desirable research culture development

The research culture development reinforcement mechanisms are central to encouraging research activity within public Universities and backed up by the government policies. Accordingly, Universities in Uganda have University aliased different incentive schemes in order to reinforce research culture and practices among the members of the University.

The major incentive reported in this study is career-advancement based on the research performance of individual academic staff. Another incentive schemes are managerial positions, pecuniary incentives, sabbaticals, postgraduate research supervision and relegation.

The findings corroborate with previous research conducted in South Africa, the Philippines and Vietnam, respectively (University et al., 2020a). These studies found a presence of various incentives to promote University research, such as research performance- based promotion and various forms of monetary rewards.

A.G, (2021) contends that, incentives have been found to be capable of fostering a culture of research in universities; however, this is highly dependent on the kind of incentive and how it is administered. The dominant incentive used in Ugandan Universities is promotion based on research performance.

Pecuniary and other forms of incentives were found to be erratic, as they are highly dependent on the availability of research funds and the University administrators' affinity for research. Despite being reported as the dominant and reliable incentive scheme to reinforce research culture and practices amongst the University research community in Uganda, research-based promotions were found less effective (Franco et al., 2019). In fact, research-based promotions, as currently used in Uganda, lack stern measures capable of handling inactive researchers who for one reason or another opt out of engaging in research throughout their career.

Within the Universities under study, the standard duration for one to stay in one designation is three years, and there is a provision in the University. All research policy guidelines that a member of academic staff follow must be grounded to universities mission. The integrations of research policy leading to research culture building promotion good reputation to the University. Development (UNCTAD), (2020) contends that, such provision is withstanding, the findings of this study show that there were cases wherein the majority of academic staff members in the Universities. The findings remained in the positions of Lectureship, Senior Lectureship and Associate Professorship for more than 15 years, due to a lack of adequate research outputs and subsequent publishing of their findings in peer-reviewed journals.

Usually, faculty members who are inactive with regard to research tend to stay in their current academic position throughout their career life until they reach retirement, concentrating only on teaching to earn their salary. This is contrary to the practice of many of the Universities in the developed world, particularly in Uganda they under rate research and yet its good way of knowledge production in Universities, where research and scholarly productivity is an integral part of tenure-track positions (Pietsch, 2020); (Sultan et al., 2021) . For example, in the United States, one cannot get tenure without first accomplishing research and scholarly productivity in a period of six years.

Ugandan Universities are concerned about losing their academics through summary dismissals amidst academic personnel deficit and failure to produce quality research results. As some academics that often fall into the trap of lacking adequate research outputs for upward mobility are associate professors and senior academics with a doctorate, senior University leaders are considered imperative to retain these academic staff to teach students, even when such instructors remain inactive in research.

In academic University, research has been found to be positive not only in enhancing the stature of the academic staff, but also the quality of their teaching and learning, which in turn translates into innovation for both teachers and students and ultimately the cycle of knowledge (Garcia-Carrion et al., 2020), (University et al., 2020a). As such, the unintended outcome of retaining inactive researchers is that, the University standards required of such Universities to promote research-informed and research-led teaching, as well as making research an integral part of their existence, end up being compromised.

In this situation, Ugandan Universities may consider establishing teaching positions where inactive researchers could be explicitly identified and relegated to teaching positions. Pan, (2012) affirms that, the way, Universities in the country could be certain of a record of active and passive /inactive researchers to afford better planning of their academic core functions and avoid the situation as in the present where University's guidelines and practices generally permit

academics to choose an active or a passive research-path without any repercussions on their tenure.

6.8.3 Research culture Capacity Development Approach

Ugandan Public Universities, as established in this study, employ the Research culture Capacity Development Approach (RCDA) in order to enhance the research skills of their university research community. These findings are reflected in previous research which concludes that long and short-term formal research training through classroom courses, research supervision and workshops are common approaches to promoting a research culture in Public Universities (Crombie, 2021); (Houser, 2021).

It is, therefore imperative to maintain the provision of advanced training and research at university education Universities both for undergraduate and postgraduate programs. Human resource training from a bachelor degree up to the doctoral level and professional development programs constitute a viable option for honing research skills of both students and members of academic staff in Universities (Medicine et al., 2019); (Alina et al., 2021).

Despite being considered as a foundation for developing a research culture from the beginning of one's career and during career progression, the Research Capacity Development Approach (RCDA) was insignificantly utilized in Ugandan Universities. Some of the public Universities in Uganda that had integrated research in the second and final year of undergraduate Programme had abandoned. Such an orientation because of embedded costs that the University could not shoulder it affects the quality of research.

6.8.4 Research Collaboration and Networking Approach

The study has found that Ugandan Public Universities collaborate and network with various local and international Universities in their bid to strengthen University research. This finding is in accordance with the (Seidman, 2016) framework guiding the study, which shows that collegial research environment is a crucial factor in developing a research culture in University education.

This implies that research activity, especially in Public University education, cannot flourish when viewed as a solo activity, unless it is viewed and accepted by University al members and other stakeholders of the University (Žukauskas et al., 2018); (Dudkowski, 2021) in Uganda .

Likewise, Public Universities in countries such as South Africa, the United Kingdom, Russia and the United States, are increasingly moving towards international research collaborations and networks through establishing positions of Research Chairs and Postdoctoral Fellowships to attract experienced and junior researchers all over the world (Development (UNCTAD), 2020); (Marschark & Knoors, 2020), (Alina et al., 2021).

Although Public and international University networks and collaborations undoubtedly offer countless advantages in promoting University research, several obstacles challenge their formation. Particularly when the networks involve Universities in developed and developing countries like Uganda among other in the Great Lakes Region.

The findings of the present study, for instance, indicated that Ugandan Universities faced several challenges that hindered their effective participation in research networks and collaborations. These problems facing Uganda's and other Universities in the developing world often lead to a one-sided system of collaboration (Alina et al., 2021). Usually, the University education in the developed economies has reputation because of its advantage of having established systems of intellectual property, technology, adept researchers.

6.9 Summary and Conclusions

This chapter has presented the findings and discussion pertaining to the role of Uganda's Public University in research culture development. Conclusively the chapter discusses Uganda's Public University's role in research culture development, highlighting its significant role in foresting the quality of research but highlighting the need for more effective approaches to create a successful research culture in Uganda , compared to other African universities.

CHAPTER SEVEN:

CONCLUSIONS, CONTRIBUTION AND RECOMMENDATIONS

7.1 Introduction

The chapter discusses a study on research culture development in Ugandan public universities, highlighting challenges and practical approaches. The chapter is divided into sections, including Introduction, University Policy on Research Culture Development, Research Culture Development within Universities, Critical Factors in Research Culture Building, Contributions of the Study, and Conclusion. It covers Introduction, University Policy, Critical Factors, Contributions, and Conclusion.

7.2 The major findings

Ugandan public universities have not prioritized research culture building and development, with professors, research fellows, and postgraduate students conducting research at a micro level. This lack of focus on providing relevant research knowledge, skills, and values has led to a lack of full participation and engagement in research, resulting in little realization of fundamental ideas of research culture building and development.

7.2.1 National Council for higher education policy on the research culture development

The National Council for higher education come up with clear strategies, practices and research policies to be observed in all public universities. In this way it was notable that, national council has greatly impacted on Public University in relations research culture building and development in Uganda. The public universities seem to under rate national council belief, strategies and policy that articulate the influence the quality research work and a research culture development in Uganda's Public University sector and yet research is very important in the life of the University. This implies that all Public Universities in Uganda operate under the homogeneous

University model, combining scientific research skills in teaching and community service, regardless of their establishment.

This study has demonstrated that, research culture building and development is far-fetched in Ugandan Public Universities and therefore it concludes that there is need to have combined efforts and collaborations for stakeholders. This is collaborations and partnership will enhance good research practices and hence form a strong research belief and culture in public universities.

7.2.2 Research funding in public universities

The study findings have demonstrated Public University receives little research funding and besides that it is delayed to release by the government of Uganda. The study concludes that post graduate students and supervisor are likely to be demoralized in research process as there are no motivations and little attention is paid to research work. Basing on evidenced little allotment of research funds and delays in the Public Universities the professors and research opted for foreign grants which are also not reliable and you cannot build nor develop a research culture basing on the foreign aid. The study concluded that, research building in Ugandans public universities need attention and clear policies to regulations the practices in order to realize the required research standards in public universities.

7.3 Research culture development within Public Universities

The study has established that there were several problems that affect public Universities in research culture development. Uganda's public university could employ strong research culture development using the participation of all stakeholders. The participatory approach could enhance collaboration development of research structures, practice and inform the culture of doing better research work. There is need to establishment a number of research practice and experience to inform the public universities leaders of norms and traditions the form an institutional research culture.

7.3.1 The Research Ethics committee.

The study evidenced that, public universities have inadequate commitment and inappropriate Intellectual Property Policies form an integration of research culture values into the University mission and academic staff career advancement path. The study concluded that functional research ethic committee could support good practices and research culture development due to its support in observing the norms and practices.

The study concluded there is need for research structures in Public Universities' recognition that research requires much focus, space, supervision and guidance. Also, the Public Universities under study do not operate under the two-tier system of Public University leadership where teaching and research are separately leading and managed within a single University.

All of the Public Universities under study require their academic staff members in different designations to have a number of refereed publications. This study established however that the research professional development programs were conducted occasionally and the postgraduate training was largely dominated by Masters Students and a few interested academic staff members. The study concludes that, although new knowledge, new understanding and approaches of research methodology is attained by participating stakeholders it does not form a culture in public Universities of Uganda. Unless the past experience and ingrained habit of thinking are continually articulated and open discussion are made in higher education institution are less likely to have significant impact on public university to an extent of informing a culture.

From the ongoing conclusion it is possible to make a sounding policy implication by the national council and public university in to have constituent with critical transformation of research paradigm. Uganda has been able to evolve but research culture development has not fallen short in public universities agenda and philosophy and yet research is very significant activity and fundamental core values of a university. Another approach is that the administrators and policy makers need to support the research culture development and wiliness to work with other collaborates and community. The is need for creating space for research culture and dissemination of research results through the stakeholders and financing of the publication of in-house journals of the University and granting leave for academic staff members to participate in

research dissemination gatherings. Indeed, the study conclude that, support to research culture development is paramount gesture and it could encourage public university greatly remain relevant on scholar-to-scholar and improvement livelihood and influence innovations, technology applications and economic development of the county.

All of the public Universities need to underline the urgent need of having a sound research culture developed in Uganda and guiding policy enhance research study collaboration and networks with other popular Universities largely from overseas, with the aim of elevating their research culture profiles and visibility. The study concludes need for research collaborations and networks have help to enhance the exchange of experts and expertise sharing of learning materials and quality of research work.

7.4 Challenges of research culture development

The study has found a number of challenges that Ugandan Public Universities face in attempt of developing a research culture. These ranges from brain drain, wiliness, inappropriate knowledge research directorate, lack of research ethical committee and poor research funding in public universities. The study concludes they should be an overall improvement in public universities research culture building and development in Uganda. This approach is to information transformation system backed with the research-based knowledge generated from Public Universities. The study revealed that, there was no comprehensive research work at these Public University or Public repositories documenting the research conducted or published to neither influence policy nor impact on health services in the country nor improve on education system. The study concludes that, there is need for academic staff professional and public universities to assert their cause and purpose in increasing their levels of genuine participation, justice and respect in economic growth and development of the country. It is evident that Public University in Uganda are not so active in the research with exceptional a few like Mbarara University let alone the impact of university research on the Ugandan community. There is need for stresses and not transformation alone and influencing the society in political, social and economic structures in which we operate. It is easily said that, reform in our communities can be attained through education and evidenced research. Reform in research culture must go together with

national council of higher education by enforcing sounding research policies in public universities in Uganda.

From the findings, the study concludes that. Improper funding, delayed release of research funds, un-motivated research fellows, failure to support researchers in the processes of research results disseminating, failure supporting research supervision and monitoring of research activities in public universities of Uganda affects the research culture and quality of research work.

It also concludes that, shortage of academic staff members' motivation and their limited research spaces, knowledge and skills restrict their capacity and readiness to participate in research innovativeness and scientific research activities as well as participate effectively and confidently produce quality research out in Public Universities. There is need to improve on the identified research concerns and enhance research culture development in public universities by creating space research activities and culture, norms, belief and traditions in Uganda.

Additionally, the low level of research culture and practices is another stumbling block in Ugandan public Universities of producing quality research work. Another factor is foreign research funding and influence in Uganda. Ugandans need to avoid heavily depending on donors and individual academic self-funding this approach can inform research culture development of any public university. The implication is need to pay much attention research culture formation and tends to changes in research undertaking of small-scale research projects that on the whole often lack serious scholarship.

7.5 Critical factors for research culture building

The study findings demonstrates that, basing on research undertaken study, there is efforts invested in research culture building in public university of Uganda. Nevertheless, effort is made it does not yield the expected results as far as research culture building is concerned. The study concludes that, there is need for successful research culture building to concretize the norms and practices of good and scientific if at all we are to build research culture in public universities. There is need to critically foster cordial research collaborations between research stakeholders and research host community.

The study still concludes that there is need research training, research mentoring, research incentives, research funding, and research space to pave way for public University policies to inculcate the spirit of research culture building. Nevertheless, there are underlying problem of research culture building stems from knowledge gaps, inappropriate training of research participants and there is need to establish research ethical committees in public universities to address un-ethical research practices. The study concludes that, there is need to prove on research training seminars for both early researchers, research culture and research career developments could be vital research culture building and development it should begin at the undergraduate level and scaled up to post graduate for survival in research fellows of public university setting.

The study further concludes: The current structures in public universities are un supportive to enhance research building and development. There is need for more space in research supervision and mentoring as identified as another factor crucial in furthering the research culture building and development in Ugandan Public Universities. Enhancing the research capacity alone is not enough the public Universities need to a little more and achieve the required results in research activities.

Introducing individual research incentives, promotions for academic staff and professors' rewards particularly could contribute to the perceived research norms, practices and culture for researchers in public universities. This research culture is to support networks of the researchers, collaborations community and it is believed that, it was not probably paid attention to in public universities. There is need to create more space for survive of research culture in indigenous community as well as higher education institutions in Uganda.

Furthermore, the study findings indicated that, incentives could be released later as another enabling factor that could jeopardize the opportunity to foster the research quality and communities' engagement in action research. Public Universities should commit space and more incentives such as research positions, honorary positions and pecuniary rewards so as to forester research culture development. Nevertheless, the little sensitivity on the foreign aid implication on

the part of some Ugandans it seemed to hold true to majority of the participants who were beneficiaries of the aid. Otherwise, researchers felt are cheated and this affected their morale as far as researchers are concerned in public universities of Uganda.

Similarly, the participants mentioned that creating the time and space for researchers in order to engage in undertaking applied or action research was another factor that could help promote a desired culture of research at university level. These participants maintained that academic staff members and research fellows should be given sufficient time and space in order to engage in research through the provision of academic and writing retreats based on agreed research conditions. It is also implied that, in so doing public university would stand better chance for visibility, rating and appear to be relevant in the society because research influence policies, education systems and post into effective community development using research-based evidence. There is need for research to have a strong research culture grounded of the country's political beliefs so to produce quality research to influence functional transformation of education and development in Uganda

7.6 Contribution of the study

The study has made some contributions to the body of knowledge that is presently available in the discipline forming fundamental research culture development in reference to intellectual power acquisition in the field of research. The findings of the study have demonstrated that, researchers in public university in Uganda need to a research culture to inform the systems and approaches of producing quality research work. Public university need to influence discussion and debates can make viable contribution in generating new knowledge, values and skills add on the existing stock of knowledge in society. Besides research culture building and development researches should impact on social, political, economic and cultural setting in which it is carried out carry out. The study also generated a structure equation modal to easy research culture inspiration, inculcation and building and development among public University in Uganda. The study findings contribute to improved theoretical and practical realities or contributions to the development of a research culture in Uganda Public Universities and the entire Great Lakes Region of East Africa, Uganda in Particular.

7.6.1 Theoretical contribution

The study has made an original contribution to the body of knowledge in the academic area of research culture in Public University education, by establishing a comprehensive empirically based understanding of how public University should calculate research culture and practices in particularly within Uganda's context.

The study has also filled a knowledge gaps of regarding research culture building and development in Uganda's public universities particularly, performing significant contribution in the quality research production and application of research-based knowledge as established norms and traditions by previous research(Ewart & Ames, 2020). It has done so by advancing major approaches used to develop a strong research culture and discussing limitations that make the approaches employed a successfully in the research culture within a Public University education in Uganda.

The study has also established problematic concerns that hamper the development of a firm research culture in Public University education system to support researchers and production of quality research innovations when there is an incompatibility between the national council of higher education policy and Uganda government research agenda coupled with public policy.

From the forgoing conclusion it is possible to make some possible recommendations on research culture transformative paradigm. Uganda has not been able to evolve and inform research culture philosophy of education. It true that research culture development provides the basis for producing quality research that may inform policy-makers and other politicians in the Society. Although new knowledge is produced by quality research and theories in study, it was generally understood as undertaking scientific investigations carried out in order impact on problem solving and makes scientific publication in reputable journal houses.

From the findings there are theoretical and policy implication realized in the study, the study result serves as input that deduces in the theoretical research culture development and policy implications. The study contributes to the body of knowledge through the establishment of factors that positively and negatively influence the research culture development. It also shades

light on insights of supervisor's gap, monitoring students' and regulatory research progress of research work. Although their problems and gaps associated with research culture public universities leadership have not paid much attention. Well as public universities have attempted to observe nation council for higher policies there is information asymmetry challenge among the researchers on research culture development in Uganda.

The study has also made a methodological contribution by underscoring the fact that an empirical study from the structural equation model, such as the present one, that studies a research culture in Public University. The research result has comprehensive explored different dimensions of the research problem identified and devised means of underpin the underlying factors that affect research culture building and development in Uganda.

7.6.2 Practical contribution

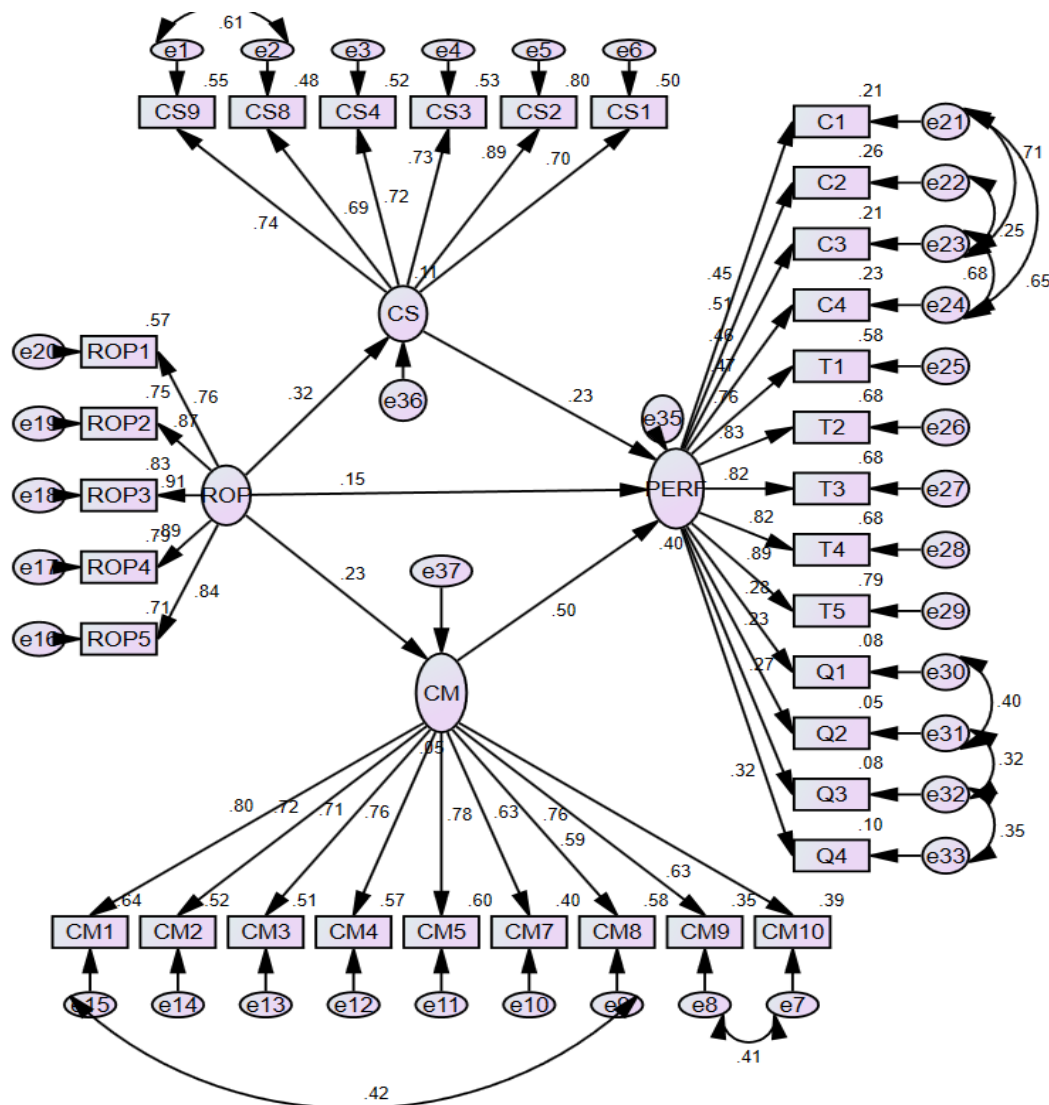
The study has made a practical contribution by generating knowledge from the study's findings and the developed structural equation model. Given the complexity of research culture and other related issues in Uganda the study developed new ideas and strategies as reflected in the equation model. The application of the considerations and principles therein will address the difficulties of research culture development in Uganda's public universities.

The study suggested the practical application of research-based knowledge that would make the impact of research felt in the wider community and bolster socio-economic development, was generally excluded from the equation. This study gathered perceptions on the four variables, which were assumed related at the beginning of the study. The study revealed that contractor selection and monitoring are positively associated with performance. Nevertheless, for similar study to be improved, it suggests researchers to also voice the challenges established and parameters within each variable affecting the quality of research culture and students' performance in research work. The findings indicate that the all the structural equation modeling (SEM) indices are positive. The model is therefore fitting and usable as a tool for analyzing research project processes in relation to research topic selection, monitoring students' research

progress and supervisor oversight moderating effect. Below is the regression model (figure 6.1) that is describing the relationships of the research variables.

However, according to research participants the study provided an opportunity to reflect on some belief, norms, traditions and practices that can inform research culture development in public universities of Uganda.

Figure 8.6.2: The final SEM model



Source: Amos 21 Data Analysis (2024)

The appropriate application of the structural equation model knowledge may underpin the underlying research culture development gaps and post to effective quality research service delivery in Uganda. Within the study, scope set out in depicts the pictorial model to interrelate performance factors in carrying out the quality research work in Public University Uganda. The SEM model shows the interrelatedness of several parameters in research culture development grounding supervisors monitoring and moderation effect of supervisors' oversight and quality research work production.

The study further contributes to Public Universities and they should use a devise effective University alternative strategy, research policies and relevant practices necessary for creating a more flourishing research culture development in Uganda and other countries in the East Africa.

Moreover, the study shades light to insights for adaption of highlighted critical factors for a successful research culture building and development, such as rigorous research skills training, research mentoring, research incentives, research funding and research time and space that serves as a framework for Public University.

7.7 Recommendations

The study does not in any way, claims to be exhaustive nor was it one of the cardinal intents. However, based on the study's findings it could provoke and cause interests among other researchers to discussion issues raised and presented in this work. In light of the finding and discussion they deduced the following recommendations. The study recommended that, considerations for the following aspects and scientific research norms, practices, research action, research culture and research policy and recommendations for future research culture development in public universities of Uganda.

7.7.1 Recommendations for policy and action

The study does not claim exhaustive in public University and research culture development it recommends devise means for alternative strategies to underpin the underlying challenges of

research culture development in Uganda. Firstly, it recommends the Public University calculate a strong research culture to support the researchers in public universities to produce quality research work. There is need for adoption the superbia ways alternatives, norms, beliefs customs, traditions and good practices to inform research culture development in public universities in Uganda.

In light with research findings there is need for having research policy reform in order to support national council for higher education regulatory guidelines in appropriate research process and arrived at scientific research evidence grounded on the research culture in public universities. There is need for research collaborations and partnerships. The study recommends Public University to adopt good practices and collaborations in order to easy instill research culture in Public Universities.

There is need for researchers generate new knowledge, values and innovations research culture building and development Uganda. In relation to that issue little attention is paid towards research culture building and development in public universities.

The Public University leadership should adopt best practices of research culture development and ideas within structural equation model generated by the study. There is need for adoption of well-built practices and developed research culture strategies that have adequately support researchers and research fellows to produce quality research work based on research practices and culture established by the national council authorities and universities.

The study recommends public university leadership to pay attention and forester research collaboration with other sister universities. The approach could support research culture development so as to enhance and supportive research practices in public universities of Uganda. The is need to encourage One to curry out research applied and action research which may pace possible way it identified the Country's flagship of Public Universities form grounded research agenda of generate new knowledge and innovation support by research evidence for counties intelligence and social-economic development. There is need to explore factors that hampers research culture development in public universities of Uganda.

There is need to for academic staff and research fellows to be provided space to voice out the needs and get the required support to motivate them for quality research production. The quality in this cause should be viewed in terms of beliefs, values and skill that may aid research culture development.

The study recommends public universities should prepare students and research fellows to produce quality research work and encourage them to have a healthy competition teaching research methodology, have research seminars academic staff and post graduate students as well. The study argues for adopt appropriate research culture and develop it in order to inform scientific knowledge and innovation generation in Public Universities. The study recommends that, Public Universities to gradually nature appropriate research culture and practices that leads to attaining quality research work, using well-established skills and core norms by national council for higher education and Public Universities in Uganda.

Nevertheless, the study recommends should emphasis on research ethical research culture values and knowledge development in the county. Public Universities and government should invest in research funding and motivate researchers to produce quality research results disseminate it, for community consumption. Public Universities should position itself appropriate teaching of research methodology and better practices, skills that will promote evidence-based knowledge, innovation and development in all sectors the University needs and research culture agenda.

The research recommends that, research culture core values that should be negated in order public universities reliable source of knowledge, innovation grounded on research ethical norms and traditions of new knowledge generation but not only limited scale of artificial intelligence in order to avoid diluting the scope of such entities and research cultures established over the ages. It more so recommends for research incentives to induce willingness and support of supervisors to avoid delays to researcher completion and dissemination of real research findings.

The study recommends for reform agenda in Public Universities so that, having reliable research culture, having functional research ethical committees and well development research policies to guide and regulate in order to stipulate precisely norms, practices of universities research

activities. The study recommends that Public University to have well thought research culture and practices to enhance well managed research activities and fostered quality research work in Universities in Uganda and beyond for appropriate service delivery in all sectors, dimensions and enhance education for sustainable development in the emerging economies.

The Public Universities should have a well-established special fund to serve as a tool for supporting research directly in order to avoid delays from the government fund releases that affect the quality of research and ruins the established research culture in these institutions of higher education. The study recommends that, public university leadership authority and the senior University management and council leaders should instill feasible research culture practices and well fastened on institution core roles in order to bridge the identified research gaps in order to facilitate production quality research work and publications.

The study recommends for research culture performance-based best practices that, entails observing ethical issues, training researcher, provision of supervises support supervision, research activities funding system and having function research ethical committee to regulate research activities based on the existing research policies as established by the national conceal of higher education in Uganda. It also recommends or monitoring research activities and encouraging timely research competition rates among researchers and academic staff members and enhance excellence in research quality, innovations, knowledge production and development in the country and entire Great Lakes Region of East Africa.

The study further recommends that, there should be cordial relationship among the students carrying out research, research fellows and research Supervisors in public universities. By so doing it will create friendly research activities environment enhance observance of research ethical norms, culture and traditions effective cooperation quality research output in Ugandan Universities. The study also recommends that, indeed there should be good research agenda in the country, strong research culture and policies to guide and regulate research activities in Universities of Uganda.

The recommends the adopt the research ethical committees as critical path ways and practices as viable approaches and innovation to inform the established research culture, practical practices to policies guide and regulate in research undertakings for quality service delivery in the country and entire Great Lakes region.

The study recommends for research supervisors' incentives to pave way for willingness to promptly and accordingly enable researchers perform their research task according the established and acceptable research culture in order to practical research output grounded on research culture development in Public Universities.

Similarly, Public Universities should comply with the provision research culture and policies established to provide guidelines. The study recommends that effective supervise coupled with properly training academic staff members in appropriate methods of research supervision, having function research ethical committee could bridge the research gaps that jeopardize students' research and researcher's opportune moments to produce quality research work in Uganda.

All of the Ugandan public Universities should integrate research culture development lessons into undergraduate programs throughout all the semesters to on research delivery at postgraduate level in public universities.

The study recommends that, academic staff should be financially and intellectually supported in research activities and disseminate their research findings through publications and community engagement practices with generated knowledge, innovations and technologies. Public Universities should train sessions and motivate academic staff members and research fellows in carrying out quality research work and encouraging them to observe ethical consideration as required and approved by scientific researchers in public Universities.

Public Universities should establish University research depositories for publications and the University visibility in quality research output and rating of the University. The study recommends for public universities leadership resilience research based on universities' research agenda, among others, academic staff names, research interests, titles of their scholarly

publications and professional memberships if at public University are to remain relevant performing their cardinal roles of research, teaching and community engagement.

Finally, Public Universities in Uganda should conform to research culture bodies that guides and regulates all research activities all Ugandan Universities. The strengthen internal and international collaborations research work-based activities by supporting each other to realize their research aims, goals, objectives and aspirations.

The recommends, public universities to have fundamental and well-established functional research directorate to support research culture development and improve the research standard in the Universities of Uganda and the entire Great Lakes Regions in general.

7.8 Recommendations for future research

Future research could investigate a topic similar to the present one using a singular approach to extend the understanding how Public University system within Uganda strives for profound research culture building and strengthening. The study could cover a larger number of public Universities and respondents across the country.

Future research could also explore on the paradox of researcher's supervisor-supervisee relationship and access the knowledge of their research results via disseminating it beyond the scope of peers and research report audience outside of academia in Uganda.

7.9 Thesis conclusion

This study has investigated approaches used for research culture to development in Uganda's Public University education sector. Uganda is found in East Africa that is ranked the lowest in the world for research output and number of researchers. East Africa is also characterized by a low level of economic development when compared with other continents in the world. The only imperative way for Uganda in particular, to enhance research culture development is to get involved profoundly in the paradigm of research evolution, transmission of research skills and

application of knowledge. The study reveals that Uganda's public universities do not have sufficient research culture development policies and strategies for research culture building, hindering the country's progress towards a middle-income status. It recommends fostering an engrained research culture to produce and apply research-based knowledge across public universities and other private sectors of research institutes in Uganda

REFERENCE

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PPENDIX I: QUESTIONNAIRE

Dear Respondents,

I am carrying out a PhD study on “Public Universities and research culture development in emerging economies in Great Lakes Region: Empirical lessons from Uganda”. You have been chosen as a key respondent in this study and you are kindly requested to spare some of your valuable time and give the required responses in order to ensure that this questionnaire is filled-in and answered appropriately. All information provided will be treated with utmost confidentiality and used specifically for academic purposes.

SECTION A: DEMOGRAPHIC INFORMATION

Gender

Male ☐

Female ☐

Age Bracket (years)

< 20 ☐ 20-30 ☐ 30-39 ☐ 40-49 ☐ >50 ☐

Education Level

Certificate ☐ Diploma ☐ Degree ☐ Masters ☐ PhD ☐

Have you attained professional training in research skills and methodology?

Yes ☐

No ☐

Position in the organization

Student ☐ Academic Staff ☐ Dean of Faculty ☐ management ☐

Length of time you have been in this University (years)

<1 ☐ 1-3 ☐ 4-6 ☐ 7-9 ☐ >10 ☐

SECTION B: SUPERVISOR SELECTION

Please circle the most appropriate option on the right-hand side of the questions concerning Universities research culture development; strongly agree (5), Agree (4), Not sure (3), Disagree (2) and Strongly Disagree (1)

		Strongly Disagree	Disagree	Partial	Agree	Strongly Agree
1	The research title selection procedure is very challenging in the University					
2	The selection research methodology focusses a lot on preliminary suitability requirements					
3	The procedures allow unnecessary interference causes delays in research progress					
4	The selection procedure of research topic has many unnecessary approval stages					
5	The selection culture does not provide methods to analyze of student's research competency					
6	The selection culture does not require certified evidence from students to demonstrate their capacity to execute the research works					
7	The selection culture does not require student to declare commitment to quality compliance					
8	The selection culture lacks the requirement for students to demonstrate their consistency in research delivery					

9	The selection culture does not require students to declare their internal control procedures on effectiveness					
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SECTION C: RESEARCH SUPERVISION AND MONITORING

		Strongly Disagree	Disagree	Partial	Agree	Strongly Agree
1	Inadequate supervisory skills among Staff designated to supervisor research affect performance					
2	Failure by students to clearly understand supervisor guidance procedures affects the quality of research					
3	Research supervising staffs do not care to prepare research-monitoring plan.					
4	Students' do not care to communicate to supervisors as expected so as to research goals and expectations					
5	Supervising staff do not remunerate during research project implementation.					
6	Research ethics are not taken into account seriously by supervisors					
7	Delayed payments research supervisors affect their supervisory progress and quality of research					
8	There are irregular site inspections by research supervisors					

9	Poor feedback between students and supervisors affects research supervision and progress.					

SECTION D: RESEARCH OVERSIGHT

		Strongly Disagree	Disagree	Partial	Agree	Strongly Agree
1	University has been effective in ensuring compliance to research ethics procedures					
2	University has been effective in its advisory cultural role in research for career research development.					
3	University has been effective in setting standards in research policy					
4	University intervention during the research processes has been effective to improve research performance.					
5	University has effectively built capacity of key players on research projects.					
6	University has effectively involved stakeholders in developing research policy					
7	University has promoted successful research culture					

8	University has had stipulated research career structure					
9	University has promoted functions of research directorate					

SECTION E: PERCEPTION AND PERFORMANCE

Cost						
1	The research project is implemented within the planned costs					
2	The research reports are never completed within the budgeted cost					
3	The research report costs are not easily determined before the start of the research project					
4	Changes in research methods are affecting cost of research projects					
5	There are Challenges facing University in relation to developing a research culture					
Time of delivery						
1	There are unexplained delays in the research projects					
2	The research projects are not completed in project scheduled time					
3	The delayed payments of supervisors affect the scheduled plan					

4	Student's financial status led to delays in completion of research report					
5	Design reviews affected delivery time of research projects					
Quality						
1	Methodology used on the research projects influence the quality					
2	There is poor research workmanship of the research projects.					
3	Poor research designs affected the research quality					
4	Weak student's capacity affected the research quality					
5	The supervisor's competence affects quality of research					

Appendix II: INTERVIEW GUIDE WITH DIRECTOR AND RESEARCH FELLOWS

I am carrying out a PhD study on “Public Universities and research culture development in emerging economies in Great Lakes Region: Empirical lessons from Uganda”. You have been chosen as a key respondent in this study and you are kindly requested to spare some of your valuable time and give the required responses in order to ensure that this questionnaire is filled-in and answered appropriately. All information provided will be treated with utmost confidentiality and used specifically for academic purposes.

SECTION A: DEMOGRAPHIC INFORMATION

Gender

Male ☐

Female ☐

Age Bracket (years)

< 20 ☐

20-30 ☐

30-39 ☐

40-49 ☐

>50 ☐

Education Level

Certificate ☐

Diploma ☐

Degree ☐

Masters ☐

PhD ☐

Have you attained professional training in research skills and methodology?

Yes ☐

No ☐

Position in the organization

Student ☐

Academic Staff ☐

Dean of Faculty ☐

management ☐

☐

Length of time you have been in this University (years)

<1 ☐ 1-3 ☐ 4-6 ☐ 7-9 ☐ >10 ☐

1. In general, the vision of universities is teaching, research and service. What is the status of your university?
2. How is the structure of academic staff at your university?
3. What are the procedures adopted to evaluate academic staff?
4. Do existing academic staff assessment criteria take research into account?
5. What kind of research does your university take into account in existing academic staff assessment?
6. What weight does research have on decisions about academic staff's promotions and career advancement?
7. How does your university in particular, ensure the quality of the publications? Probe further
8. In other countries, funds for research are made available on a competitive basis throughout the University education sector according to university al performance. How is it in Uganda?
9. What other sources of fund, particularly for research your university receive?
10. Does academic staff to engage in research will formulate research policies, which among others, set research priority areas over a planned period and use attracting funding?
- 11 Does your university have a research policy? If it has, to what extent is the existing research policy viable to fostering a research culture in your university?
12. In what other ways does your university develop a research culture to your academics? Can you share some examples?

13. What are strategies employed by academic staff at your university to disseminate the research findings beyond peer-reviewed publications?

13. What other factors which you think are vital for promoting a successful research culture in the Uganda? Probe further

14. What are the current challenges facing University education Universities in Uganda in relation to developing a research culture?

15. What should Universities do to promote research Culture in Uganda?

Appendix III: INTERVIEW GUIDE WITH THE DEANS / HEADS OF DEPARTMENTS

I am carrying out a PhD study on “Public Universities and research culture development in emerging economies in Great Lakes Region: Empirical lessons from Uganda”. You have been chosen as a key respondent in this study and you are kindly requested to spare some of your valuable time and give the required responses in order to ensure that this questionnaire is filled-in and answered appropriately. All information provided will be treated with utmost confidentiality and used specifically for academic purposes.

SECTION A: DEMOGRAPHIC INFORMATION

Gender

Male ☐

Female ☐

Age Bracket (years)

< 20 ☐

20-30 ☐

30-39 ☐

40-49 ☐

>50 ☐

Education Level

Certificate ☐ Diploma ☐ Degree ☐ Masters ☐ PhD ☐

Have you attained professional training in research skills and methodology?

Yes ☐ No ☐

Position in the organization

Student ☐ Academic Staff ☐ Dean of Faculty ☐ management ☐

Length of time you have been in this University (years)

<1 ☐ 1-3 ☐ 4-6 ☐ 7-9 ☐ >10 ☐

1. What is the mission of your university? Does it combine both teaching and research?
2. What are the procedures adopted to evaluate academic staff performance in research?
3. Do existing academic staff assessment criteria take research into account? If yes, what weight does research have on academic staff's promotions and career advancement?
4. How does your university teach research for your academics? Probe further does your university take into account in existing research guidelines?
5. How does your university in particular, ensure the quality of the research and publications?
6. In other countries, resources/funds for research are provided by government. What about Uganda?

- 7 How resources for research are made available to university? Probe further / Modality of funding? And staff motivation?
8. What other sources of funding, particularly for research your university receive?
9. How are the funds for research and publications are remitted to your academics in the University?
9. Do academic staff to engage in research will formulate research policies? Probe further, does your university have a research policy?
10. In what other ways does your university do to develop a research culture to academics? Probe further Can you share some examples? Evidence?
11. How many research publications have you published in the last four years? Probe further what was the source of funding?
12. What are strategies employed by academic staff at your university to disseminate the research findings beyond peer-reviewed publications?
13. Do you think promoting a successful research culture is vital in the Uganda? Probe further what do to bolster a research culture?

Appendix IV: INTERVIEW GUIDE WITH ACADEMIC STAFF MEMBERS

I am carrying out a PhD study on “Public Universities and research culture development in emerging economies in Great Lakes Region: Empirical lessons from Uganda”. You have been chosen as a key respondent in this study and you are kindly requested to spare some of your valuable time and give the required responses in order to ensure that this questionnaire is filled-in and answered appropriately. All information provided will be treated with utmost confidentiality and used specifically for academic purposes.

SECTION A: DEMOGRAPHIC INFORMATION

Gender

Male ☐

Female ☐

Age Bracket (years)

< 20 ☐ 20-30 ☐ 30-39 ☐ 40-49 ☐ >50 ☐

Education Level

Certificate ☐ Diploma ☐ Degree ☐ Masters ☐ PhD ☐

Have you attained professional training in research skills and methodology?

Yes ☐

No ☐

Position in the organization

Student ☐ Academic Staff ☐ Dean of Faculty ☐ management ☐

Length of time you have been in this University (years)

<1 ☐ 1-3 ☐ 4-6 ☐ 7-9 ☐ >10 ☐

1. How is the career structure of academic staff at your university organized?
2. What are the procedures adopted to evaluate students' research work?
3. Does existing policy take research into account? Probe further If yes, what weight does research?
4. How does your university have research culture? Probe further what kind of research does your university take into account?
5. How does your university, in particular, ensure the quality of the research and publications?
7. In other countries, funds for research are made available on a competitive basis throughout the University education sector according to universities performance. How is it done in Uganda?
8. What other sources of fund, particularly for research your university receive?
9. How resources for research are remitted to academics your university?
10. Does the academic staff get engaged formulating research policies? Probe further, does your university have a research policy? Does the policy foster a research culture in your university?
11. In what other ways does your university develop a research culture to academics? Probe further, can you share some examples? Evidence?
12. How many research publications have you published in the last four years? Probe further, what was the source of funding?
14. What other factors which you think are vital for promoting a successful research culture? What should the University do to bolster a research culture?

15. What are the current challenges facing your Universities in Uganda in relation to developing a research culture?

Appendix V: FOCUS GROUP DISCUSSION GUIDE WITH POSTGRADUATE STUDENTS

1. In general, the function and goals of universities are teaching, research and service. What is the status of your university?
2. What do you know about the procedures of evaluating students' academics?
3. In other countries, resources for research are made available on a competitive basis throughout the University according to performance. How is it Uganda? How resources for research are made available to University specifically to your university?
4. Do your university encourage its academic staff to engaged in research formulating research policies? Does your university have a research policy? If it has, to what extent is the existing research policy viable to fostering a research culture in your university?
5. In what other ways does your university develop a research culture? Can you share some examples? Do the approaches/strategies indicate viability i.e., faculty research productivity? Evidence?
6. What do you say about the intensity of research in the Ugandan's Universities and your University in particular?
7. Have you ever been involved in any professional training research? What was your experience?
8. How many research publications have you published in the last two years? What was the source of funding?
9. What other factors which you think are vital for promoting a successful research culture in the Uganda University?
10. What should your university do to bolster a research culture? And what are the current challenges facing University in relation to developing a research culture?

APPENDIX VI: INTERVIEW GUIDE WITYH DEPUTY VICE CHANCELLOR
UNIVERSITY TOP MANAGEMENT

I am carrying out a PhD study on “Public Universities and research culture development in emerging economies in Great Lakes Region: Empirical lessons from Uganda”. You have been chosen as a key respondent in this study and you are kindly requested to spare some of your valuable time and give the required responses in order to ensure that this questionnaire is filled-in and answered appropriately. All information provided will be treated with utmost confidentiality and used specifically for academic purposes.

SECTION A: DEMOGRAPHIC INFORMATION

Gender

Male ☐

Female ☐

Age Bracket (years)

< 20 ☐ 20-30 ☐ 30-39 ☐ 40-49 ☐ >50 ☐

Education Level

Certificate ☐ Diploma ☐ Degree ☐ Masters ☐ PhD ☐

Have you attained professional training in research skills and methodology?

Yes ☐

No ☐

Position in the organization

Student ☐ Academic Staff ☐ Dean of Faculty ☐ management ☐

Length of time you have been in this University (years)

<1 ☐ 1-3 ☐ 4-6 ☐ 7-9 ☐ >10 ☐

1. In general, the mission of the University is to teach and carry out research. How is the status of your university organized?
2. What are the procedures engaging to full accreditation evaluation requirements?
3. Does existing policy of your university take research into account? Probe further If yes, what weight does research?
4. How does your university promote research culture? Probe further what form/kind of research does your university take into account?
5. How does your university, in particular, motivate research fellows to ensure the quality of the research and publications?
7. In other countries, funds for research are made available on a competitive basis throughout the University education sector according to universities performance. How is it done in Uganda?
8. What other sources of funding, particularly for research your university receive?
9. Does your university have research culture? How do you support research beyond disseminating of the findings and remitting findings to academics your university?
10. Does the academic staff get engaged formulating research policies? Probe further, does your university have a research policy? Does the policy foster a research culture in your university?
11. In what other ways does your university develop a research culture to academics? Probe further, can you share some examples? Evidence?

12. How many research publications have your university published in the last four years? Probe further, what was the source of funding?

14. What other factors which you think are vital for promoting a successful research culture? What should the University do to bolster a research culture?

15. What are the current challenges facing your Universities in Uganda in relation to developing a research culture?

APPENDIX V: DOCUMENT REVIEW CHECKLIST

Document type	Location	Purpose
University Policy and guidelines, Public research and development policy		Information on policies, structure and compliance research performance
Reports on funding of Universities, Policy Statement for research funding		Information on research projects funding and performance
University Directive and Circulars from University Education Council		Information on Circulars from Public Council for University education
University Annual Budget and Audit Reports		Information on Budget and research projects performance
Report on research and publications performance		Information on research project performance and publications
Academic staff assessment promotion		Information on academic promotion selection and monitoring
General guidelines and research minimum standards of education in		Information on the general research guidelines, process, selection of minimum

Uganda

University al research directorate
policy

University research funding and
publication reports

Academic staff list and qualification
levels and expertise,

Special technical audit reports in
research directorate

Reports a funding of academic
research and publications for the past
five years

standards.

Information on the research culture process

Information on the research funding process
and publications

Information on research report
infrastructure project performance

Information on the research process,
supervisor selection and monitoring

Research productivity and publications from
the schools.

APPENDIX VI: PROPOSED RESEARCH ACTION PLAN AND SCHEDULES
RESEARCH

Activity	DECEMBER 2023	JANUARY/FEB/MARCH 20224	APRIL/MAY 20224	JUNE/JULY 2024
Concept paper development				
Research proposal for grading and approval				
Research Proposal fine tuning				
Developing instruments of Data collection				
Pre-testing Data collection				
Data collection				
Data analysis				

Writing report first draft				
Submission and Thesis				
Editing of final copy of report				
Presentation and approval				
Submission of Final Thesis for Grading				
Writing Publications and Viva				

APPENDIX: VII RESEARCH SCHEDULES FROM DECEMBER, 2023 TO JUNE, 2024

S/No	Activity	Time	Person Responsible
	Writing Research Thesis 4 months		
	Organisation		
	Contact with authorities and allocation of Supervisors	1 week	Researcher and academic advisor
	Developing work plan and instrument of data collection	1 week	Researcher
	Recruiting and Research assistant	1 week	Researcher
	Training of research assistants or collaborator	1 week	Researcher
	Implementation		
	Trained research assistants pretesting of the instruments of data collection	1 week	Researcher & Assts.
	Data Collection	2 weeks	Researcher & Assts.
	Data management and cleaning	1 week	Researcher & Assts.
	Data processing and cleaning	1 week	Researcher & Assts.
	Processing and analyzing data.	1 weeks	Researcher

	Data Statistical Analysis	1weeks	Researcher
	Writing the research Draft Thesis information.	1 weeks	Researcher
	Presenting of first draft	1 week	Researcher
	Effecting submissions and comments of the first draft	1 weeks	Researcher
	Presenting second draft	1 week	
	Effecting submission and comments of the corrected draft	1 weeks	Researcher
	Presenting the Thesis grading for marking.	3 Days	Researcher
	Preparing for Vivas Meeting and publication	1 Week	Researcher

PENDIX: VIII: LETTER OF INTRODUCTION TO FIELD FOR DATA COLLECTION FROM SELINUS UNIVERSITY



SELINUS UNIVERSITY
OF SCIENCES AND LITERATURE

To whom it may concern,

It is attested that the student:

MARK KIEZA, resident in KYOTERA, Uganda

**RE: Registration number: UNISE2845FT Approval of the
Research Proposal for Data collection**

I am pleased to mention the above candidate is enrolled in the faculty of **Business & Media** of **Selinus University** and is about to pursue a **PhD in Education Management and Evaluation**.

This letter will formalize the process of gathering the necessary information and data for his research thesis through questionnaires and interviews. Since his research work will be his PhD thesis, you are kindly requested to provide the information he needs. We assure you that there will be no misuse of this information and the source of this information will be kept concealed.

The student will carry out his research work with constant commitment in order to defend his final doctoral thesis that is about *Public Universities and Research Culture Development in Great Lakes region of East Africa: empirical lessons from Uganda*.

This letter is issued for permitted uses in each country.

**Selinus University of Sciences
and Literature, 2019 February**

2019

Dr. Salvatore Fara - President of Selinus University

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World Certification Institute
Global authority on
International Certification



California University/UCI
not approved and recognized

APPENDIX: IX CONSENT FORM FOR RESEARCH PARTICIPANTS

Title of Project

The Public Universities and Research Culture Development in the Great Lakes Region of East Africa: Empirical lessons from Uganda

Name of researcher: Mark Kiiza

1. I confirm that I have read and understand the instruments of data collection for the above study and have had the opportunity to ask questions.
2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason.
3. I understand that this study aims to research culture development protects and that it maintains my anonymity and confidentiality. It will further secure storage of data and the use of an ID number in any publication.

I consent to (please tick Yes or No):

- Being interviewed **Yes/No**
- The interview being audiotaped **Yes/No**
- Being involved in a focus group discussion **Yes/No**

Name of Participant: Date: Signature:

Name of Researcher: Date: Signature: