

**ACADEMIC DISHONESTY MITIGATION MEASURES PUT IN PLACE BY
LIBRARIES FOR SUPPORTING POSTGRADUATE RESEARCH
AT SELECTED UNIVERSITIES IN KENYA**

MAINA ANTONY MWANGI

**A Thesis Submitted to the School of Science and Technology in Partial
Fulfillment of the Requirements for the Conferment of Master of Information
Science Degree of Kenya Methodist University**

JULY 2023

DECLARATION AND RECOMMENDATION

Declaration

This thesis is my original work and has not been presented for a degree or any other award in any other University

Sign

Date.....

Antony Mwangi Maina

ISK-3-0378-3/2021

Recommendation

We confirm that the work reported in this thesis was carried out by the candidate under my/our supervision.

Sign.....

Date.....

Prof Paul Maku Gichohi, Ph.D

Kenya Methodist University

Signed:

Date.....

Catherine Nzioka

Kenya Methodist University

COPYRIGHT

Antony M. Mwangi

©2023

All right reserved. No part of this thesis may be reproduced, stored in any retrieval system, or transmitted in any form or by any means: electronically, mechanically, by photocopying or otherwise, without prior written permission of the author, or Kenya Methodist University, on that behalf.

DEDICATION

To my mum and my late Dad for their ultimate support. Special dedication goes to the Almighty God.

ACKNOWLEDGEMENT

I give all the glory to our Almighty God my provider, for good health, and source of my strength and all his abundant provisions without which I could not have accomplished a thing.

I am grateful to Prof. Paul Maku Gichohi and Ms. Catherine Nzioka, my supervisors, who have patiently stood by me, always offering boundless encouragement and unwavering support. They have offered guidance through questions of every conceivable level of difficulty with their sharp analytical intellect while always displaying humility.

I also acknowledge other lecturers and students in my university and faculty who played a role that supported me in completing this research. I cannot forget the respondents who agreed to participate in this research and provided me with the data I needed for my study. Without them, this study would have been impossible. Moreover, I appreciate the University of Embu and Kenya Methodist University management for allowing me to collect research data from their people.

I also wish to acknowledge my parents, siblings, and friends for their continuous support and encouragement. May God bless you all.

ABSTRACT

Postgraduate research is significant in the academic discipline, and students are expected to submit original research without engaging in academic misconduct. Nevertheless, academic dishonesty continues to be a severe challenge among postgraduate students in different universities globally. Despite the different measures to counter academic dishonesty, the challenge continues to prevail. This study was motivated by the high rates of plagiarism and academic dishonesty reported by universities among postgraduate students. It aimed to assess the mitigation measures put up by libraries to curb academic dishonesty to support postgraduate research at KeMU and UoEM in Kenya. The objectives were: to establish the efficacy of plagiarism detection software, scholarly training, academic dishonesty awareness creation, and academic dishonesty policies and guidelines in mitigating academic dishonesty at the UoEM and KeMU in Kenya. The theory of planned behavior guided the research. It employed a survey research design. The target population included postgraduate students, Directors of Postgraduate Studies, and librarians, totaling 1008 participants. It used a sample size of 208 participants, constituting 195 postgraduate students, two directors of postgraduate studies, and 11 librarians from the UoEM and KeMU. It applied stratified sampling and simple random sampling within each stratum. Interviews and questionnaires were used to collect data from respondents. Pretesting of instruments was done in Kirinyaga University with 1 director of postgraduate studies, 5 librarians, and 25 postgraduate students. To determine the validity, the researcher used construct and content validity and Cronbach alpha coefficient was applied to determine reliability. The methods used for analysis were descriptive statistics like mean and standard deviation, while thematic analysis was used on qualitative data. The research data was presented in tables. The research followed research ethics, observing all research policies. It also ensured the respondents' safety and confidentiality. Results showed that academic dishonesty measures established by libraries for supporting postgraduate research in KeMU and UoEM, promote academic integrity. Background information on academic dishonesty presented the practice as a significant challenge to postgraduate studies. The practice is manifested in using software to commit academic dishonesty, falsifying information, and plagiarism in research and scholarly writing. The main approaches university libraries adopted to combat the challenge are: using anti-plagiarism software, creating awareness, training students, increasing access to research materials in online and physical libraries, and using academic dishonesty policy guidelines. However, the research findings showed that although the approaches have helped reduce academic dishonesty, they cannot eliminate the challenge completely; hence, the need for university libraries to adopt measures to improve the processes. The research concluded that postgraduate research is vital in creating useful knowledge, and its quality should be maintained by mitigating academic dishonesty. It recommended that universities management, faculty and libraries should increase collaborations between academic stakeholders, increase student mentorship, support antiplagiarism software use with other frameworks, make educational writing training a regular practice, and establish awareness creation forums to inform students about academic integrity policies and guidelines. This study was valuable in promoting quality and original postgraduate research without engaging in academic dishonesty.

TABLE OF CONTENTS

DECLARATION AND RECOMMENDATION	ii
COPYRIGHT	iii
DEDICATION.....	iv
ACKNOWLEDGEMENT.....	v
ABSTRACT.....	vi
LIST OF TABLES	ix
LIST OF FIGURES	x
ABBREVIATION/ ACRONYMS.....	xi
CHAPTER ONE	1
INTRODUCTION.....	1
1.1 Background of the study	1
1.2 Statement of the Problem.....	9
1.3 Purpose of the study.....	11
1.4 Research Objectives.....	11
1.5 Research Questions	11
1.6 Justification of the Study	12
1.7 Significance of the study.....	12
1.8 Scope of the study.....	13
1.9 Limitations of the study	14
1.10 Assumptions of the study.....	14
1.11 Operational Definition of Terms.....	16
CHAPTER TWO	17
LITERATURE REVIEW	17
2.1 Introduction.....	17
2.2 Postgraduate Research at Universities	17
2.3 Plagiarism Software in Libraries for Supporting Postgraduate Research.....	21
2.4 Training in Scholarly Writing in Libraries	26
2.5 Library Academic Integrity Policy Guidelines	32
2.6 The Creation of Awareness by the Library.....	37
2.7 Theoretical Framework.....	43
2.8 Conceptual Framework.....	47
CHAPTER THREE	49
RESEARCH METHODOLOGY	49
3.1 Introduction.....	49

3.2 Location of the Study.....	49
3.3 Research Design.....	50
3.4 Target Population.....	51
3.5 Sampling Techniques.....	53
3.6 Sample size	54
3.7 Research Instrumentation.....	55
3.8 Pre-testing of Research instrument	57
3.9 Validity of the Research Instruments.....	57
3.10 Reliability of Research Instruments.....	58
3.11 Data collection procedure	59
3.12 Data analysis and presentation.....	60
3.12 Measurement of variables	61
3.13 Ethical considerations	62
CHAPTER FOUR.....	63
RESULTS AND DISCUSSION	63
4.1 Introduction.....	63
4.2 Reliability Statistics	63
4.3 Response Rate.....	64
4.4 Demographic Information.....	65
4.4 Background Information on Academic Dishonesty.....	67
4.5 Support for Postgraduate Research at Universities.....	72
4.7 Training in Scholarly Writing in Libraries	94
4.8 Library Academic Integrity Policy Guidelines	104
4.9. The Creation of Awareness by the Library.....	112
CHAPTER FIVE	121
SUMMARY, CONCLUSION AND RECOMMENDATIONS	121
5.1 Introduction.....	121
5.2 Summary of Research Findings	121
5.3 Conclusions.....	128
5.4 Recommendations of the Study	130
5.5 Implication of the Findings on Theories, Practices and Policies.....	132
5.6 Recommendations for Further Studies.....	133
REFERENCES.....	135
APPENDICES	147

LIST OF TABLES

Table 3. 1: Target Population.....	53
Table 3. 2: Study Sample Size	54
Table 3. 3: Operationalization and measurement of variables.....	61
Table 4. 1: Reliability Statistics	64
Table 4. 2: Postgraduate students' academic level	66
Table 4. 3: Librarians' Level of experience	67
Table 4. 4: Role Played by the Different Stakeholders.....	68
Table 4. 5: Statements on Support for Postgraduate Research at the University.....	73
Table 4. 6: Suggestions for Improving Library Support to Postgraduate Students ...	77
Table 4. 7: Artificial Intelligence-based Applications in Postgraduate Education ...	78
Table 4. 8: Other Ways of Practicing Academic Dishonesty	79
Table 4. 9: Effectiveness of the Use of Anti-plagiarism Software	84
Table 4. 10: Statements on the use of Anti-plagiarism Software in Libraries.....	85
Table 4. 11: Suggestions to Improve the Use of Anti-Plagiarism Software	88
Table 4. 12: Execution of training on scholarly writing	95
Table 4. 13: Statements on Library's Scholarly Writing Training	97
Table 4. 14: Suggestions for Improving Training in Scholarly Writing.....	99
Table 4. 15: Statements on Library Academic Integrity Policies	105
Table 4. 16: Suggestions to Improve the Academic Integrity Policy Guidelines	107
Table 4. 17: Statements on Creation of Awareness by the Library	114
Table 4. 18: Strategies for Awareness of Academic Dishonesty.....	116

LIST OF FIGURES

Figure 2. 1: Conceptual framework	47
--	----

ABBREVIATION/ ACRONYMS

- APA - American Psychological Association citation
- KeMU - Kenya Methodist University
- MLA - Modern Language Association citation
- CUE - Commission of University Education
- NACOSTI - National Commission for Science Technology and Innovation
- R&D - Research and Development
- TPB - Theory of Planned Behavior
- CUE - Commission for University Education
- UoEM - University of Embu
- SPSS - Statistical Package for Social Science

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

Academic dishonesty continues to be reported in universities despite being highly unethical and unprofessional. Academic cheating among university students, especially those taking postgraduate studies, is grave and could lead to a highly unprofessional scholarly society (Parks-Leduc et al., 2022). Academic integrity has become the attention of many studies, mainly in higher education. Many academic stakeholders are concerned with the increasing number of academic integrity breaches reported globally. If anything, the academic integrity breach is currently considered a crisis in institutions of higher learning (Awasthi, 2019). Therefore, many academic institutions and stakeholders had considered various actions to contain this situation in higher learning. Many institutions used plagiarism detection tools to ensure students present their original work in postgraduate and undergraduate research (Awasthi, 2019).

This research addressed academic dishonesty measures put in place at select universities in Kenya to support postgraduate research. The chapter presented the background of the study, a statement of the problem, the purpose of the study, the objectives of the study, research questions, the scope of the study, the significance of the study, and definition of operational terms, and the summary of the whole chapter.

1.1.1 Perspectives on Postgraduate Research

Postgraduate research has been prevalent worldwide, with many students seeking to advance their professionalism enrolling for postgraduate studies, including Master's and Ph.D. The United States Census Bureau (2019) reported that the number of people with postgraduate degrees had doubled since 2000. The people who attended university

and continue to achieve a doctorate were significantly few, with each country representing a small percentage. Slovenia had 2%, Switzerland 3%, the United States 2%, the United Kingdom 2%, Germany 2%, and Australia 2%. It reported that the adult population in the US with a Master's degree had reached 21 million, and those with doctoral degrees had reached 4.5 million. Unlike undergraduate studies, postgraduate studies were associated with significant research in projects, theses, and dissertations. These research elements were the major characteristics and indicators of postgraduate studies.

Indeed, many dissertations and theses are published every year. For instance, the ProQuest database contains over 5 million dissertations and theses from researchers in over 3100 institutions globally. The database admits approximately 250000 works, both dissertations and theses, every year (ProQuest Dissertations and Theses Global, 2023). Due to the challenging nature of research, postgraduate research is also associated with academic integrity and dishonesty. Indeed, academic research must be original, and postgraduate students are expected to submit original work in their research, constituting academic integrity. However, the challenging nature of research makes postgraduate students cheat, constituting academic dishonesty. Besides, postgraduate research faces many challenges, including poor quality research, limited support from research supervisors, and academic dishonesty (Muraraneza et al., 2020). Academic dishonesty prevails as the most significant challenge in postgraduate research, where students submit work that has been plagiarized, lowering the quality of research in many disciplines.

Postgraduate education and research face many challenges today based on demand, supply, quality, and returns for the education providers and the other clientele involved. However, Gohar and Qouta (2021) argue that quality has become one of the most significant challenges in postgraduate research. Over the years, many students have preferred to take their postgraduate studies internationally, preferring developed countries like the United States, the United Kingdom, France, Germany, and Australia. However, with the exponential growth in the provision of higher education and the competition in the education sector, other countries have joined the international higher education level (Ochilova, 2020). This has made academic dishonesty a severe challenge in international, regional, and local postgraduate research.

Universities in the United States, the UK, Germany, and Australia have, for example, continued to report significant cases of plagiarism in postgraduate research papers (Peled et al., 2019). These countries have several measures to address postgraduate research quality. For instance, the United States has measures such as emphasizing quality assurance. The education sector in the United States ensures that universities offer quality education and produce research that observes academic integrity (Ellis & Hogard, 2019). Australia, the United Kingdom, and Germany also have significant measures for quality in postgraduate research (Ali et al., 2016). For instance, these countries have copyright protection rights that protect people's work. Academic papers are right protected, preventing students from presenting other people's papers as their own (Ison, 2018). Their universities also have academic integrity policies and guidelines that support quality research among their postgraduate students.

Postgraduate studies have also increased in Africa, with countries like South Africa, Egypt, and Tanzania offering advanced degrees. These countries also face several challenges in their postgraduate research. Graduates in South Africa demonstrate significant incompetence in their research fields even after graduating (Sonn, 2016). This incompetence has also been experienced in countries like Egypt, Botswana, Tanzania, and Kenya. In Egypt, universities also report plagiarism, a case of academic dishonesty (Moten, 2014). Universities in this country use antiplagiarism software, integrity policies, and guidelines to support quality research among postgraduate students. In Botswana, the universities have a high entrance requirement and strict regulations for the academic conduct through student being accountable for their performance and maintaining honesty in pursuit of their academic goals (Butale & Motswagosele, 2022). Nevertheless, cases of academic dishonesty still occur despite all the set standards. In Tanzania, while education stakeholders have always strived to maintain academic quality and integrity through integrity policies, students in higher learning institutions continue to present plagiarized papers. Postgraduate students also commit the crime of academic dishonesty by submitting plagiarized research papers (Abel et al., 2020). In Kenya, universities offering advanced degrees, like the University of Nairobi and Kenyatta University, also have academic dishonesty as an impediment to postgraduate research (Kwanya, 2022). However, these universities strive to maintain research quality through strict academic integrity policies and guidelines, antiplagiarism software, and academic writing training. Nevertheless, academic dishonesty remains a significant challenge in the academic sector globally.

Academic dishonesty is fraud involving deception, where a student misrepresents another researcher's work. It is a consequence of cheating involving unconsented use of information, research materials, sources, devices, or practices aiding in completing

academic activities (Baran & Jonason, 2020). For instance, using another researcher's work as a student to complete their research without recognizing them is a form of cheating that leads to academic dishonesty, violating academic and research integrity. Academic dishonesty also involves plagiarism, presenting another author's work and claiming it is one's original work (Krou et al., 2021). These academic dishonesty practices share the characteristics of fabrication and falsification. Academic dishonesty mitigation measures are the practices in which institutions of higher learning and academic stakeholders like libraries and universities identify to correct and punish academic dishonesty practices where applicable. University libraries have mitigation measures that reduce plagiarism and guide students and researchers at institutions of higher learning to use and cite sources correctly. They do independent research that does not contribute to academic dishonesty.

Today, learners have adopted new trends for cheating in academic writing. First, they use contact cheating. This trend involves engaging third parties to write one's assignments and projects and presenting that work as their own. Secondly, they use AI-based writing, which uses artificial intelligence tools to finish writing assignments and research papers (Holmes et al., 2020). For instance, Chatgpt, quilibot, jenni.ai, chat sonic, merlin, speedwrite.com, among others. They also use source code plagiarism which involves adapting or copying source code without attributing it to the original creator. Lastly, they use text manipulation or spinning (Akbari, 2021). This trend involves taking another person's content and running it through a software tool to spin text to mislead the anti-plagiarism software.

1.1.2 Overview of Academic Dishonesty in Universities

The history of academic dishonesty can be traced back to the first tests. Scholars establish that cheating prevailed in the Chinese civil service exams thousands of years

ago (Zheng, 2017). If anything, this cheating was prevalent even when its penalty was death for both the examiner and those taking the exam. Before establishing the American Psychological Association (APA) and Modern Language Association (MLA) at the close of the 19th century, rules on properly citing quotations and referring to other people's works did not exist, causing many people to plagiarize other studies and writings out of ignorance (Colella-Sandercock & Alahmadi, 2015). In the late nineteenth and early twentieth centuries, academic cheating was widespread at colleges in the United States. Estimations indicate that approximately two-thirds of students cheated at some point in their college education at the beginning of the twentieth century (Daumiller & Janke, 2019). Higher education in the United States moved towards meritocracy, so the scholarly society emphasized anti-cheating policies. Fraternities ran easy mills, where term papers were filed, and different students could resubmit them repeatedly, with the only change being the paper and author's name. The new student bodies started adopting a significantly negative view of academic dishonesty, establishing academic dishonesty measures for academic integrity.

European countries have also reported significant cases of academic dishonesty. For instance, Germany has had an intense public debate on academic dishonesty since the 18th century (Ruipérez & García-Cabrero, 2016). Most remarkably, academic dishonesty became visible in Germany in doctoral theses, mainly in the scientific discipline, where postgraduate students presented plagiarized scientific papers. Libraries in the United States, Germany, and other developed countries significantly mitigate academic dishonesty in universities. Libraries in these countries were among the first to implement antiplagiarism software (Brown & Janssen, 2017). In 2013 the Guardian reported that Germany's education minister quit his job over Ph.D. plagiarism. She was stripped of her Ph.D. because of plagiarism claims, making her

quit her ministerial position (The Guardian, 2013). Also, Karl-Theodor Zu Guttenberg, German Defense Minister, was stripped of his Ph.D. by the University of Bayreuth after he admitted that he had committed academic dishonesty by substantially copying other people's work inadvertently (Pidd, 2011). University libraries in the US have anti-plagiarism software that checks students' work originality.

Furthermore, Egypt is one of the countries with a long history of education worldwide. Education in Egypt dates to the fourth century, with students learning from hieratic scrolls later replaced by Demotics (Fahim & Zoair, 2016). Pupils used demotic scripts to write letters and other administrative documents. Students who did not understand the concepts of writing copied from other pupils, which was a form of cheating. This cheating continued until the 19th century with the introduction of formal education. Egyptian students cheat in education, especially in dissertations and theses. University libraries in Egypt also engage in academic dishonesty mitigation. Moten (2014) says that the Muslim world, including Egypt, experiences significant academic dishonesty. However, university libraries in these countries have mitigation measures for academic dishonesty, like using anti-plagiarism software, training in academic integrity, and creating awareness of academic integrity.

When the missionaries brought formal education to East Africa, Kenya being one of the countries in this region, cheating was also prevalent, where students copied their friend's work. In Kenya, students copied other writings at the college and university levels and submitted them for marking as their original work (Waithaka & Gitimu, 2012). As recently as 2019, the Kenyan media reported that senior Lecturer at Kenyatta University was stripped of their Ph.D. because of plagiarism (Kukali, 2022). However, with the advancement of education and technology in Africa, academic dishonesty has

continued to be abhorred, and it is considered a severe crime in the education fraternity. This has led to the development of academic dishonesty mitigation measures in universities, including plagiarism detection software by university libraries in Kenya (Waithaka & Gitimu, 2012). Nevertheless, other mitigation measures like training on scholarly writing and academic integrity awareness continue to be implemented in universities in Kenya.

Kenyan institutions of higher learning are among the universities that have reported cases of academic dishonesty. Universities offering postgraduate courses, Kenya Methodist University (KeMU) and University of Embu (UoEM) are some of the universities that have reported cases of academic dishonesty among their postgraduate students, where researchers at this academic level present dishonest work, mainly work with high plagiarism levels and fake sources (Ondondo & Rew, 2020). Part of the library's work is guiding students in conducting and presenting original research. In these institutions, KeMU and UoEM, plagiarism-checking software are available (Nzioki, 2018). However, besides lecturers in these institutions accessing this software and using it to check students' work originality, they do not make any other initiatives. Indeed, KeMU and UoEM's libraries have succeeded in installing and providing access to plagiarism software and establishing integrity policies. However, they are significantly lacking in training, integrity awareness, and training in scholarly writing (Nzioki, 2018). Nevertheless, academic dishonesty cases are still prevalent despite the available measures in these institution libraries. Therefore, while they emphasize academic integrity and avoiding academic dishonesty, they do not engage in practices that guide students on academic integrity practices and avoiding dishonesty.

Musau and Boibanda (2017) presented a study of academic dishonesty in Kenya Medical schools, focusing on Moi University School of Medicine. Among 156 students taking medical courses in their fourth, fifth, and sixth years, 80% understood academic dishonesty, 75% had witnessed students cheating in their studies, and 60.9% had committed academic dishonesty practices (Musau & Boibanda, 2017). The current situation raised questions about the effectiveness of the current measures in libraries in these institutions. Additionally, it raised questions on the applicable and effective practices that would eventually rid the academic environment of academic dishonesty. The situation in Kenyan higher learning institutions raised the question of whether the proposed strategies could ultimately assist postgraduate studies and reduce academic dishonesty. The scenario described above pointed out the need to assess academic dishonesty mitigation measures put in place by libraries and how they support postgraduate research at Kenya Methodist University and University of Embu in Kenya.

1.2 Statement of the Problem

University libraries have been at the forefront of reducing and preventing academic dishonesty since they are responsible for ensuring academic integrity and professionalism. An ideal library always has plagiarism software where students submit their research papers before being forwarded for marking (Eaton & Hughes, 2022; O'Donnell et al., 2020). Additionally, university libraries are expected to establish training programs, teach researchers how to write academic articles and avoid plagiarism and other forms of academic dishonesty. The Commission for University Education (CUE) has provided standards and guidelines for ensuring academic integrity. In its guidelines, CUE asserts that a postgraduate student should demonstrate novelty, innovation, independence, academic and professional integrity, and a

commitment to contributing new ideas in a given field (Commission for University Education, 2014).

Nevertheless, universities report academic dishonesty in term papers, theses, and dissertations. Some postgraduate students have been reported for presenting plagiarized theses. In 2010, the Bungoma High Court received a plagiarism case presented by Mary Anne Kukali against Mary Ogola and the University of Nairobi over plagiarism. In this case, Ogola had presented a thesis for the award of Masters in Arts in Project Planning and Management in 2010, a thesis that Kukali had presented to Maseno University in 2008 (Chepchirchir et al., 2020). This shows unethical practices in postgraduate research. Ison (2018), Maxel (2013), Musau and Boibanda (2017) presented a significant case of academic dishonesty in Kenyan medical schools and Kenyan universities, where cases of plagiarism were high in academic papers presented by university students. These reports demonstrated low uptake of academic integrity policies and measures to curb plagiarism, data fabrication, and other forms of academic dishonesty in Kenyan universities, hence the need for mitigation measures. If this challenge is not addressed, it could lead to a highly unprofessional scholarly society without ethics and a significant violation of authors' copyrights. Also, the practice could lead to significant litigations. Copying other people's work implies incompetence among scholars, leading to significant organizational losses (Abalkina & Libman, 2020).

Studies by Selemani et al. (2018), Olivia-Dumitrina et al. (2019) , Olivia-Dumitrina et al. (2019) describe academic dishonesty as unethical. These studies assessed plagiarism, plagiarism forms, punishment against students submitting plagiarized work to universities, and university students' perception of plagiarism. However, the specific

academic dishonesty mitigation measures that university libraries can consider have not been studied and must be addressed. This showed a need for the current study to establish how academic dishonesty mitigation measures by university libraries could support postgraduate research.

1.3 Purpose of the study

The purpose of this study was to assess the academic dishonesty mitigation measures put in place by libraries in supporting postgraduate research at KeMU and UoEM in Kenya to maintain honesty and ethics in university high education.

1.4 Research Objectives

This study was guided by the following objectives, to;

- i. Assess how plagiarism software by libraries supports postgraduate research at KeMU and UoEM libraries in Kenya.
- ii. Examine the training in scholarly writing by libraries to support postgraduate research at KeMU and UoEM libraries in Kenya.
- iii. Determine how library academic integrity policy guidelines supports postgraduate research at KeMU and UoEM libraries in Kenya.
- iv. Examine the awareness programs conducted by library on academic honesty to support postgraduate research at KeMU and UoEM libraries in Kenya.

1.5 Research Questions

This research was guided by the following research questions;

- i. How does plagiarism software in libraries support postgraduate research at KeMU and UoEM libraries in Kenya?
- ii. How does the training in scholarly writing by libraries support postgraduate research at KeMU and UoEM libraries?

- iii. How does the library academic integrity policy guidelines support postgraduate research at KeMU and UoEM libraries in Kenya?
- iv. How does the awareness programs by the library on academic honesty support postgraduate research at KeMU and UoEM libraries?

1.6 Justification of the Study

The study was prompted by the emergence of academic dishonesty mitigation measures that aim to improve how research is carried out in university institutions. The recognition and positive response by university libraries on the quality of research by library users thus call for more innovation and creativity. For example, a well-established university library with competent staff that can develop practical measures and create programs to promote academic honesty provides a foundation for coping with poor-quality of research. The effort by the university library staff also forms lasting partnerships to enable honesty and ethics in university higher education.

1.7 Significance of the study

This study was highly relevant in an academic and professional society. It would ensure that learning institutions produce competent individuals who can conduct original research without engaging in academic dishonesty. This was a significant aspect in the academic and professional world since the academic community would become ethical, holding all academic values in high esteem. Also, the study would ensure that universities produce competent postgraduates who can do original research for application in different industries.

The findings of this study would be helpful to postgraduate students as they would add more knowledge about how to avoid academic dishonesty and improve the quality of their research. Besides, the study was expected to influence postgraduate students and

how they handled their research since it mentioned various practices which should be carried out to prevent academic dishonesty. The study also benefits librarians as they can understand which areas to improve in countering academic dishonesty in libraries regarding student research. Furthermore, it would benefit policymakers such as university institutions and the national government since it would help the education ministry understand what is required to improve the quality of research. Therefore, they could take proper actions, such as creating an integrity policy and changing the curriculum to teach students how to enhance their research quality by avoiding academic dishonesty.

This study could contribute significant knowledge in Information Science on how university libraries can mitigate academic dishonesty in universities, mainly in postgraduate research. The study would also help other researchers since they can learn from it when handling their research. Also, it would help add knowledge of academic honesty in universities as the findings were directly from the library's users and staff as primary sources. Also, the study would help Kenya Methodist University and University of Embu gain knowledge about academic dishonesty mitigation measures; hence, they could practice academic honesty in other areas, such as standard assignments and research papers for other students, university staff, and surrounding society. Moreover, the study would guide on conducting quality research, where postgraduate students can conduct plagiarism-free research. It would also encourage and foster a culture of innovation and originality.

1.8 Scope of the study

The study included the KeMU University and the University of Embu libraries which were the ones to give the information needed to conduct the study. The study included

academic dishonesty mitigation measures put in place by libraries to support postgraduate students' research and no other practices in the university.

The study had various variables, including antiplagiarism software, scholarly writing training, academic honesty awareness, and academic integrity policies and guidelines in the university library. The study's dependent variable was postgraduate research. However, the proposed study did not address the factors that lead to academic dishonesty among postgraduate students. Also, it did not address the various universities' punishments for students who engage in academic dishonesty. The individuals who did provide data for this study included postgraduate students, directors of postgraduate studies, and librarians.

1.9 Limitations of the study

There was a limitation as data was collected from only a few selected universities in Kenya, so it only represented the situation of some libraries. Not all library users participated in the study, and library users' opinions might differ. Therefore, the study's findings represented what is happening in universities but may not be the actual situation of all Kenyan universities. Moreover, there was a challenge of some respondents' fear of disclosing their institution information, for instance, directors of postgraduate studies and librarians. However, to counter this limitation, the respondents were assured that the information was for academic use only and was treated with the utmost confidentiality.

1.10 Assumptions of the study

This study assumed respondents understood the language used in questionnaires and were willing to answer the questions honestly. Another assumption made was that the

client did not have control over the information collected, nor was the researcher biased. Also, the study assumed that the information respondents shared was true to their knowledge and would assist the research. Furthermore, the researcher assumed that library management recognized the value of academic dishonesty mitigation measures in delivering quality research.

1.11 Operational Definition of Terms

Academic dishonesty	A fraudulent behavior involving deception, where a student misrepresents another researcher's work.
Plagiarism	This is an act of representing other people's work, ideas, thoughts, or expression as own original work.
Quality research	The scientific process encompassing all aspects of study design; in., it pertains to the judgment regarding the match between the methods and questions, selection of subjects, measurement of outcomes, and protection against.
Research	The systematic investigation into and study of materials and sources to establish facts and reach new conclusions.
Postgraduate	Relating to or denoting a course of study undertaken after completing the first degree.
Postgraduate Research	A formal discipline of study recognized by a university or institution of higher learning.
Academic Integrity	Measures put in place to ensure students do not engage in
Mitigation	academic dishonesty.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The last chapter covered the background of the study. This chapter provides a review of literature by scholars regarding the phenomena under investigation. The literature addresses postgraduate research at universities, plagiarism software in libraries for supporting postgraduate research and training in scholarly writing in libraries for facilitating postgraduate research. It has also discussed library academic integrity policy guidelines in enhancing postgraduate research and the awareness programs by the library on academic honesty to support postgraduate research. It concludes the empirical literature with a summary of the research gaps identified. A theoretical and conceptual framework has also been provided, including a description of the main variables.

2.2 Postgraduate Research at Universities

Postgraduate research courses at universities entail the completion of original academic research. These courses also involve training in research skills that equip a postgraduate student with the knowledge to become an independent researcher who can advance knowledge in their study field. Postgraduate research programs enable students to develop their experience and knowledge in their study discipline by completing a major research project (Bonaccorsi & Secondi, 2017). However, this must be done under the supervision of an accomplished academic, referred to as a research supervisor. The indicators of postgraduate research involve the identification of a viable research topic, faculty or supervisory approval of the topic, and successful commencement of research under the identified topic. Also, it involves writing a thesis or dissertation following

academic writing and research policies (Bonaccorsi & Secondi, 2017). Nevertheless, the project must be original, not presented by another person in the academic realm.

Postgraduate research involves programs that allow postgraduate students to develop their knowledge and experience within their study field by completing a research project under the supervision of an accomplished academic. Cooksey and McDonald (2019) present significant literature on the postgraduate research journey, guiding students on how to survive and thrive in postgraduate research. These authors examine various research disciplines and data-gathering methods to meet research criteria and quality. Their guide covers the whole postgraduate research journey, from the first considerations for enrollment to a higher degree to the final dissertation and thesis and possible publication of a student's research. This guide is not specific to any country or any academic program. It cuts across postgraduate research as a general subject, guiding students across the globe on how to conduct their postgraduate research and meet research quality.

In an Uzbekistan context, Ochilova (2020) claims that postgraduate education aims to apply scientific research in production and introduce new content to social development. Ochilova (2020) claims that working with researchers, professors, and lecturers in higher educational institutions and universities creates conditions for students to engage in research work and participate actively in innovative programs, research projects, and startups. Ochilova (2020) demonstrates the significance of postgraduate research in its contribution to social development, economic development, and professionalism. This argument is similar to the submissions of Ali et al. (2016) who say that postgraduate research has significant contributions to people's lives, mainly in scientific and economic developments. They argue that there is a significant need to ensure that the government, universities, and research institutions must work

with the young people involved in postgraduate research to ensure and guarantee quality in higher education, mainly in postgraduate research.

Daniel et al. (2018) also presented a study on postgraduate research based on the postgraduate conception of research methodology. The researchers investigated how the conception of postgraduate research methodology affects learning and teaching. Basing their study on research-intensive universities in Malaysia and New Zealand offering similar postgraduate programs, the study explored factors that could motivate students' selection of research methodology and the challenges they face in understanding research methods. The study revealed that postgraduate students understand that research methodology knowledge is highly significant in postgraduate education because it is vital in conducting postgraduate research (Daniel et al., 2018). While some participants in this study perceived research methodology as a discipline, others argued that it is a set of skills that one acquires without understanding research deeply. This indicates that a student could significantly understand research methodologies and fail to understand how to apply the knowledge to research (Daniel et al., 2018). However, Saeed et al. (2021) assert that the contribution of research methodologies to completing postgraduate research cannot be overlooked. Therefore, postgraduate students undertaking postgraduate research projects must understand research methodologies significantly.

In South Africa, Cekiso et al. (2019) presented a study on a University in the Eastern Cape of South Africa. The study focused on the challenges that could limit the success of postgraduate research students at the university. Cekiso et al. (2019) established that many students enroll for postgraduate studies at this university at the master's and Ph.D. levels. However, they face many challenges that could lead to their failure, including

poor feedback, communication breakdown, absenteeism of some supervisors, and a lack of ethics. Sverdlik et al. (2018) also presented a study that explored factors that affected doctoral students, including well-being, success, and satisfaction. These factors are evident in schools and the student's personal life. The factors presented by Cekiso et al. (2019) lead to poor supervision of postgraduate research, causing many postgraduate students to fail. Cekiso et al. (2019) used a case study design in the study under a qualitative research approach. The study recommended intervention strategies to mitigate the situation, such as adopting a collaborative cohort model, communication guidelines, and supervisor training.

In Kenya, Mbom (2021) presented a study on an assessment model for supervisors supervising students taking postgraduate research in Kenyan universities. In this study, Mbom (2021) establishes that many postgraduate research students still need to complete their research projects. This indicates that many supervisors fail in their supervisory work. Therefore, Mbom (2021) sought to recommend a supervisory model for research supervisors to ensure that postgraduate research students complete their research projects and that they have been done following all research policies and ethical considerations. Muraraneza et al. (2020) also argue that postgraduate research supervision in nursing faces many challenges that affect the quality of nursing education and the quality of nursing students' research.

Academic dishonesty has been identified as contributing to or committing dishonest acts by individuals engaged in learning, teaching research, and other related academic activities. However, since institutions of higher learning must maintain academic integrity, they establish mitigation measures to combat academic dishonesty. These institutions use several mitigation measures, including using plagiarism software,

training in scholarly writing, academic integrity policies, and creating awareness of academic integrity.

2.3 Plagiarism Software in Libraries for Supporting Postgraduate Research

Plagiarism detection software is an application that detects the similarity of academic and business papers with published literature and other online content. The software compares an author's text with abstracts, citations, and millions of academic journal articles and books from publishers (Von Isenburg et al., 2019). If the author's text resembles another work, the software highlights the similar text and gives a percentage of the copied or plagiarized text. It also identifies the text that the similar text has been copied from to guide research in reducing the similarity of their work (Von Isenburg et al., 2019). It also assists research supervisors and researchers in determining if the research is original or copied from another source.

The academic world continues to experience the proliferation of new plagiarism forms from digital sources. Plagiarism, the most prevalent challenge in the modern academic world, continues to increase as a problem among undergraduate and postgraduate students. This plagiarism type offers new opportunities and easy access to information, posing various challenges across the global education sector (Olivia-Dumitrina et al., 2019). Awasthi (2019) presents several plagiarism types: paste collections, structural plagiarism, translations, clause quilts, disguised plagiarism, pawn sacrifice, copy and paste, shake and paste, self-plagiarism, and cut and slide. Today, students have access to various electronic and digital sources that are always accessible at any time. Internet materials are particularly accessible through effective search engines. Students' ease of accessing and downloading electronic information sources has made plagiarism an educational culture, significantly undermining academic integrity (Early et al., 2021).

However, the availability of plagiarism detection software is an instrumental strategy for addressing academic dishonesty presented through plagiarism (Early et al., 2021). Awasthi (2019) presents several plagiarism detection software, including iThenticate, Turnitin, Dupli Checker, Anti-Plagiarism, Paper Rater, Plagscan, Viper, Plagtracker, and Plagium. Plagiarism detection software allows a significant collection of documents to be compared with each other, making successful similarity detection much more likely.

The emergence of anti-plagiarism software, web-based services, and powerful computers that can mine large electronic databases for plagiarized content can revolutionize the peer review process and improve the quality of published research, especially among postgraduate students. This study's limitation is that it only claims that plagiarism detection software aids in avoiding plagiarism. However, it fails to show how this should happen and how university libraries can apply other academic dishonesty mitigation measures.

Von et al. (2019) recognized the significance of plagiarism detection software, mainly when used in student papers. They studied in the United States at Duke University in Durham, North Carolina. The authors argue that it is relevant to address plagiarism in academics to prevent professional misconduct. For instance, in their study, Von et al. (2019) states that nursing students report plagiarism between 38% and 60%. However, Fatemi and Saito (2020) in a study on plagiarism among students in Australia, argue that not all plagiarism in student papers, both undergraduate and postgraduate, is deliberate. Poor organization of work, lack of skills, and knowledge of scholarly writing can lead to accidental plagiarism (Von et al., 2019). Libraries in universities implement plagiarism detection software to detect plagiarism in student papers and as a formative

feedback approach to students on writing their papers before they are due. While this study is valid and instrumental, it fails to show how research supervisors can differentiate between intentional and accidental plagiarism.

Plagiarism detection software works by highlighting plagiarized text and generating a plagiarism score. After uploading the document to the software, it highlights text that matches the document in its database. These highlights prompt the author to check their papers before submitting them for marking and approval (Von I et al., 2019). If the student did not check their papers for plagiarism, the lecturer or project supervisor checks the work and returns them for corrections. Nevertheless, lecturers and project supervisors cannot judge plagiarism percentage solely on the highlighted text and the score the software generates (Kulkarni et al., 2021). The responsible use of plagiarism detection software calls for the lecturer or the project supervisor to review every segment of the highlighted work to determine the similarity of the content to published work and how the student has used their citations. This happens because some plagiarism is acceptable, including commonly used terms in various academic disciplines, definitions, and text recycling. Von et al. (2019) assert that the lecturer or the project supervisor must determine whether theses and dissertations students submit are a form of the published content.

Halgamuge (2017) investigated the use of Turnitin antiplagiarism software as a writing formative writing tool among undergraduate and postgraduate students. In this study, Halgamuge (2017) factored those students who use Turnitin software take different subjects and have different talents and learning approaches. He discovered that Turnitin software gives feedback for different study subjects like essays compared to engineering or mathematics. This study established those undergraduate students who

use antiplagiarism software report high similarity scores in their assignments at the beginning of the semester. Notably, their similarity scores go down significantly towards the end of the semester. This factor indicates that the consistent use of antiplagiarism software helps students reduce plagiarism in their writing (Halgamuge, 2017). Nevertheless, using the software helps students reduce the similarity in their drafts to make a final copy for submission. Therefore, Halgamuge (2017) observed that if a student has been using anti-plagiarism software in their undergraduate studies, their chances of having low plagiarism scores in their postgraduate studies are high.

Singh (2016) supported these assertions on preventing plagiarism in the digital age, focusing on Indian universities. Singh (2016) in a study on plagiarism and digital technology in India, argues that digital technology has made students engage in plagiarism because of the ease of copying work from internet sources. However, Singh (2016) also claims that the same digital technology enables the faster and easy detection of plagiarism in student and research papers using antiplagiarism software. He says Indian universities use different antiplagiarism software, including Turnitin, iThenticate, and Urkund. Singh (2016) also emphasizes the need to retain the technical skills of using antiplagiarism software from undergraduate to postgraduate studies to ensure that students taking postgraduate courses have mastered the practice of plagiarism reduction in their work.

Turnitin has become the most used antiplagiarism software in academics and research organizations. Pai and Parmar (2015) conducted a user awareness survey on Turnitin software. These researchers define plagiarism as taking credit for other people's works and ideas intentionally or unintentionally and claiming that it is a significant threat to research. Pai and Parmar (2015) claim that educational institutions must apply various

measures to curb this threat and create awareness among users on applying antiplagiarism measures to identify plagiarized information. One of the most effective antiplagiarism measures has been using antiplagiarism software. Pai and Parmar (2015) study demonstrated that Turnitin is many universities' most prevalent antiplagiarism software. In establishing awareness of this software among students and faculty at Manipal University, Pai and Parmar (2015) found that while students and faculty use the software, there is much they do not understand. Therefore, the study needs to create awareness about Turnitin among library users in this institution and others using the software.

Narasanaikar and Hangaragi (2017) also observed the frequent use of Turnitin as an antiplagiarism software among university faculty and students, covering 51 countries globally. However, they added that universities and their libraries prefer using Turnitin for its advantages. Some of these advantages are that it is one of the least resource-intensive software, it detects collaboration between peers, and it helps detect whether plagiarism is a problem. Nevertheless, Narasanaikar and Hangaragi (2017) warn against Turnitin's disadvantages despite its preference by many institutions. While the software detects plagiarism, it does not identify plagiarism per section but merely matches material in a document uploaded to its website to materials on the internet. They also claim that Turnitin has significant limitations and blanket screening.

Indeed, the relevance of plagiarism detection software in university libraries must be considered in assisting postgraduate research. It is a significant measure to ensure that postgraduate students observe academic integrity by presenting original work. Libraries provide the service to lecturers and project supervisors to check plagiarism levels in dissertations and student theses before they can approve them. Rop (2017) claims that

the adoption of plagiarism detection software is on the rise, with Turnitin claiming that it has a customer population of over 15000 institutions and over thirty million students subscribing to its plagiarism detection service.

In Kenya, institutions like Kenyatta University, the University of Nairobi, and the United States International University, among others, have subscribed to Turnitin for plagiarism detection services (Rop, 2017). Institutions of higher learning implement this software through their library. In turn, the library personnel give lecturers and project supervisor's login access to submit student papers to check for similarities.

Also, Rop (2017) reports that students can subscribe individually to the software services to ensure they submit original content in their theses and dissertations. They can also use their universities' services because their libraries ensure they maintain and uphold academic integrity (Ranawella, 2021). This approach ensures that if this work is published, it does not violate academic integrity. Moreover, it is a practice for promoting innovation in academics because it forces students to engage in original research rather than depending on internet searches and copying and pasting other researchers' submissions.

2.4 Training in Scholarly Writing in Libraries in Facilitating Postgraduate Research

Training in scholarly writing focuses on academic skills and fundamental elements of scholarly writing. This training ensures that university students, mainly postgraduate students acquire theoretical and practical skills to produce and present texts in their academic discourse (Adom, 2021). The training enables students to practice critical reading and writing through analyzing, summarizing, synthesizing, and evaluating

ideas. It also trains students to engage effectively with academic sources and incorporate them into their research (Adom, 2021). Moreover, it familiarizes students with the different academic writing styles and formats, including APA, Harvard, MLA, and Chicago.

Universities are significant in the Research and Development (R&D) process. An essential aspect of this research process is providing access to university information resources through libraries (Melnychuk et al., 2021). Indeed, university postgraduate students are vital producers of research, and information access is an essential factor in their research. In many postgraduate programs in various universities across the globe, postgraduate students must conduct research projects and present a report to their faculty as a prerequisite for completing their postgraduate degrees (Melnychuk et al., 2021). Faculty members, lecturers, and project supervisors also engage in research, take postgraduate students to supervise their projects, and their assessment is based on the output of their studies.

Nevertheless, research projects involve the powerful writing of proposals, dissertations, and theses (Putri & Saputra, 2021). These fall under scholarly writing, where postgraduate students write academic articles to present to their faculty and for possible publications. In fact, after successfully conducting viable research that has been approved, students may seek to have their articles published in academic journals.

Pickton (2016) researched how and why a research culture can be implemented in an academic library. Pickton also described and evaluated the efforts to achieve this endeavor in a university library, basing the context of her study at the University of Southampton in the United Kingdom. Besides, the author applied the top-down and bottom-up approaches to facilitate practitioner research. This study revealed that these

approaches significantly increase practitioner research activities, ranging from library staff to researchers (Pickton, 2016). This factor leads to multiple enhancements to library services, with several innovative practices being presented to the academic and professional community via conferences and academic publications. The study presents many ideas and practical suggestions to encourage and facilitate practitioner research in the academic library setting (Pickton, 2016). Indeed, these practices are geared toward academic writing training to help researchers improve their research practices and presentation through writing (Melnychuk et al., 2021). Therefore, it demonstrates a library's essential role in scholarly training to assist in postgraduate research because postgraduate students form many researchers supported by universities. Indeed, the study by Pickton (2016) is valid; however, it fails to demonstrate the effectiveness of scholarly writing training in postgraduate research. It also does not present strategies to motivate students to participate in academic writing training.

Based on the plagiarism rates reported in universities among postgraduate students, it is evident that university libraries lag in educational training. Indeed, this was not among the roles of libraries because libraries have always acted as sources of information, linking communities to information sources and helping people acquire knowledge. However, changes in ICT and academic requirements have forced libraries to evolve, and their roles follow this evolution (Jalal, 2019). Therefore, in the wake of many challenges in society and the need for research to address these challenges, libraries must participate fully in supporting research. Indeed, they have always played this role by providing information sources on various disciplines.

Nevertheless, it has become evident that they must train researchers, especially postgraduate students, on how to conduct research using various research

methodologies and present the reports of their research findings and research process through academic writing (Selemani et al., 2018). Pickton (2016) demonstrated that libraries could achieve this endeavor through publications and conferences, where they can publish scholarly writing guides and avail them for student access to the libraries and library websites. Moreover, libraries can host conferences on academic writing to train postgraduate students in scholarly writing and refer them to various information sources on this subject in their university library.

Wang and Qin (2022) studied facilitating and assessing scholarly writing to graduate students, focusing the research on an academic program. They based their study on theory and discussed the practical experience collated during designing, implementing, and assessing a genre-based strategy to facilitate postgraduate students' scholarly writing and evaluate their academic writing competence. Wang and Qin (2022) argue that students have different interests in delivery, structuring, and assessing their work for academic success. Therefore, students approach academic writing from different perspectives addressed by their interests.

Moreover, Wang and Qin (2022) demonstrate that academic programs have different writing requirements. This situation presents libraries with an opportunity and a challenge to train postgraduate students in academic writing based on their academic programs considering all their different interests in academics. Indeed, Rop (2017) also demonstrates the need for academic writing training in universities among students engaged in research in Kenyan universities. However, Rop's research shows that the University of Nairobi only participates in acquiring plagiarism software licenses and providing them to faculty and students, leaving the training aspect to respective colleges (Rop, 2017).

While training students on how to use plagiarism detection software is vital, university libraries must cover all academic training elements, such as appropriate citations, different referencing styles, formats, and correct use of grammar, among others, in their academic writing training for postgraduate students. Like the Pickton (2016), Wang and Qin (2022), Rop (2017) studies fail to show the effectiveness of scholarly training and how students can be motivated to participate in the training. Wiegand (2022) explored the support role of a library in research. He says that the role of a library is contained in its mission statement. Fundamentally, Wiegand (2022) says that a library focuses on information and resource services provided to enhance learning, teaching, and research. Indeed, learning and teaching have always focused on information literacy; however, research support has always been diffuse. Nevertheless, libraries provide significant core services to the research community, translating their research and article writing support. Wiegand (2022) quotes the services as scholarly resources, document delivery, online reference service, training, library as a place, research consultations, research output services, and grant support.

The research field has recently experienced a significant shift from print to electronic journals, eBooks, and databases, witnessing a vital shift in the significance of collections as a research support indicator. The prevalence of electronic journals and significant publisher backsets enables academic libraries to provide access to scholarly resource collections, which is impossible in the print-only context Wiegand (2022). Libraries collect journal titles and provide them on their websites for students to use in their research and scholarly writing. However, the plagiarism rates available in many postgraduate research articles demonstrate that many students do not know how to use their libraries' scholarly resources. Therefore, this creates a gap in this library service and an opportunity for libraries to train their students, mainly postgraduate students, in

scholarly writing, focusing on using scholarly resources without plagiarizing their work (Awasthi, 2019). The author also observes that providing resources without training students is ineffective. However, if libraries could train students on how to use scholarly articles to avoid plagiarism, their scholarly sources' provision service would become complete and fulfill the research support role of a library.

Online reference services for researchers are another significant library role in supporting research. The shift to electronic information services enables libraries to further their research support role (Twum et al., 2022). Some of the services in this factor include electronic awareness services in library databases, linking catalogs from citations to articles, e-reference services, recommendations to suggest new book titles, and links to information significant to researchers and students, including copyrights, ethics, regulations, and intellectual property. The Kenyatta University plagiarism policy and guideline document recognizes current research built and borrows from previous research (Kenyatta University, 2020). Therefore, postgraduate students build their studies on previous studies, referring to work done by other authors in their interest subjects. Libraries have ensured that students have the studies to build current research upon by providing online reference services. These services are necessary for students to grapple with print-only references, which would pose significant challenges in their research process. Nevertheless, as Awasthi (2019) claimed in their study, libraries must train students on referencing to credit the authors of the work they build their research upon. These submissions align with the Commission of University Education (CUE) library standards that submit that libraries in universities must train their students in academic writing. CUE also emphasizes training that covers paraphrasing, referencing, summarizing, and sentence construction.

Indeed, training is a library service that universities and librarians must pay attention to. The demand for academic training staff and postgraduate students continues to increase with the proliferation of electronic resources and services available for research support (Ard & Ard, 2019). Moreover, the increased cases of plagiarism in postgraduate student papers, as Stoesz and Eaton (2020) demonstrate, increase the need for training postgraduate students on scholarly writing. Garner (2006) claims that scholarly writing training for postgraduate students must include information literacy, bibliographic management, referencing styles, citation searching, and mastering research services and resources.

2.5 Library Academic Integrity Policy Guidelines in Enhancing Postgraduate Research

Postgraduate addressing progressive concerns about research integrity is challenging because of varying definitions across the globe of what contributes to research misconduct (Tijdink et al., 2021). As students and entry-level researchers, research students have an ideal position in the research integrity debate. In a study that fostered postgraduate research in Australia, Paradeise and Filliatreau (2021) claim that integrity in research is undermined by the dramatic cases of academic misconduct exposed in the media and the arguably more prevalent and less visible bleaches and more prevalent but less discernible integrity breaches.

In the United States, research misconduct is the fabrication, plagiarism, or falsification in performing, proposing, reviewing a study, or presenting a research result in a report (Paradeise & Filliatreau, 2021). Questionable research practices are actions that violate the research enterprise's traditional values and those that may undermine the research

process, even though they do not directly undermine the integrity of the research being conducted.

Despite the differences in the definition of academic misconduct or dishonesty, research shows that questionable research practices affect a third of the research. According to Wadman (2005), a third of all researchers claim they have engaged in one of the top ten research misbehaviors in the last three years. Indeed, this is data collected among experienced researchers without factoring in what novice researchers do, contributing to academic misconduct. Paradeise and Filliatreau (2021) assert that postgraduate students are considered research trainees when making academic integrity policies. This consideration comes with the disconnected experience of postgraduate students in research because they are just beginning to conduct research. Moreover, Paradeise and Filliatreau (2021) claim that postgraduate students in Australia are dissatisfied with the information they receive concerning how to avoid academic integrity breaches. Libraries are highly equipped with scholarly information, making them instrumental in discerning when academic integrity has been breached in research. Therefore, Gunton (2022) claims that academic libraries and librarians are well-placed to guide students in avoiding academic integrity breaches by establishing academic integrity policy guidelines for university students, especially for postgraduate students who have just started conducting research projects.

Library academic dishonesty policy guidelines ensure that students conducting research in universities do not breach academic integrity. Academic dishonesty policy guidelines must meet five core elements to be considered exemplary, including access, approach, responsibility, detail, and support (Miron et al., 2021). With access, the policy must be easy to locate and read. They must be well-written and concise in comprehensible

language that students can easily understand. Therefore, Paradeise and Filliatreau (2021) claim that university libraries must significantly present their academic dishonesty policy guidelines following the access principle. The approach follows that the policy must clearly state its purpose and values (Stoesz & Eaton, 2020). With responsibility, the policy must clearly outline the responsibilities of all stakeholders, including university management, library staff, and students. The detailed principle posits that the policy must have details with understandable objective outcomes, observing the contextual factors related to academic dishonesty and integrity breach decisions (Paradeise & Filliatreau, 2021). The library must also have systems to facilitate policy implementation, including resources, procedures, training, and modules (Stoesz & Eaton, 2020). The policy outlines all the various academic integrity breaches.

Stoesz and Eaton (2020) in a study on academic integrity policies in public universities in Canada, claim that formal policies with careful development and implementation are essential to an institution because they reduce unethical behavior, primarily when the pressure to act unethically is high. Academics, especially research projects, pressurize students significantly. Postgraduate students are pressured to submit their theses and dissertations and complete their academic programs making the desire to commit academic misconduct very likely and tempting (Stoesz & Eaton, 2020). Lecturers and research project supervisors may not be available to guide students on the academic dishonesty policy guidelines. However, libraries fit significantly in conducting this endeavor because it is the source of information in the university. Therefore, they have a significant responsibility to develop these policies with various research professions and present them for access by students in the library and other access points such as the library website. Besides, the policies cover many aspects of academic integrity.

They contain guidelines on paraphrasing content, summarizing, and the maximum percentage of similarity that a student's work should contain (Mahmud et al., 2019). The role of libraries in this endeavor is to present policy manuals to students. They also come in by providing plagiarism-checking services to students.

Fatemi and Saito (2020) studied academic integrity at Australian universities, focusing on postgraduate research students. Indeed, many studies assume that postgraduate students have a prior understanding of academic integrity. However, Fatemi and Saito's (2020) study that used 39 universities to investigate online academic integrity policy established otherwise. This study discovered that one in five policies should have mentioned students pursuing higher research degrees. Six of the universities that Fatemi and Saito (2020) studied had an academic integrity policy for higher degrees by research. The study established that one in five students in this learning category responded that they had never heard about academic integrity, and two in five claimed they did not know whether their universities had academic integrity guidelines. Therefore, while researchers such as Fatemi and Saito (2020) and Stoesz and Eaton (2020) support the validity of academic policies, Fatemi and Saito (2020) demonstrate that they could exist in a university through its library but still be ineffective. Therefore, they believe that academic integrity policies and guidelines must be accompanied by students' knowledge about them and strict enforcement by the university.

Cerdà-Navarro et al. (2022) also assessed the issue of academic integrity, focusing on assessment fraud in postgraduate studies in Spain. This study used three strategies many universities use to enforce academic integrity: technology to detect plagiarism, regulatory devices and resources, and training and awareness creation activities. This study showed that many universities in Spain have plagiarism detection tools and codes

of conduct for postgraduate students. The study showed that integrity policies differ for different student categories, where master's and Ph.D. students in Spain subscribe to strict regulations for controlling academic fraud (Cerdà-Navarro et al., 2022). However, Fatemi and Saito (2020) show this is a significant disadvantage in realizing academic integrity. Their study shows that students tend to carry their undergraduate research practices to their postgraduate studies. For instance, lecturers responding to their studies claim they meet postgraduate students with academic dishonesty cases. When asked, they say they have been doing that all their studies. This implies that a student who commits academic dishonesty in their undergraduate course will continue the practice in their postgraduate studies (Fatemi & Saito, 2020). Therefore, if academic integrity policies must be effective, they must apply across all the university academic levels. Furthermore, undergraduate and postgraduate students must adhere to similar academic integrity policies and guidelines.

Indeed, Fatemi and Saito (2020) do not oppose the existence of academic integrity policies and guidelines. They show the significance of these policies in combating academic dishonesty in universities. However, they question the application of these policies in various Australian universities, a situation replicating itself in other universities globally. For instance, they point out that these policies are meant for students, while research project supervisors also conduct academic dishonesty by publishing student articles in journals without their consent (Fatemi & Saito, 2020). Also, they claim that while universities have these policies and guidelines, most students are unaware of their existence. Therefore, they advocate for training on the policies and other academic integrity measures. Stoesz and Eaton (2020) also observed the lack of awareness among students on the existence of academic integrity policies; therefore, their effectiveness is contingent upon student awareness about them.

Universities in Kenya have these guidelines in their libraries. For instance, Kenyatta University has an elaborate anti-plagiarism policy and guidelines that warn students against academic dishonesty and guide them in avoiding academic integrity breaches (Kenyatta University, 2020). In this policy guide, Kenyatta University's academic dishonesty in the form of plagiarism is a fraud that involves stealing another person's work, making it literacy theft. Nevertheless, this policy guideline recognizes that scholars depend on each other's work to build themselves and others in knowledge acquisition (Kenyatta University, 2020). Hence, the guideline argues that plagiarism can be avoided by recognizing and acknowledging that various materials have been borrowed and used in the research by providing readers with information sources. Moreover, for an academic dishonesty policy guideline to be complete, it must outline the penalties associated with academic integrity breaches (Burke & Bristor, 2016). These penalties differ in different universities, with some disqualifying students from conducting further research and others referring students back to revise their work and remove plagiarism.

2.6 The Creation of Awareness by the Library on Academic Honesty to Support Postgraduate Research

Awareness denotes the perception or knowledge of a situation or fact. Therefore, awareness creation refers to educating people about an issue or topic to influence their attitudes, beliefs, and behaviors toward achieving a defined purpose (Radulovic & Uys, 2019). University libraries have a significant role in creating awareness among university students of academic honesty. Through its staff, the library is responsible for educating university students concerning academic dishonesty and its consequences on a person's academics (Radulovic & Uys, 2019). It can achieve this endeavor by using pamphlets, posters, and seminars, among other awareness-creation strategies.

Policies can only be effective if all stakeholders, including postgraduate students engaging in research, are aware of them (Stoesz & Eaton, 2020). These researchers presented a study demonstrating that over 50% of students in 17 countries understood the existence of policies and procedures for academic integrity breaches. The study used 25 European countries; seven countries had less than 50% of their students aware of academic integrity breaches policies and guidelines (Stoesz & Eaton, 2020). In one of the countries, no single student knew the existence of such policies in their country or university. The research demonstrated that information on implementing academic dishonesty policies was scarce in six Southeast European countries, and communication was significantly lacking. This observation showed that although academic integrity breaches policies and guidelines may exist, they could be ineffective for lacking meaningful communication with students about them (Stoesz & Eaton, 2020). This situation demonstrates the relevance of awareness creation among students on academic dishonesty policy guidelines and other academic integrity breach elements.

Khan et al. (2021) researched the subject of awareness concerning plagiarism and the effectiveness of library literacy programs in its mitigation. This study narrowed its scope to cover postgraduate resident doctors in Pakistan. It aimed to examine graduate resident students' awareness of plagiarism and evaluate the effectiveness of library literacy in plagiarism prevention. Khan et al. (2021) recognized that plagiarism awareness is vital for evading intellectual dishonesty, quality research assurance, and academic integrity among students. However, they posit that maintaining high academic integrity standards is a significant challenge for research organizations and higher learning institutions. The study gave a scenario of Pakistan, where resident doctors must present a dissertation to the College of Physicians and Surgeons. Their study revealed that the graduate resident doctors were aware of plagiarism; however,

they demonstrated variations in their definition of the concept. They believed plagiarism was unethical and showed the necessity of implementing anti-plagiarism policies. Nonetheless, their responses to the research demonstrated the inadequacy of knowledge of plagiarism penalties, specific anti-plagiarism policies, and citation styles. Also, the students were unaware of the library literacy program activities and their responsibilities in preventing plagiarism (Khan et al., 2021). Besides, the study showed a significant lack of collaboration among stakeholders, such as research project supervisors and library staff, to mitigate plagiarism.

The study by Khan et al. (2021) demonstrates the vitality of awareness creation. Indeed, universities could have anti-plagiarism policies and guidelines through their libraries, which is a significant effort toward mitigating academic dishonesty in postgraduate research (Gunton, 2022). However, students in the university could be ignorant of these policies, and they could be ignorant of what constitutes plagiarism and its penalties. Khan et al. (2021) suggest that librarians actively support learning, teaching, and research in universities, documenting them in plagiarism mitigation. US librarians have collaborated with faculty since the 1980s to teach information literacy skills to students, where plagiarism is a significant component of this training (Michalak et al., 2018). While this practice exists in the US, it is also important that librarians in other countries, including Kenyan universities, embrace the role of teaching plagiarism to research students to mitigate academic dishonesty. Khan et al. (2021) claim this is a strategy for academic honesty awareness. However, the study is limited because it only submits scholarly writing training as the only awareness creation strategy.

Complementing antiplagiarism policy and guidelines, research studies have reported mitigation strategies and suggested improvement areas. For instance, several studies recommend adopting plagiarism detection software like Turnitin for plagiarism

detection (White, 2021). Other studies point to the absence of enforcement of anti-plagiarism policies and guidelines even where they exist. Indeed, failing to enforce these policies renders them ineffective. Therefore, it only remains logical to examine the role of libraries in tackling plagiarism, mainly because the library is a vital stakeholder in postgraduate research (White, 2021). If anything, libraries are the academic hubs in universities, and they have a significant role in sensitizing students on various academic matters, including academic integrity. Selemani et al. (2018) established that university students commit academic dishonesty because of the lack of awareness of plagiarism as a concept and its elements. Their study suggested that universities, including Mzuzu University, should conduct awareness campaigns concerning the harmful effects of academic integrity breaches, targeting postgraduate students (Selemani et al., 2018).

Moreover, they suggested that introducing academic writing skills in universities is a form of awareness creation on academic dishonesty. Also, Selemani et al. (2018) claimed that raising awareness of the dangers of plagiarism and academic integrity breaches, taking disciplinary actions against postgraduate students committing academic dishonesty, and teaching students about integrity. The constituents of ethical academic writing are some practices a university can employ to mitigate academic dishonesty. Conducting these practices naturally creates academic honesty awareness among students. Therefore, their recommendation in various studies shows their validity in mitigating academic dishonesty, and implementing them in Kenyan universities can be instrumental in addressing academic dishonesty.

Mansoor and Ameen (2020) investigated academic integrity in South Asian research culture, focusing on Pakistani academic institutions. The research observed that plagiarism continues to become a challenge in the academic world, especially with the availability of the copy-and-paste option that allows students to copy work from the internet. This situation has made academic institutions stricter in addressing plagiarism. Mansoor and Ameen (2020) claim that universities in developed countries use antiplagiarism software to detect plagiarism in student papers. While this is true, it is an honor to developing countries like Kenya, whose universities also use antiplagiarism software like Turnitin to combat academic dishonesty, as demonstrated in the Kenyatta University plagiarism policy guideline document (Kenyatta University, 2020).

Nevertheless, Mansoor and Ameen (2020) assert that universities are engaging in substantial efforts to make researchers aware of antiplagiarism awareness and academic integrity policies. In the Pakistani university context, Mansoor and Ameen (2020) established that university libraries emphasize combating plagiarism using antiplagiarism software; however, they have significantly low efforts in awareness creation among students. Therefore, the study reports that university libraries must create significant awareness among students. Mansoor and Ameen (2020) argue that awareness creation on plagiarism and academic integrity breaches would guide students in not committing academic dishonesty. This awareness would enlighten students on academic misconduct they must avoid when writing academic papers.

Morrow (2022) also assessed academic integrity in Canadian librarianship. In this study, Morrow (2022) the academic process interwove information literacy and academic integrity. Academic librarians are well-positioned to promote an academic integrity culture among higher-level students. This study recommends building

academic integrity awareness in library websites to ensure users understand the concept. It also suggests that academic integrity information should be in information literacy instruction to ensure students learn them in their syllabus. The study by Morrow (2022) presents the University of Calgary that builds skill sets around research, integrity awareness, and critical thinking. This practice intends to show students what is expected of them in their higher studies on account of research. The study demonstrates that academic integrity awareness must start at lower academic levels to ensure that postgraduate students understand the concept when researching.

Many university libraries across the globe have applied various academic mitigation measures to combat academic dishonesty among postgraduate students, including using anti-plagiarism software, scholarly writing, academic integrity policies, and academic integrity awareness. Nevertheless, academic dishonesty continues to manifest among postgraduate students in their research. This demonstrates that there are gaps that exist in these mitigation measures. For instance, in the anti-plagiarism software, students have established ways to maneuver similarity checking by uploading images instead of draft files (Halgamuge, 2017). Also, students use this software to reduce plagiarism and continue to engage in other academic dishonesty practices.

Regarding scholarly training, libraries only use citations, article formats, and referencing styles, omitting aspects to avoid plagiarism. For instance, a library will train a student on proper citations to credit authors for their work but omit to warn the student against copying and pasting other people's work even if they credit them in their writing (Twum et al., 2022). Also, while universities have academic dishonesty policies, research by Stoesz and Eaton (2020) shows that many students are unaware of them. Therefore, this creates an opportunity for Kenyan universities to ensure these mitigation

measures are applied to their students through university libraries and apply them effectively to mitigate academic dishonesty.

2.7 Theoretical Framework

This study was guided by the theory of planned behavior (TPB).

2.7.1 The theory of planned behavior

Ajzen developed the theory of planned behavior in 1991. The theory of planned behavior argues that behaviors are addressed by intentions determined by subjective norms, attitudes, and perceived behavior control (Ajzen, 1985). It propagates that external factors should foster or prevent behaviors irrespective of intention based on how an individual can control behavior and how much perceived behavioral control accurately measures actual behavioral control (Bosnjak et al., 2020). Hence, in academic dishonesty, cheating among students results from the opportunity and the intention to cheat. As such, the theory posits that the efforts to address cheating must address situational and behavioral factors (Cronan et al., 2018).

This theory was relevant in understanding measures embarked on by teaching staff in curbing academic dishonesty. The manner in which measures were implemented might cause the dishonesty to continue; for example, the lecturers who reduce cheating opportunities among students during assessments by being more vigilant might only frustrate dishonest students, making them retain the intention to cheat when the opportunity avails itself. Proponents of planned behavior theory advocate for prevention measures; hence measures on dishonesty prevention, such as educating learners about the value of academic integrity, would suffice (Cronan et al., 2018). This aspect would be instrumental in the study, where it guided the variable on scholarly writing training by libraries and academic integrity awareness among postgraduate students.

The factors associated with dishonesty supported both sides of the planned behavior theory. On the opportunity side, allowing students to plagiarize other people's work by not checking plagiarism with antiplagiarism software significantly affects dishonesty. According to planned behavior theory, the action would encourage students to commit plagiarism and academic integrity misconduct because their supervisors are interested in checking plagiarism. This argument underpinned the understanding of the plagiarism software construct.

Indeed, engaging in academic dishonesty mitigation measures is not the only way to mitigate dishonesty in research among postgraduate students. On the intention side, the perception of an ethical obligation to avoid cheating negatively impacts cheating. Students could have the intention not to cheat on their papers. Intending not to cheat is a planned behavior, where a student plans to practice ethics and academic integrity by presenting their original work. This aligns significantly with the objective of creating awareness of the academic integrity of this study.

Nevertheless, the planned behavior theory presented some advantages to this study. It supported the objectives of scholarly training and academic honesty awareness creation among postgraduate students because, as (Cronan et al., 2018) and (Hendy and Montargot, 2019) claim, the theory's proponents emphasize educating people on the value of academic integrity. While this education could be in academic writing training, it also creates honesty awareness. The theory also supported the objective of academic policies. Training students on integrity requires establishing policies and guidelines that support academic integrity. Many universities have, for example, developed an antiplagiarism policy that covers the software issue. Consequently, using antiplagiarism software discourages academic dishonesty as a learned behavior. Also, its application

discourages acting based on situations, encouraging students to be intentional in positive behavior. While a student might use the theory from a negative approach to learning about cheating, its objective is to encourage positive behavior, hence the theory's relevance in this study.

The theory of planned behavior also supported postgraduate research as a construct. People cannot study or conduct research without a plan. A postgraduate course is a decision a person makes in their life based on several reasons, including career objectives of advancing one's education. Therefore, if a person decides to take a postgraduate course, they must also decide to abide by the rules and regulations that govern postgraduate education and postgraduate research. Besides, the violations of these regulations could also be explained using the theory of planned behavior because students plan to break them to cheat their way into completing their postgraduate courses.

Nevertheless, the planned behavior theory had some limitations in its application to the academic context because it was a theory that had primarily been applied in underpinning criminal behavior. If anything, many studies demonstrate that students do not categorize academic dishonesty as criminal behavior (Hendy & Montargot, 2019). Also, some faculties and student groups perceive the seriousness of academic dishonesty differently, granting leniency to cheating students. Other issues limiting aspects of the theory were cheating ignorance, learning cheating as a behavior, cheating as a coping strategy in stressful environments, and cheating as a game among some students.

The major contesting theories were the rational choice theory by Adam Smith and the situational ethics theory by Fletcher (1997). The situational ethics theory analyzes a

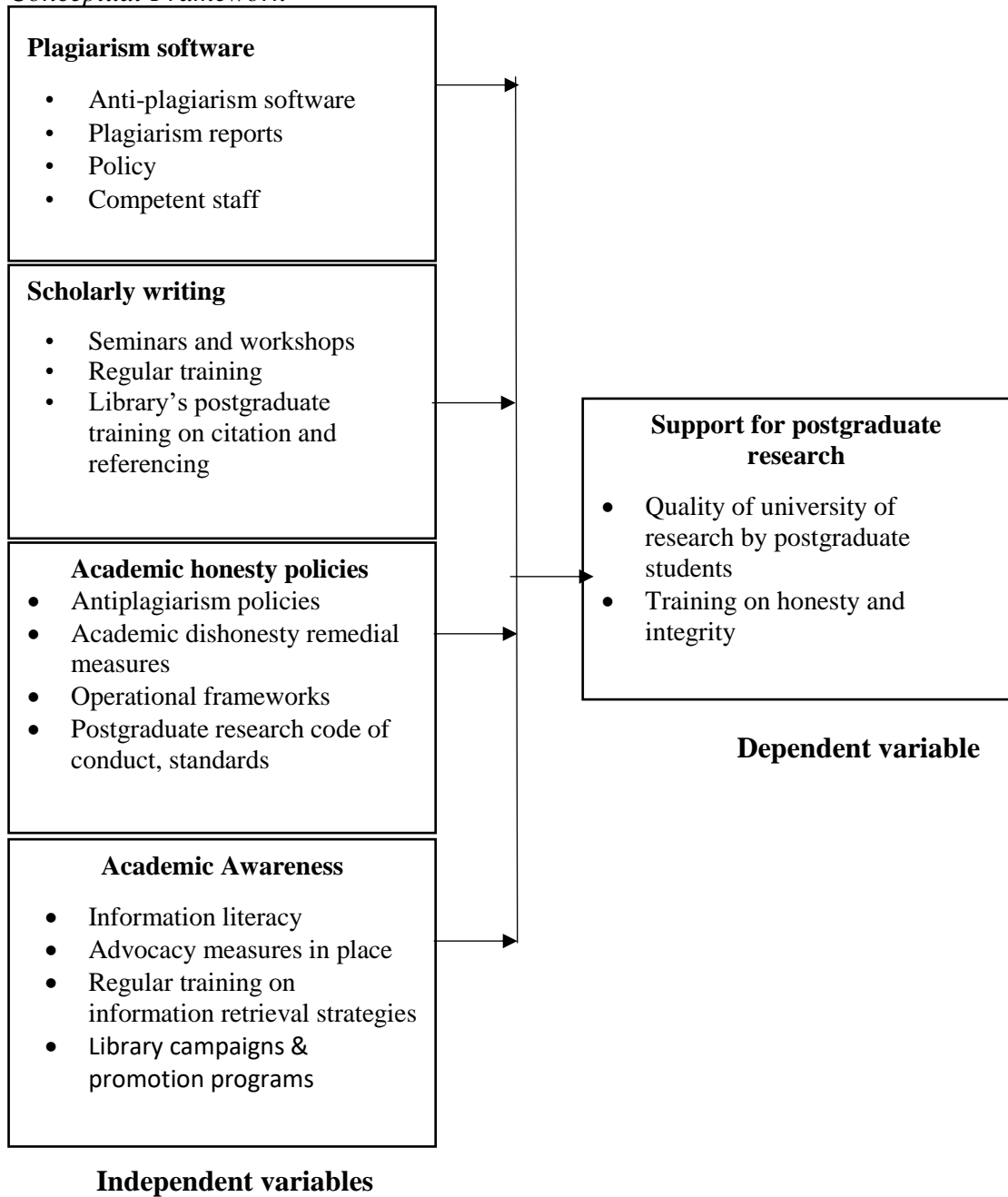
situation to assess the validity of unethical behavior (Chirikov et al., 2020). It puts a person in a dilemma in choosing their course of action. For instance, a situation where a student approaches a deadline to submit their paper. If they decide to do their original work, they will violate the deadline and fail. However, an opportunity is available to borrow their friend's paper, submit it, and pass. Here, the student becomes stranded on what to do, considering if they violate the deadline, they will fail, and submitting their friend's paper will be tantamount to an academic integrity breach (Chirikov et al., 2020). This approach could not apply in this study because academic integrity is not situational, as succeeding in academics requires student competency and compliance with academic regulations. Also, the objective of dishonesty policies and guidelines rules out the approach because they do not give room for a violation based on a situation. Affecting these variables would lead to the desired condition of academic integrity, ensuring that postgraduate studies present quality postgraduate research.

The rational choice theory approaches dishonesty as the consequence of decisions by rational agents (Fumagalli, 2020). An agent's eventual action comes after weighing all possible alternatives' benefits and detriments. Therefore, it follows a cost-benefit approach. This theory could not apply in this study because the disadvantages outweigh the advantages of academic dishonesty when considering cheating in academic cheating. The advantage of academic dishonesty could only be completing a postgraduate degree. However, if caught with a dishonesty case, the penalties are severe, including being put on academic probation, discontinuation, and cancellation of an already completed degree in case of late detection of dishonesty in its completion. Therefore, it becomes illogical to compare one benefit with many disadvantages. Hence, the rational choice theory could not apply.

2.8 Conceptual Framework

Figure 2. 1

Conceptual Framework



2.7.1 Description of Variables in the Conceptual Framework

The variables in this study included plagiarism software, scholarly writing training, academic honesty policies and guidelines, academic honesty awareness creation, and academic integrity. However, other variables affected the study indirectly, such as the university library, library staff, and library resources. If the library had resources and willing staff, including the librarian, it would address the academic dishonesty challenge and meet this responsibility the university bestows upon it. The mitigation measures acted as variables that work together to contribute to the desired outcome (quality postgraduate research), which also stands as a dependent variable in this study.

Figure 2.1 proposed that if the library has plagiarism software, conducts scholarly writing training, has an academic integrity policy, and creates awareness of academic honesty; it would ensure that postgraduate students present quality research. Acquisition of plagiarism software in the library could be influenced by library staff and university management's willingness to give operational and financial support to the students. We can measure the software influence on postgraduate research by checking the software usage data and the percentages on those documents run. Furthermore, scholarly writing training would be successful when trained library staff can guide postgraduate students and their willingness to attend training sessions. Academic honesty awareness creation could be measured by calculating the number of postgraduates who attend the literacy program sessions, visit the library website, and their navigation to help measure the progress on improving research know-how. Academic honesty policy and guidelines could be measured by assessing the acceptability of library faculty and students. It could also be measured by empirically comparing observations with a control group, for instance, in an experimental design.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The previous chapter presented the research's literature review. This chapter describes the study's methodology. It covers aspects like research design, population and sampling, research instruments, validity and reliability of research instruments, data creation procedures, and a description of how data was analyzed. It concludes by providing ethical issues which were considered in this study.

3.2 Location of the Study

The study took place in Kenya, which prides itself as a significant academic destination, especially among Africans in the East African region. The country has about twenty-nine public universities offering higher education (Study in Kenya, 2022). It also has many universities with Letters of Interim Authority, private universities, colleges, and Technical and Vocational Educational Training (TVET) institutes that offer tertiary-level courses. The study focused on private and public universities, Kenya Methodist University (KeMU) and the University of Embu (UoEM). KeMU and UoEM offer postgraduate courses and were appropriate for this study because they were areas where academic dishonesty had been reported. Also, they were convenient to the researcher regarding traveling distance and finding respondents.

Choosing these two universities was ideal because they represented the private and public sectors of university education. Furthermore, the two universities had very well-articulated academic integrity policies and postgraduate handbook manuals to guide students on their research and what is expected; therefore, good for the research to determine whether these measures facilitate in improving the quality of postgraduate

research. Also, the universities are geographically located close to each other, being in neighboring counties of Meru and Embu in Kenya; hence, data collection was more accessible. While KeMU offered insights into private practice, UoEM gave significant insights into public practice. Moreover, the two universities showed that public and private universities conform to the requirements of the Commission for University Education in Kenya on postgraduate research quality requirements.

3.3 Research Design

The study employed a survey research design to explore academic dishonesty and mitigation measures at select universities in Kenya. The survey research design collects primary research data by survey (Hansen & Tsheko, 2021). This research design uses surveys as a tool researchers apply to understand individuals' or groups' perspectives relative to a particular concept or interest topic. A survey contains structured questions designed to obtain specific information pieces. Survey research is undertaken for various reasons. However, many researchers apply it because of its common theme of easy accessibility and capacity to allow respondents to show their perspectives about a particular subject (Nardi, 2018). The survey research design was practical and suitable because it allowed the researcher to understand different populations under the research subject (Hansen & Tsheko, 2021).

In this case, it allowed the researcher to understand the different perspectives of librarians and postgraduate students on academic dishonesty and its mitigation measures. Surveys were also applied in the study to gauge general trends about the study topic within the study population before it conducted more research. Surveys would be instrumental in assessing how the universities under investigation implemented plagiarism software in their libraries and whether and how they conducted

scholarly writing training. Surveys would also give significant insights into whether these universities had academic integrity policies and if their students knew the policies and procedures. Lastly, they could reveal whether these universities created academic honesty awareness among postgraduate students. The design would be significant in addressing the research questions because it would isolate the research population to assist in identifying the metrics under academic dishonesty and its mitigation measures. Surveys would also be instrumental because they allow a significant analysis and comparison of the various responses by the respondents in their various groups. Other researchers in their studies had used the survey research design. For instance, it was used by Sovacool et al. (2018) in a study in the energy sector. Also, Flynn et al. (2018) used it in a supply chain management study. Garvey et al. (2019) also used the research design in education to investigate problems with gender and sex in higher education. All these studies yielded significant results for using this research design.

3.4 Target Population

Stratton (2021) defines the target population as the people the research intends to investigate. According to Sollmann et al. (2015), a target population designates a group of people or objects meeting the criteria of the particulars of a study. The target population in this study involved postgraduate students, directors of postgraduate studies, and librarians working in university libraries. Postgraduate students had to appear in the research population because they were the subjects undertaking and submitting research projects to universities. The study also investigated whether they understood academic dishonesty and whether they accessed plagiarism software from their university libraries. It also investigated whether they knew about any efforts in their universities to combat academic dishonesty through scholarly writing training,

awareness creation, and academic dishonesty policies and guidelines. Directors of postgraduate studies provided information on the number of research supervisors under each faculty and the number of students undergoing postgraduate research. They also offered information on the number of plagiarism cases reported by these supervisors. Lastly, librarians would inform the study on the academic dishonesty mitigation measures they use in their universities and how effective they are in mitigating academic dishonesty among postgraduate students.

Sampling is a statistical analysis used by researchers to select a research sample from a population. In this case, the research sample becomes a subset of the entire research population. A researcher's sampling methodology depends on the analysis types applied in the research (Mthuli et al., 2021). Studies sometimes do not use population sampling because their research population is minimal and too small to warrant a sample. Using a sample population in a study is beneficial because it improves a research's accuracy, reduces its cost, and hastens the speed of data creation (Gichohi, 2020). The sampling frame denotes the population members a researcher decides to investigate in their study.

This study's sample frame included the directors of postgraduate studies, postgraduate students undertaking research, and librarians from the Kenya Methodist University and the University of Embu (UoEM). The sample frame had 1008 individuals, including 972 postgraduate students, two directors of postgraduate studies, and 34 librarians. This sample frame was obtained from the two select universities in Kenya proposed for investigation in the proposed study. Table 3.1 shows the composition of the research population.

Table 3. 1*Target Population*

Participant Category	UoEM	KeMU
Postgraduate Students	468	504
Librarians	14	20
Directors of Postgraduate Studies	1	1
Total	483	525

3.5 Sampling Techniques

The proposed research used stratified random sampling and simple random sampling. This sampling method divides a population into smaller groups called strata. This sampling strategy was suitable because the research investigated a heterogeneous population. That is, the basics of the research population have discrepancies from the structures of the research criteria (Bhardwaj, 2019). Therefore, there would be differences. So, the strata formed would be consistent in that all the elements of a smaller group would have comparable features (Sollmann et al., 2015). The criteria for stratification would be the different categories of participants, including postgraduate students and librarians. The stratification criteria were necessary because participants had different opinions and experiences concerning the study subject, academic dishonesty, and its mitigation measures. Within each stratum, the study used simple random sampling to estimate statistical measures for every sub-population in the study. The librarians were selected through the stratified method, with the university librarian, heads of departments, and those dealing with policy and antiplagiarism software given more priority to participate in the study. The postgraduate students were grouped into different strata per their departments, mostly those handling theses and dissertations. Then simple random sampling was applied to select participants from each stratum that is for different programmes.

3.6 Sample size

The sample size is research terminology defining the number of participants in a study drawn from the target population. In determining the sample size for the postgraduate students and librarians the 10% - 30% sampling formula by Mugenda and Mugenda (2003) was adopted. Subsequently, 20% of the postgraduates (195), and 30% of the librarians (11) were considered adequate in this study. The research also involved director of postgraduate studies, that is, 1 from both KeMU and UoEM. As indicated in Table 3.1, a population of 1008 corresponds to a sample size of 208 respondents from whom the information was collected. This sample size was from the librarians, directors of postgraduate studies, and postgraduate students in KeMU and the University of Embu. This sample size was significant to the researcher since it gave a reliable representation of the population, which seemed to be an appropriate sample size for this study. Table 3.2 shows the study's sample size.

Table 3. 2

Study Sample Size

Participant Category	UoEM	KeMU	Total	Sample Size	
				UoEM	KeMU
Postgraduate Students	468	504	972	97	98
Library staffs	14	20	34	5	6
Directors of Postgraduate Studies	1	1	2	1	1
				103	105
Total	483	525	1008	208	

Each university contributed almost the same number of participants to ensure equality; therefore, for the postgraduate students, KeMU had 98 students distributed from various departments, and UoEM had 97 students. Also, both KeMU and UoEM had 1 participant to represent directors of postgraduate studies. Lastly, for the librarians, KeMU had 6 librarians, while UoEM had 5. Therefore, the total sum was up to 208

participants, and this would ensure a fair comparison between public and private universities when it comes to handling academic dishonesty mitigation measures by libraries for postgraduate students' research. KeMU University got the large portion because their population was a bit high compared to that of University of Embu.

3.7 Research Instrumentation

The nature of a study dictated the choice of data collection methods applied. The research approaches that a researcher anticipates using in their work also play a significant role in determining applicable data collection methods. The research design is another indispensable factor that affects a researcher's decision on data collection measures (Mkandawire, 2019). This research collected primary data from research respondents using interviews and questionnaires.

3.7.1 Interview

The interviews were applied to the directors of postgraduate studies and librarians. This data collection method was appropriate because the study only had two directors of postgraduate studies and 11 librarians, and it was possible to arrange a face-to-face interview with them. Interviews are applicable in collecting information about behavior, attributes, attitudes, knowledge, opinions, preferences, and feelings (Jones, 2020). They are effective because they help a researcher understand, explore, and explain the research population's opinions, experiences, behavior, and phenomenon (Husband, 2020). Therefore, they were highly applicable to this study because they would help the researcher to understand the research subject from the perspective of the research subjects (Jones, 2020). The research variables guided the interview questions, seeking to establish the subjects' opinions, perspectives, experiences, and attitudes toward academic dishonesty, academic integrity, and academic dishonesty mitigation measures covered in this study. The research variables such as postgraduate research at

universities, plagiarism detection software, scholarly training, academic dishonesty awareness creation, and academic dishonesty policies and guidelines were among the topics the interviews covered, with each topic composing a section in the interview guide. See Appendix III and IV for the interview guide used in this study.

3.7.2 Questionnaires

Questionnaires were used on postgraduate students in this study. This kind of questionnaire was appropriate for this research because it would make it ideal for the respondents to answer the questions and give precise responses. It also makes it appropriate for the researcher to analyze and compare the various responses from different research respondents. Using closed-ended questions in questionnaires would help take as many details from the respondents as possible (Bartram, 2019). This was appropriate for the study because the different population groups had different perspectives on academic dishonesty and mitigation measures. Questionnaires were appropriate in this study because they maintain respondents' confidentiality, save time and cost, and reduce research bias because the researcher does not judge responses from interacting with the respondent (Bartram, 2019). Therefore, this was an appropriate data collection tool for the study.

The questionnaire was closed-ended, where respondents would respond by choosing responses from a limited number of options provided in the questionnaire. The questionnaire used a Likert scale, where respondents choose responses that best fit their opinion regarding a given subject from a scale of 1 to 5. The questions in the questionnaire were based on research variables in the study, including postgraduate research at universities, plagiarism software in libraries, training in scholarly writing, library academic integrity policy guidelines, and library academic honesty awareness

creation in universities, with each variable making a section in the questionnaire. See Appendix II for the questionnaire guide.

3.8 Pre-testing of Research instrument

The researcher considered the usage of a pre-test since it helped reveal errors in the design and get to know the improper control of the environment before it was too late. Pre-testing assists in refining instruments before the final test; it avoids problems when it comes to the actual conduction of the study. Pre-tests are timed to avoid sensitization of respondents to independent variables by environmental factors (Gichohi, 2020). The sample size for pre-testing should be 5-10% of the sample (Singh & Masuku, 2014). Therefore, the researcher administered a pre-test from 5 librarians, one director of postgraduate studies, and 25 postgraduate students at Kirinyaga University. Kirinyaga University was a suitable pre-test location because the university offers postgraduate courses. It also uses anti-plagiarism software to monitor the academic honesty of its postgraduates' research and therefore had similar characteristics to KeMU and UoEM. Besides, Kirinyaga University is near the two universities; thus, it would be easier for the researcher to collect data from respondents for the pre-testing. The experience that was gained during the pre-test assisted the researcher in modifying, restructuring, and rearranging the questions in an appropriate way which helped in reconstructing tools for data collection for maximum extraction of data needed.

3.9 Validity of the Research Instruments

The Validity decides whether a correlation exists between the observations of a study (Sürücü & MASLAKÇI, 2020). An instrument's validity indicates that its questions present an accurate figure of what they are meant to measure, its accuracy, and meaningful inferences according to the study's results. The validity of data collection

implies that the results are an accurate representation of the phenomenon measured in the study. Validity also tests the conformity of the research design and methodology to the research (Sürücü & MASLAKÇI, 2020).

To test the validity of the data collection instrument in this study, the researcher presented the drafted questionnaire to the supervisor for scrutiny. The supervisor's comments and corrections on the questionnaire helped validate the instrument. Also, the researcher tested the validity by comparing the variance between two sets of results, and these were the pre-test study results and the actual results.

The tests in the study included construct and content validity. In construct validity, the study evaluated whether the measurement tool represented the research variables the research investigates. While it was challenging to measure academic dishonesty, this test made it possible to measure this aspect using the research construct. The researcher would measure the constructs' validity using valid face mechanisms, like consulting previously completed studies, subject experts, and sub-titling instruments. Under content validity, the study established whether the test represents all aspects of the construct. It also reviewed related literature linking academic integrity and academic dishonesty mitigation measures. Also, the study subdivided the research instruments into groups mirroring sentiments about the variables discussed in each section. Therefore, it tested whether all the aspects of the five research constructs were represented.

3.10 Reliability of Research Instruments

Reliability measures the extent to which a research instrument produces consistent results after several trials. A research instrument is said to be reliable when it measures variables accurately to obtain similar results over time (Sürücü & MASLAKÇI, 2020).

Cronbach's alpha was used to measure internal consistency. The Cronbach's alpha value of 0.7 or above is used as a cut-off mark to determine whether the instrument was reliable (Bonett & Wright, 2015). When evaluated, the instrument was adjusted properly before using it in the final data collection exercise.

3.11 Data collection procedure

In this study, the researcher got clearance from the university, that is, KeMU letter of introduction and the research permit from NACOSTI and the two letters were sent to the Registrar academics and research at UoEM and KeMU to seek permission of collecting data from staffs and students.

The researcher personally visited the research locations and the selected universities for study in Kenya and issued the interviews with respondents. The researcher arranged a face-to-face interview with the directors of postgraduate studies and librarians for respective universities. The interviews were conducted in an environment supporting privacy (their office), with only the researcher and the director or librarian in attendance. This was a measure to ensure the confidentiality of the information the librarian and director shared with the researcher. The researcher recorded the interview sessions with a recording device with effective security mechanisms that did not allow third parties to access its content. However, the interviewee was contacted in advance to consent to recording the interview. This measure ensured the privacy of the research and that the interview content was only used for research purposes.

For the questionnaire, the researcher visited the selected university and self-administered the questionnaire to postgraduate students to ensure effective data collection. The respondents did not need to fill in their personal details. Also, the students were left with the questionnaire for about one week to give them time to fill in

all the details without pressure and take the filled questionnaire to a specific person in the university as directed by the researcher. Also, the researcher tried to find selected representatives from different courses to facilitate issuing of questionnaires to their classmates online. Nevertheless, the students were requested and explained in advance the importance of participating in the research and that their responses were only used for research purposes.

3.12 Data analysis and presentation

The research collected primary data from respondents. The research conducted data analysis to establish meaning from the data. Data analysis is the systematic process of applying analytical and statistical techniques to illustrate, describe, and evaluate data (Githiora, 2015). Without data analysis, research data cannot portray any meaning (Bergin, 2018). The study had quantitative and qualitative data. The researcher projected to analyze quantitative data from postgraduate students using quantitative data analyses techniques. The filled questionnaires were downloaded as Microsoft excel files and imported to SPSS software where they were coded. After testing the data to ensure they were suitable and there were no outliers, it was followed by analyzing quantitative data using descriptive analysis. The specific descriptive statistics computed included percentages, means and standard deviation and findings presented using tables and text aided in the interpretation of data.

Thematic analysis analyzes the qualitative data of a study, and it entails searching across a data set to discover, analyze, and report recurrent patterns. While it describes data, it also interprets data in code selection and theme construction (Castleberry & Nolen, 2018). This technique was used to analyze interview information by establishing repeated patterns and constructing themes based on what the directors of postgraduate studies and librarians had in common in their responses. The findings were incorporated

with quantitative data to increase reliability and validity, resulting in a more precise conclusion.

3.12 Measurement of variables

Table 3.3 gives the outline of how each variable would be operationalized and measured.

Table 3. 3

Operationalization and measurement of variables

Research Objectives	Operational variables	Measurement
i. Assess how plagiarism software by libraries supports postgraduate research at selected universities in Kenya.	<ul style="list-style-type: none"> • Antiplagiarism software • Access • Policy • Threshold/plagiarism reports 	Descriptive statistics
ii. Examine the training in scholarly writing by libraries to support postgraduate research at selected universities in Kenya.	<ul style="list-style-type: none"> • Seminars and workshops • Regular training • Training on citation and referencing 	Descriptive statistics
iii. Determine how library academic integrity policy guidelines supports postgraduate research at selected universities in Kenya.	<ul style="list-style-type: none"> • Antiplagiarism policies • Academic dishonesty remedial measures • Operational frameworks • Postgraduate research code of conduct and standards 	Descriptive statistics
iv. Examine the awareness programs conducted by library on academic honesty to support postgraduate research at selected universities in Kenya.	<ul style="list-style-type: none"> • Information literacy • Library campaigns & promotion programs • Advocacy measures in place • Collaboration of stakeholders 	Descriptive statistics

3.13 Ethical considerations

In research, ethical considerations are the principles that guide the study's design and practices. In many cases, the ethical considerations to observe in research include anonymity, voluntary participation, confidentiality, informed consent, results from communication, and potential for harm (Hasan et al., 2021). The proposed study intended to observe all research ethics. The researcher obtained an introductory letter from Kenya Methodist University to show that the university had authorized their research.

Also, the researcher obtained a research permit from National Commission for Science Technology and Innovation (NACOSTI) before beginning the research. Moreover, the study ensured the confidentiality of the researchers by ensuring they responded to the questionnaires anonymously (no writing of names on a questionnaire). Also, the researcher informed the respondents that they had the right to decide not to respond, and their participation in the study was only voluntary. Also, the researcher ensured that the respondents were not harmed during the study. The study also recognized other researchers by referring to their studies and citing them accordingly in this study in APA referencing style. Data analysis was also done ethically, using only valid data collected from research participants. It did not use any fabricated data whatsoever.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Introduction

This chapter presents information from the participants' responses. The data was collected from two universities, the Kenya Methodist University (KeMU) and the University of Embu (UoEM), with the primary participants' category being postgraduate students, directors of postgraduate studies, and Librarians. The data was collected through interviews and questionnaires and analyzed using descriptive and thematic analysis.

This section contains the participants' background information and the integrated results (qualitative and descriptive results) on the use of plagiarism software in libraries, training in scholarly writing, application of the library academic integrity policies, and introduction of awareness programs by the libraries. Thus, the chapter has provided the findings on the study's overall purpose, as shared by respondents.

4.2 Reliability Statistics

Before conducting descriptive analysis, the internal consistency of the data was assessed using Cronbach's Alpha, which is a measure of reliability. The computation of Cronbach's Alpha was performed using SPSS statistical software, and the resulting values are presented in Table 4.1.

Table 4. 1

Reliability Statistics

Main variables of the study	Cronbach's Alpha
Plagiarism software (X1)	.897
Scholarly writing (X2)	.903
Academic honesty policies (X3)	.862
Academic awareness (X4)	.871
Support for postgraduate research (Y)	.899

The results reported a Cronbach's Alpha value of more than 0.8 for each variable of the study. Bonnett and Wright (2015) suggests that the Cronbach's alpha value of 0.7 or above is a cut-off mark to show the instrument is reliable. Therefore, the questionnaires were included in the subsequent analyses.

4.3 Response Rate

This study had three categories of respondents; librarians, postgraduate students, and Directors of Postgraduate Studies from KeMU and UoEM. The researcher used two primary tools in data collection; interviews and questionnaires. The researcher sampled a total of 13 participants to take part in the interview process, both librarians and directors of postgraduate studies. The target population comprised 195 postgraduate students, 11 library staff, and two directorates of postgraduate students, one from each institution.

Out of the sample size of 195 postgraduate students, the researcher collected data from 190 participants, translating to a response rate of 97.43%. Furthermore, eight librarians out of 11 participated in the interview translating to 72.7%, while the two directors of postgraduate studies (100%) were also interviewed. Mugenda and Mugenda (2003)

assert that a response rate of over 60% is suitable for facilitating the collection of reliable data for conclusions and recommendations. As such, having a response rate of 97.43%, 72.7%, and 100%, respectively, makes the results reliable in informing decisions regarding academic dishonesty in postgraduate research. According to Al Khalaf et al. (2022), using questionnaires in studies involving a sample of less than 300 participants will likely increase the response rate. As a result, the high response rate recorded in this study may be attributed to the sample size of 200 participants.

4.4 Demographic Information

In this study, the demographic characteristics of the participants were collected. The postgraduate students shared information about their age and level of study. Collecting the data ensured that the participants met the inclusion criteria such that they were over 18 years and were undertaking a postgraduate course. Additionally, the researcher collected information about the librarians and directors of postgraduate studies level of experience. The level of experience was based on the number of years that the librarians and directors had worked in the position, ensuring that they had sufficient experience about the issue of academic dishonesty in their institutions.

4.4.1 Age and Level of Study of the Postgraduate Students

Notably, 190 postgraduate students responded to the research questions, providing their feedback on academic dishonesty and approaches used to combat the challenge. The participants were first asked their level of study as highlighted in Table 4.2.

Table 4. 2*Postgraduate students' academic level*

Academics	Frequency	Valid Percent
Masters	150	78.9
Doctorate	40	21.1
Total	190	100.0

Of the 190 participants, 80 (42.1%) of them were male, with the remaining 110 (57.9%) being female. Also, about 150 (78.9%) of the participants were Masters Students, and 40 (21.1%) were Doctoral Students. Determining the participants' academic level was vital since it ensured that they all met the inclusion criteria. The dependent variable of the study was maintaining honesty and ethics in university higher education hence the need for ensuring data was collected from a well-informed population. In this case, having participants undertaking postgraduate studies ensured that they provide reliable data that can explain the dependent variable. All participants were adults a factor that enhances the quality of the results as it was a requirement to ensure that the participants can give consent to take part in the study.

4.3.2 Experience of the Librarians

In the case of the librarians, 50% had an experience of over ten years, 12.5% had a work experience of below five years, and the remaining 37.5% had worked for between 5 and 10 years. These results reflect librarians' in-depth knowledge of their department's various challenges and their potential to provide solutions. The results are shown in the Table 4.3.

Table 4. 3*Librarians' Level of experience*

Experience	Frequency	Valid Percent
Below 5 years	1	12.5
Between 5-10 years	3	37.5
Above 10 years	4	50.0
Total	8	100.0

4.3.3 Level of Experience of the Directors of Postgraduate Studies

The researcher collected data from two Directors of Postgraduate Studies, one from each target institution. The directors had a work experience of 8 and 10 years, respectively. As such, the directors had sufficient experience in the position, presenting them as reliable sources of data to inform decisions regarding improving the quality of postgraduate studies.

4.4 Background Information on Academic Dishonesty

The researcher analyzed the concept of academic dishonesty to determine the extent to which it affects postgraduate students and the various ways through which the different stakeholders interact with the issue. To achieve this, the researcher collected data on the extent to which the problem exists, the role of the main stakeholders, the different forms of academic dishonesty present in the learning institutions, and the most suitable solutions to the challenge. Thus, the section sought to get a deeper insight into the existence of the issue and the likelihood of the learning institutions introducing the most reliable solutions.

4.4.1 Background Results from the Postgraduate Students

The researcher collected postgraduate insights on academic dishonesty in the institutions. In this case, the primary area of focus was the role played by the different

stakeholders in addressing the challenge, determining to what extent they helped combat the issue. The information is presented in Table 4.4.

Table 4. 4

Role Played by the Different Stakeholders

Statements on postgraduate research at universities (N = 190)	VSE	SE	ME	LE	VLE	Mean	SD
The student	10 (5.3%)		30 (15.8%)	40 (21.1%)	110 (57.9%)	4.26	1.07
Thesis supervisors			10 (5.3%)	60 (31.6%)	120 (63.2%)	4.58	.592
University Librarian			20 (10.5)	50 (26.3)	120 (63.2%)	4.53	.680
Director of Postgraduate	10 (5.3%)		40 (21.1%)	30 (15.8%)	110 (57.9%)	4.26	.967
Academic Deans	10 (5.3%)	10 (5.3%)	70 (36.8%)	30 (15.8%)	70 (36.8%)	3.74	1.16
COD	10 (5.3%)	10 (5.3%)	50 (26.3%)	40 (21.1%)	80 (42.1%)	3.89	1.16

The students shared contrasting views regarding the role of different stakeholders in curbing academic dishonesty. Although the results show that all stakeholders have a role in improving the quality of postgraduate research, most students indicated that postgraduate supervisors play the most significant role. In this case, 120 (63.2%) believe that thesis supervisors play, to a very large extent, the role of ensuring the quality of postgraduate research. The student followed the rating, supported by 110 (57.9%) participants. The same number of students indicated that the Director of Postgraduate Studies has a role to a very large extent in ensuring quality postgraduate

studies. 80 (42.1%) identified the Department Chairperson as the most significant player in improving the quality of postgraduate research. In the case of the Dean of a School, 70 (36.8%) students stated that they play to a moderate extent, with the same number of students indicating that they play, to a very large extent, a pivotal role in ensuring quality postgraduate studies.

4.4.2 Results from the Librarians on Background Information on Academic Dishonesty

In this case, six librarians representing 75% of the participants, indicated that academic dishonesty is not rampant in their respective institutions, with the remaining 2 (25%) stating that there had been significant academic dishonesty in their institutions for the past five to ten years. The results from the librarians showed that although plagiarism and copying are the main forms of academic dishonesty, there are alternative ways used by university students. In this case, paraphrasing other people's work had the highest frequency, with 37.5% (3) of the sample indicating the practice to be common. Falsifying sources and paying other people to help perform academic tasks were ranked second, accounting for 25% (2) of the responses. 12.5% (1) of the participants indicate that some students use AI tools in practicing academic dishonesty. The results from the interview showed that technological advancements have played a huge role in promoting academic dishonesty in postgraduate studies.

The librarians identified modern technologies, especially AI tools, as instrumental in promoting academic dishonesty. However, the results indicated students' reliance on other approaches, including falsifying sources and paying others to help them perform academic tasks. According to Hollman et al. (2021), most learning institutions face significant challenges in curbing technology-driven academic dishonesty. Thus, the

results indicate that universities face challenges common in almost all higher learning institutions worldwide.

Although learning institutions introduced many mitigation measures to curb academic dishonesty, 50% (4) of participants stated that the main measure present in their libraries is the implementation of scholarly training. About 25% (2) of librarians said their measures in libraries included the requirement to use anti-plagiarism software in the proposal and full thesis. Additionally, the librarians presented the use of a committee to oversee student work by ensuring APA compliance and plagiarism and the reliance on academic integrity and plagiarism policy that guides integrity as being among the least common 12.5% (1) approaches used by the institutions to reduce academic dishonesty. Therefore, the results showed that some of the approaches used in the libraries are unreliable despite their adoption in the institutions. Notably, the choice of strategies among the librarians varied, with some proposing strategies considered unreliable by their peers.

The findings agreed with those recorded in previous studies, indicating that some approaches universities use to curb academic dishonesty have failed to address the issue. For instance, a study by Ali (2016) indicates that although institutions adopt strategies that promote academic integrity through actions such as copyright protection, they are yet to eliminate the challenges associated with academic dishonesty in the UK, Germany, and Australia. The high number of cases of academic dishonesty in the countries is thus due to similar factors as the case in the sample universities, hence the similarity in research findings.

Regarding artificial intelligence, 50% (4) of librarians indicated that their universities use anti-plagiarism software with integrated AI detection tools. Also, 37.5% (3)

identified training of students on paraphrasing peer-reviewed articles as being common in their institutions, with 12.5% (1) stating that they emphasize submitting original work and discourage students from cheating. The results showed the universities' commitment to curbing different approaches to practicing academic dishonesty.

To combat the use of AI in facilitating academic dishonesty, universities rely on modern technologies, especially tools that detect such instances. Bylieva et al. (2019) indicated that the challenges associated with academic dishonesty, especially in e-learning, have forced institutions to increase their preparedness to combat the challenge. The same applies to the sampled universities since the results reflect their increased preparedness to promote academic integrity by using methods that not only improve the student's knowledge and awareness about the issue but also prevent them from presenting dishonest works.

4.4.3 Discussion of Results of Background Information on Academic Dishonesty from the Director of Postgraduate Studies

The results, in this case, present academic dishonesty as a key challenge in postgraduate studies. As shown in Table 4.4, all stakeholders have a role to play, hence the need for introducing solutions that focus on promoting collaboration between the stakeholders. The findings reflect those presented by Mbom (2021) who recommended the introduction of a supervisory model that can be used by supervisors to ensure that postgraduate students adhere to the set policies and considerations when conducting the research process. The recommendation supports that shared by the librarians, stating the need for introducing a committee to oversee student work. In this case, the primary role of the committee will be to guide and ensure that students gain the required support throughout the study. The need for engaging the different stakeholders is to ensure that

all parties contribute positively to the process, minimizing the likelihood of students engaging in academic dishonesty. Similarly, Muraraneza et al. (2020) note that postgraduate researcher faces various challenges that affect the quality of education offered to students. To overcome the challenges, all stakeholders, especially the supervisors, should ensure that the students meet the set expectations for higher reliability of their research work.

4.5 Support for Postgraduate Research at Universities

This section presents results on the dependent variable on the use of libraries in the target universities to promote postgraduate research. The information is based on the participant's responses on how the library assists postgraduate students in doing their research.

4.5.1 Results from postgraduate students

The postgraduate students were asked to provide responses on the use of libraries to promote postgraduate research. They got to share their responses by responding to seven statements as presented in Table 4.5 by indicating the extent to which they agree with the statements.

Table 4. 5*Statements on Support for Postgraduate Research at the University*

Statements on postgraduate research at universities (N = 190)	VSE	SE	ME	LE	VLE	Mean	SD
a) There are measures that emphasize postgraduate research			10 (5.3%)	100 (52.6%)	80 (42.1%)	4.37	.583
b) There are measures to ensure quality postgraduate research.			10 (5.3%)	90 (47.4%)	90 (47.4%)	4.42	.592
c) The postgraduate research is facing quality challenges	30 (15.8%)	50 (26.3%)	60 (31.6%)	50 (26.3%)		2.68	1.031
d) There are academic dishonesty mitigation measures		10 (5.3%)	20 (10.5%)	110 (57.9%)	50 (26.3%)	4.05	.761
e) There is capacity to mitigate academic dishonesty among postgraduate students			30 (15.8%)	80 (42.8%)	80 (42.1%)	4.26	.716
f) Our library provides support to postgraduate students that are doing research.		10 (5.3%)	10 (5.3%)	80 (42.1%)	90 (47.4%)	4.32	.800
g) I have personally been assisted by the library when doing research		10 (5.3%)	30 (15.8%)	50 (26.3%)	100 (52.6%)	4.26	.911

Postgraduate students indicated through their responses that although postgraduate research is coupled with various challenges, their universities have introduced various measures to facilitate their success. On the existence of measures that emphasize postgraduate research, 100 (52.63%) students indicated that their institutions have largely emphasized postgraduate studies. 80 (42.1%) gave a rating of to a large extent, with the remaining 10 (5.3%) giving a rating of to a moderate extent. The measures to improve the quality of postgraduate students, to a large extent and a very large extent, scored ratings of 90 (47.4%) each, indicating the significant efforts introduced by the learning institutions. Additionally, 10 (5.3%) rated a moderate extent on the same statement.

The findings are similar to those in previous studies, indicating that universities continue introducing policies and practices promoting postgraduate research. According to Kwanya (2022), most universities in Kenya, including Kenyatta University and the University of Nairobi, present academic dishonesty as one of the leading challenges to postgraduate education. For this reason, the universities have introduced measures that enable students to overcome the challenge, thus promoting postgraduate research and education. As such, the introduction of measures that emphasize postgraduate research in KeMU and UoEM may be due to similar challenges identified by the study conducted by Kwanya (2022) resulting in similar policies in other Kenyan universities.

The above responses indicate that most students believe their respective universities have measures promoting postgraduate academic research. Ayllon et al. (2019) indicates that interaction between educators and students boosts learners' confidence in

learning. The same applies to the present study since it reflects students' confidence with the approaches used by the librarians.

Regarding the statement on the existence of quality challenges, the participants shared contrasting views, with 30 (15.85%) rating the issue as existing to a very small extent, 50 (26.3%) to a small extent, 60 (31.6%) to a moderate extent and the remaining 50 (26.3%) rating the issue as existing to a large extent. Similarly, the students presented contrasting responses regarding the presence of academic dishonesty mitigation measures, whereby 10 (5.3%) rated the practice as to a small extent, 20 (10.5%) as to a moderate extent, 110 (57.9%) as to a large extent and the remaining 50 (26.3%) rating the process as to a very large extent. All students believe that their universities can mitigate academic dishonesty, with 30 (15.8%) rating their institutions' capacity as to a moderate extent, 80 (42.3%) as to a large extent, and the remaining 80 indicating that their universities have to a very large extent the capacity to curb academic dishonesty.

The results indicated that students do not have a common view on quality challenges and mitigation measures to address academic dishonesty. Ghani (2020) indicates that postgraduate research faces various challenges that influence the measures introduced by institutions. As such, the difference in perception may be due to the different factors affecting the two universities. However, the perception that the universities could address the challenge proved that the students were dissatisfied with the reliability of the measures their institutions introduced to help them overcome the integrity challenges they faced in postgraduate research.

The same applies to the provision of support to postgraduate students by the libraries, in which case 10 (5.3%) of the participants rated the practice to a small extent, 10 (5.3%) to a moderate extent, 80 (42.1%) as to a large extent and 90 (47.4%) also a very

large extent. In this case, 10 (5.3%) postgraduate students indicated that the library had assisted them during research to the very least extent. The rating is contrary to that presented by most of the participants since 30 (15.8%) rated the support as to a moderate extent, 50 (26.3%) as to a large extent, and 100 (52.6%) indicating that they have experienced the support to a very large extent. The libraries introduced measures supporting students' postgraduate research based on the data. These results, agreed with Rafiq et al. (2021) indicate that emerging global challenges, such as the COVID-19 pandemic, have increased the need for learning institutions to support their students. Thus, the results reflected the increasing role of libraries in enabling students to meet academic requirements without practicing dishonesty.

Moreover, the students were also asked through the questionnaire forms to provide suggestions on ways to improve library support for postgraduate students. The process focused on various aspects, including training, the presence of academic integrity policies, designated librarians, and collaboration systems. The results are presented in Table 4.6.

Table 4. 6*Suggestions for Improving Library Support to Postgraduate Students*

N = 190		Frequency	Valid Percent
a)	Training	70	36.8
b)	Have an academic integrity policy with clear responsibility and support	40	21.1
c)	Designated librarian to help postgraduates	20	10.5
d)	Develop collaboration systems that link students	30	15.8
e)	Help access effective resources	30	15.8
Total		190	100.0

The participants also indicated the need for libraries to improve the level of support that they offer to postgraduate students to address the issue of academic dishonesty. Of the proposed suggestions, training was the most common approach, supported by 70 (36.8%). The academic integrity policy was supported by 40 (21.1%) postgraduate students, contrary to designating a librarian to help the postgraduate students, which 20 (10.5%) student's supported. 30 (15.8%) students supported the development of collaboration systems that link students, with a similar number indicating the need to increase access to effective resources.

The research also focused on the use of artificial-based applications in postgraduate education. The results in this section contain information shared through the questionnaires distributed to the students. The students were asked to share their knowledge of artificial intelligence applications by stating their use in postgraduate education. Chatgpt, Quilibot, Jenni.ai, Chat sonic Merlin, and Speedwrite.com are the applications. The results are shown in Table 4.7.

Table 4. 7*Artificial Intelligence-based Applications in Postgraduate Education*

Statements on postgraduate research universities (N = 190)	I have never used	Once	Once in a while	Often	Mean	Std. Dev
a) Chatgpt	110 (57.9%)	20 (10.5%)	60 (31.6%)		1.74	.911
b) Quilibot	90 (47.4%)	20 (10.5%)	60 (31.6%)	20 (10.5%)	2.05	1.102
c) Jenni.ai	180 (94.7%)		10 (5.3%)		1.11	.448
d) Chat sonic	160 (84.2%)	20 (10.5%)	10 (5.3%)		1.21	.522
e) Merlin	160 (84.2%)		30 (15.8%)		1.32	.731
f) Speedwrite.com	150 (78.9%)		40 (21.1%)		1.42	.818

On the use of artificial intelligence-based writing applications in postgraduate studies, Chatgpt and Quilibot were ranked as the most commonly used. However, most participants indicated never using technologies such as Jenni.ai, Chat Sonic, and Merlin. In this case, the most commonly used artificial intelligence-based writing application is Quilibot, whereby 60 (31.6%) participants indicated to be using it once in a while, and an additional 20 (10.5%) participants stated that they often use the technology. The second most commonly used writing application that the students rely on once in a while is Chatgpt, with 60 (31.6%) participants had used the technology, followed by Speedwrite.com, whereby 40 (21.1%) students indicated to have used the tool in their education. Merlin was the fourth most commonly used artificial intelligence application, which 30 (15.8%) participants used. Jenni and Chat Sonic were the least

commonly used applications, with 10 (5.3%) students indicating they had used either of the 2, as presented in Table 4.7. The difference in usage shows variability in choice amongst the students, with most participants unfamiliar with some writing-based applications.

Table 4.8 presented data on the different ways through which postgraduate students practice academic dishonesty.

Table 4. 8

Other Ways of Practicing Academic Dishonesty

Other ways to practice academic dishonesty (N= 188)	Frequency	Valid Percent
Falsification of Data	69	36.7
Paying others to do their work	65	34.6
Using AI tools to write	34	18.1
Misrepresentation of facts	20	10.6
Total	188	100.0

About, 69(36.7%) respondents indicated the falsification of data. The practice was followed by paying others to do their work, which was identified by 65(34.6%) participants, with the use of AI tools to write being ranked third, with a frequency of 34(18.1%) participants. Out of the 188 participants, 20(10.6%) indicated misrepresentation of facts as being one of the common ways postgraduate students use academic dishonesty. These results agree with studies by Holmes et al. (2020) and Akbari (2021) which indicate some other major academic dishonesty trends that have not been checked keenly, but they exist. Most postgraduate students are aware of them. For instance, faking data collection, using AI tools to do their research, use of contact

cheating, text manipulation, and spinning and misrepresenting facts of the work to fit their theory.

4.5.2 Results from the Librarians

Interview results from the librarians indicated that their libraries use varied techniques to support postgraduate students in their research. Of the eight respondents, 4 (50%) reported reliance on training to access physical and online resources. The subscription to a wide range of information sources, such as journals, was supported by 2 participants, representing 25% of the responses. Additionally, one librarian (12.5%) identified encouraging postgraduate students to publish in the right journals, with the remaining one librarian (12.5%) identifying the presence of guidance on citations and referencing compliance when writing proposals as being common in the library. Thus, a majority of the participants identified the use of training on accessing sources for research as being the most common approach used by universities to help their postgraduate students when conducting research.

4.5.3 Results from Directors of Postgraduate Studies on Postgraduate Research at the Universities

The results from the interview with the Directors of Postgraduate indicate that academic dishonesty is not widespread in their institutions, but there are a few cases. The directors consider the practice a significant challenge to postgraduate research since it makes it difficult to have dependable outcomes due to data falsification. Additionally, the practice limits the likelihood of generating new data and increases the misrepresentation of facts, negatively impacting postgraduate studies. To address the challenges, the participants recommend that universities introduce scholarly training and tighten requirements for graduation by including practices such as publications. Additionally,

universities should invest more in AI tools and increase opportunities for postgraduates to have mentors in their respective faculties.

The study also shows that the universities have introduced various efforts to support postgraduate research and combat academic dishonesty. The directors indicate that to ensure postgraduate research is supported, the universities include research methodology units in all curriculums, hold scholarly training, provide research projects to their students and hire competent supervisors with experience to facilitate the process. The universities mitigate academic dishonesty in postgraduate studies by creating awareness amongst the relevant stakeholders, sensitizations on the evils of cheating through scholarly training, and using antiplagiarism software.

On the different ways postgraduate students practice academic dishonesty, the directors indicated that the “*learners falsify data collection and hire people to write their work and later present as their own.*” Additionally, some postgraduate students use more advanced AI tools and cheat the system by going to journals that can accept their papers for publishing. However, the participants stated that their universities had introduced strategies to deal with the issue of artificial intelligence to curb academic dishonesty. The primary strategies introduced are promoting awareness of AI and training and analyzing the subject to identify ways AI can benefit postgraduate research. For instance, one participant indicated that “*our university trains the students on how to access resources available in both physical and online libraries.*” Through such actions, the universities improved the quality of education that the students’ access and empowered them, making it easy for them to succeed in postgraduate research.

4.5.4 Discussing Results from Postgraduate Students, Librarians and Directors of Postgraduate Studies on Postgraduate Research at the Universities

The results present postgraduate research in the sampled universities as facing significant academic integrity and dishonesty challenges. The students use a wide range of software and technologies that enable them to practice academic dishonesty and present works that do not meet the set threshold. As such, the students fail to achieve the intended purpose of the curriculum due to the presentation of falsified findings and plagiarized works. Indeed, these findings agree with those submitted by, Cekiso et al. (2019) on the challenges postgraduate students face in their studies. As established in this research findings, academic dishonesty corresponds to the challenge that Cekiso et al. (2019) raised on the lack of ethics that leads students to cheat in their academic work.

The results also support the findings of Bonaccorsi and Secondi (2017) indicating that completing major research projects is vital in postgraduate research education since it enables the learner to develop knowledge and experience in their study discipline. However, the authors require the process to be supervised to ensure its success. Ochilova (2020) reiterates this by stating that collaboration between university professors, researchers, and lecturers provides a favorable environment for students to participate in active innovations and research work. Besides, Cekiso et al. (2019) and Mbom (2021) highlighted the challenges posed to postgraduate students by supervisors and failures in the school system, like communication breakdowns. While students could do their best and follow all research regulations as stipulated by their universities, aspects of the university could hinder their research projects. Thus, the finding of the studies on the need to introduce reliable structure to combat academic dishonesty in

postgraduate research seeks to equip the learners with knowledge and skills that will improve their productivity in their respective disciplines and careers.

The call by librarians to increase training postgraduate students on academic dishonesty is according to the Theory of Planned Behavior. Studies on the theory posit that students do not consider academic behavior a crime (Hendy & Montargot, 2019). Thus, the librarians and other stakeholders need to train the students, ensuring that they become aware of criminal behavior and its threats to the quality of education. To ensure this is achieved, higher learning institutions must introduce mitigation measures to discourage students from practicing academic dishonesty and encourage prioritization of academic integrity in research work.

4.6 Plagiarism Software in Libraries for Supporting Postgraduate Research

Anti-plagiarism software was one of the independent variables used in the study. To understand the use of the technologies in the universities, this section will provide results on the different software that the institutions use, challenges involved in their usage, their effectiveness in combating academic dishonesty, and potential solutions to improve their reliability. The results include quantitative data collected using Likert scales and the opinions of the target participants regarding the use of the software.

4.6.1 Results from Postgraduate Students on Anti-Plagiarism Software in Libraries

Opinions of students regarding the use of anti-plagiarism software were also sought. The students indicated the level of effectiveness of the use of anti-plagiarism software in their university. A summary of their responses is presented in Table 4.9.

Table 4. 9*Effectiveness of the Use of Anti-plagiarism Software*

N = 190	Frequency	Valid Percent
a) It is effective	100	52.6
b) Fairly good but can be improved	70	36.8
c) Sensitize students on the dangers of cheating	20	10.5
Total	190	100.0

Postgraduate students consider using anti-plagiarism software in universities as highly effective in improving the quality of postgraduate research. 100 (52.6%) participants indicated that the practice is highly effective, contrary to 70 (36.8%) who rated anti-plagiarism software as fairly good but can be improved. Similarly, 20 (10.5%) of the sample indicated the need to sensitize students on the dangers of cheating as the most appropriate approach to improving postgraduate research. As such, the qualitative data from the postgraduate students show that although the use of anti-plagiarism software helps improve the quality of postgraduate research, it still needs an introduction of more structures to support its functioning.

The findings are similar to those by Akbari (2021) who found that although anti-plagiarism is commonly used to help reduce plagiarism cases, students rely on techniques such as text spinning and manipulation to practice academic dishonesty. In so doing, anti-plagiarism software approves research work copied from other sources without flagging it as plagiarized. The research process also involved collecting student responses by focusing on how much the libraries use anti-plagiarism software. The students were presented with various sets of statements and were required to rate them on the scale of their accuracy. The information is presented in Table 4.10.

Table 4. 10*Statements on the use of Anti-plagiarism Software in Libraries*

Statement on plagiarism software in libraries (N=190)	VSE	SE	ME	LE	VLE	Mean	SD
The antiplagiarism software is used to mitigate academic dishonesty at our university		10 (5.3%)	10 (5.3%)	40 (21.1%)	130 (68.4%)	4.52	.822
Our library has made it easy to access the anti-plagiarism software		10 (5.3%)	10 (5.3%)	70 (36.8%)	100 (52.6%)	4.37	.811
The library staff usually check the integrity of postgraduate research done by students	10 (5.3%)	20 (10.5%)	10 (5.3%)	70 (36.8%)	80 (42.1%)	4.00	1.173
My university has put up anti-plagiarism software to be used by postgraduate students		10 (5.3%)	10 (5.3%)	70 (36.8%)	100 (52.6%)	4.37	.812
Our library teaches/ trains postgraduate students how to use anti-plagiarism software	20 (10.5%)	10 (5.3%)	10 (5.3%)	100 (52.6%)	50 (26.3%)	3.79	1.199
Postgraduate students can maintain academic integrity without using antiplagiarism software	50 (26.3%)	10 (5.3%)	40 (21.1%)	50 (26.3%)	40 (21.1%)	3.11	1.487

Regarding using anti-plagiarism technology to improve academic integrity, the results show that most postgraduate students 130 (68.4%) consider the software to contribute to a very large extent in mitigating academic dishonesty. In this case, only 10 (5.3%) of the participants considered rated its contribution to a small extent, indicating the software's pivotal role in curbing academic dishonesty in universities. Similarly, 100 (52.6%) participants agreed to the statement that their libraries have made it easier for them to access anti-plagiarism software, with an additional 70 (36.8%) rating the process as to a large extent.

The findings also show that library staff usually checks the integrity of postgraduate research, with only 30 participants indicating contrary sentiments. In this case, 10 (5.3%) of the participants rated the process to a very small extent, with the remaining 20 (10.5%) agreeing that library staff checks their work to a small extent. The results showed that antiplagiarism software plays a vital role in enabling universities to overcome challenges associated with academic dishonesty. Additionally, implementing the varied approaches introduced by the universities, especially by assigning supervisors, improves the students' skills (Ghani, 2020). As such, requiring librarians to actively check students' work is significant in promoting academic integrity.

The universities have effectively provided opportunities for postgraduate students to use anti-plagiarism software during their studies and research. According to 100 (52.6%) of the participants, the university has largely provided anti-plagiarism software to university students. The results also show that 70 (36.8%) participants consider the university to have provided, to a large extent, access to anti-plagiarism software, with the remaining 20 (10.6%) rating the contribution as a small percent (5.3%) and a moderate extent (5.3%). The same case applies to training such that the participants

believe their universities have provided reliable training to postgraduate students and teachers on using anti-plagiarism software. Besides, 100 (52.6%) indicate that the university has to a large extent, trained the teachers and students, with 50 (26.3%) rating the schools as having trained to a very large extent their teachers and students on using anti-plagiarism software. However, the participants provided contrasting responses regarding postgraduate students' ability to maintain academic integrity without using anti-plagiarism software. 50 (26.3%) rated their ability as to a very small extent, 10 (5.3%) to a small extent, 40 (21.1%) to a moderate extent, 50 (26.3%) to a large extent, and 40 (21.1%) to a very large extent.

The results present anti-plagiarism software as one of the most reliable ways to improve students' ability to achieve academic integrity. Although different factors affect the stakeholders' ability to use and maximize the benefits of the technology, they still rely on it to ensure that they reduce the extent to which academic dishonesty affects the quality of education in their respective institutions. Similar findings were established in studies by Moten (2014), Akbari (2021) and Kwanya (2022) on the subject of academic dishonesty in higher learning institutions. The studies established that anti-plagiarism software is among the top strategies learning institutions use to reduce academic dishonesty, ensuring students present their work in scholarly writing and research. Through technology, educators and library staff members reduce the likelihood of students plagiarizing other people's work and presenting it as their own.

The postgraduate students were asked to share suggestions on improving the use of anti-plagiarism software in libraries. The findings were presented in Table 4.11.

Table 4. 11*Suggestions to Improve the Use of Anti-Plagiarism Software in Libraries*

N = 190	Frequency	Valid Percent
a. Training the students on academic integrity	100	52.6
b. Creating awareness of antiplagiarism software	40	21.1
c. Synthesis students on the use of authentic sources and how to paraphrase	30	15.8
d. Create your own postgraduate password for Turnitin	20	10.5
e. Total	190	100.0

Based on Table 4.11 results, postgraduate students support the use of varied approaches to improve the use of anti-plagiarism software to mitigate academic dishonesty. About 100 (52.6%) participants support training students on academic integrity, with 40 (21.1%) supporting the creation of awareness on anti-plagiarism use. Also, 30 (15.8%) participants indicated the need to synthesize students on the use of authentic sources and paraphrasing, contrary to 20 (10.5%) of the participants who believe creating their postgraduate passwords for Turnitin as being the most effective way of improving the use of anti-plagiarism software. All the results are student-centric, positioning postgraduate students as the primary target of strategies that can help address the challenge. Although the technologies are used by other stakeholders, including lecturers and librarians, targeting the students is vital in enhancing their work's integrity.

The finding reflects those of Wang and Qin (2022) who found that various interests drive students' education and research, hence the different approaches they use in academic writing. For this reason, libraries are responsible for ensuring that their programs and strategies focus on the students, enabling them to achieve the set goals

and objectives while considering their varied interests in education. Although the approaches, including the use of different technologies, seek to ensure that the students do not commit academic dishonesty, they must address their interests, thus prioritizing the student's academic needs above those of other stakeholders.

4.6.2 Results from Librarians on Plagiarism Software in Libraries

The study used an interview to collect data from librarians on using plagiarism software in libraries. Although various technologies help determine the level of plagiarism in reports, the results from the librarians indicate that Turnitin is the only anti-plagiarism software used in libraries. However, the use of technology faces significant challenges, limiting the students' success in meeting the set requirements. The results show that most students 4 (50%) complain about the higher threshold level of expectation when using the technology, with 20% of the participants stating that they have not experienced any complaints from the students. However, 1 (12.5%) of the sample identified highlighting common words even when they are not copied as a common complaint among the students, hence a similar rating to the high fees that the students have to incur in accessing the services.

4.6.3 Results from Directors of Postgraduate Studies on Anti-Plagiarism Software in Libraries for Supporting Postgraduate Studies

The Directors of Postgraduate Studies presented the use of anti-plagiarism software as being essential in promoting postgraduate studies. Their responses to the interview questions show that their respective institutions provide their students with easy ways to access the software; one director confidently said, *"I would rate the process as 5 out of 5."* To achieve this, the institutions provide their students links that they can use on their library websites and library email to send their work. For instance, one of the directors stated that *"students use the link in library website and library email to send*

the document.” Additionally, students have readily available supervisors to help them overcome potential challenges they may face when using the software. To ensure the integrity of postgraduate research, one cannot submit the document for examination until their work has met the required threshold.

The results indicate that anti-plagiarism software helps mitigate academic dishonesty, especially due to its impact on students’ efforts. In this case, the participants indicate that using the software has motivated students to work harder, ensuring their work meets the set threshold. However, the participants indicate that the anti-plagiarism software still faces various challenges that limit its ability to address the target issues. According to the Directors of Postgraduate Studies, “*some students use paraphrasing tools, increasing academic dishonesty in their institutions.*” To improve the functioning of anti-plagiarism software to enhance academic honesty, the directors recommend preparing students not to cheat. In this case, the institution should reduce reliance on technology, increasing students’ knowledge and skills by prioritizing academic integrity in their work. According to one Director, “*the real solution is preparing students not to cheat but not having a software.*” The statement showed that training students are more reliable in achieving the desired goals.

Additionally, the university should increase educational training, thus minimizing the likelihood of the students using the existing technologies to facilitate academic dishonesty. However, one of the directors indicated that there is nothing to be done now, with the only issue being AI tools. The increasing accessibility and availability of AI technologies supporting academic dishonesty make it difficult for universities to eradicate the issue and ensure that students prioritize integrity in postgraduate research.

The results from the Directors of Postgraduate Studies support those from the librarians and the postgraduate students. In this case, the results agree that the universities have introduced various measures that increase students' access to anti-plagiarism software, enabling them to present high-quality research. However, library support is yet to fully eliminate the issue of academic dishonesty due to factors such as the availability of AI tools for paraphrasing.

4.6.4 Discussion of Results from Postgraduate Students, Librarians, and Directors of Postgraduate Studies on Anti-Plagiarism Software in Libraries for Supporting Postgraduate Research

The results indicate that anti-plagiarism software is commonly used in universities due to its effectiveness in identifying academic integrity cases. Through the software, researchers and supervisors identify work that has been copied or has high similarity with those presented by other authors, hence the need for changing them for quality research (Von Isenburg et al., 2019). Halgamuge (2017) asserted that using antiplagiarism software in student papers, mainly Turnitin was highly effective in reducing similarity levels in their work. Even though they register high similarity at the beginning, the consistent use of this technology reduces plagiarism in student papers significantly, leading to increased academic integrity.

The different types of software used by the students to practice academic dishonesty present a significant issue to postgraduate research, as it increases the likelihood of the students plagiarizing other people's works and presenting them as theirs. The different types of plagiarism make it easy for students to access information needed for their study, thus making it a significant challenge to the education sector (Olovia-Dumitrina et al., 2019). By having different options through which the students can access

information and engage in academic malpractice, they end up practicing different types of plagiarism, some of which are difficult to identify and mitigate. As Early et al. (2021) submit, the internet provides important information online, and students easily access it, making plagiarism an educational culture. While students are supposed to use this information for reference in their research, they use internet tools to modify the work, affecting research integrity. Thus, for this reason, the participants recommend an improvement to ensure the effective use of anti-plagiarism software by their respective university libraries.

The study presents training on academic integrity coupled with increased awareness of the use of anti-plagiarism as being significant in improving the use of the software in libraries. The result is due to students' pivotal role in using anti-plagiarism software, making them the primary target of approaches that target plagiarism in postgraduate research. The finding is supported by Pai and Parmar (2015) who encourage institutions to apply measures that curb the threat, especially by creating awareness among the users to apply anti-plagiarism measures. The authors support the use of awareness that increase the use of anti-plagiarism software, presenting it as being highly efficient in addressing the challenge. Additionally, the rational choice theory presents dishonesty as an outcome of decisions made by rational people (Fumagalli, 2020). By increasing training and awareness, students will have readily available information on the dangers and consequences of academic dishonesty, thus discouraging them from making decisions that support dishonesty in their education.

Besides, Fatemi and Saito (2020) established that some plagiarism by some students is not deliberate. Furthermore, Von et al. (2019) claimed that students make mistakes in their original papers, like poor organization of work, lack of skills, and knowledge of

scholarly writing, leading to unintentional plagiarism. As such, the suggestion by the research participants to increase awareness amongst students and train students on integrity is to discourage them from relying on the anti-plagiarism software, decreasing their ability to undertake credible research.

The results showed that Turnitin was university libraries most commonly used anti-plagiarism software. The results were similar to those of Nasanaikar and Hangaragi (2017) who found Turnitin to be the most popular after analyzing anti-plagiarism software use among university faculties in over 51 countries. However, the results showed that the technology is still limited in eradicating plagiarism in postgraduate education. As shown by Aswathi (2019) there are various types of plagiarism, including disguised translations, self-plagiarism, structural plagiarism, paste collections, and pawn sacrifice. For this reason, the challenges identified in the results facing the application of Turnitin may be attributed to the varied types of plagiarism that the student can practice and the existence of different options they can use to facilitate the practice.

Additionally, Early et al. (2021) establish that easy access to electronic information by students has promoted plagiarism culture significantly, a factor that has undermined academic integrity. For this reason, addressing the challenge of plagiarism cannot be addressed only by introducing anti-plagiarism software but also by incorporating other approaches, such as creating student awareness.

The research also showed that university libraries increase students' access to anti-plagiarism software like Turnitin. The practice is to encourage the students to use the technology and ultimately gain knowledge and skills to reduce plagiarism in postgraduate research. Rop (2017) presents similar findings by stating that most

universities in Kenya, including the University of Nairobi and Kenyatta University, have subscribed to Turnitin for plagiarism detection. The subscription makes it easier for learners to access and use in their studies and research work. By using the technologies, students are highly likely to master the practice of plagiarism reduction, thus submitting quality work during postgraduate studies (Singh, 2016). Thus, the widespread use of anti-plagiarism software evident in the sampled institutions is due to the software's positive impact on the users and their research.

4.7 Training in Scholarly Writing in Libraries in Supporting Postgraduate Research

The study sought to determine the use of training approaches by university libraries to promote quality postgraduate research. This section will provide findings on data regarding training in scholarly writing, as shared by the librarians, the postgraduate students, and directors of postgraduate studies. The results focus on scholarly writing training as one of the key elements in enhancing academic integrity.

4.7.1 Results from Postgraduate Students on Training in Scholarly Writing in Libraries in Supporting Postgraduate Research

The postgraduate students were asked to identify training approaches used by their universities to facilitate postgraduate research. The findings are presented in Table 4.12.

Table 4. 12*Execution of training on scholarly writing*

N = 190	Frequency	Valid Percent
a. Holding practical training regularly	90	47.4
b. By providing reliable sources, e.g., journals	70	36.8
c. Orientation is done every semester for new students	30	15.8
Total	190	100.0

The study shows universities have various ways to train postgraduate students in research. Most postgraduate students consider holding practical training regularly 90 (47.4%) as the most common approach, followed by the provision of reliable sources such as research journals 70 (36.8%). Additionally, some students 30 (15.8%) indicated that their universities provide orientation every semester for new students. The findings are similar to those shared by the librarians, presenting practical training as the most common method and orientation as the least common method used. Based on the findings, students know their respective institutions' various actions to train them in scholarly writing. These results agree with research by Ghani (2020) which indicates that the use of training approaches to promote scholarly writing has significantly increased over the past ten years due to the growing demand for the strategies. As such, the student's awareness of the methods may be attributed to the growing focus on the area and the use of the existing approaches. Additionally, the students know the different impacts each approach has on their academic writing ability.

Students were also provided with various statements on the training processes undertaken by their respective libraries. The participants were requested to indicate the extent to which the actions reflect those undertaken by their libraries. The primary aspects examined in this case include training, its effectiveness, and awareness of

training resources, one-on-one training, group training, and consideration of recent trends in the training process. The findings are shown in Table 4.13.

Table 4. 13*Statements on Library's Scholarly Writing Training*

Statement on scholarly writing training in libraries (N = 190)	VSE	SE	ME	LE	VLE	Mean	SD
Postgraduate students are trained in academic and scholarly writing		10 (5.3%)	50 (26.3%)	80 (42.1%)	50 (26.3%)	1.68	.731
Scholarly training offered by the university library is effective in mitigating academic dishonesty		10 (5.3%)	40 (21.1%)	80 (42.1%)	60 (31.6%)	3.89	.854
Postgraduate students are trained on recent trends in academic and scholarly training		10 (5.6%)	40 (22.2%)	90 (50%)	40 (22.2%)	4.00	.861
Our library holds practical scholarly writing training regularly		10 (5.3%)	70 (38.9%)	30 (16.7%)	70 (38.9%)	3.89	.811
Postgraduate students are trained in groups of their respective academic programs			60 (33.3%)	80 (44.4%)	40 (21.2%)	3.89	.997
Postgraduate students are also trained one-on-one upon request on academic writing			60 (33.3%)	40 (21.1%)	80 (44.4%)	3.89	.739
Our postgraduate students are aware of scholarly writing resources in the library			30 (16.7%)	70 (38.9%)	80 (44.4%)	4.11	.877

The research also indicates that most postgraduate students 80 (42.1%) are trained in academic writing. Similarly, the results show that most students 80 (42.1%) consider scholarly training provided at their university as effective in addressing academic

dishonesty. On training postgraduate students about recent trends, 90 (50%) of the participants rated the process as effective to a large extent, with an additional 40 (22.2%) rating the practice as effective to a very large extent. The rating is different from that of the library holding practical scholarly writing training, whereby most participants 70 (38.9%) rated the practice's regularity as being to a moderate extent. However, an additional 70 (38.9%) rated the practice to a large extent. The results meant that learning institutions had invested heavily in training postgraduate students on scholarly writing due to the approach's effectiveness in improving their educational outcomes. This finding agrees with Manzoor et al. (2019) research which concluded that the practice is commonly applied to increase people's job performance. Therefore, by regularly holding practical scholarly training, the universities ensure that the learners gain skills they can apply in their education and careers.

All the participants affirmed that postgraduate students are trained in groups of their respective programs, with the responses ranging from moderate to a very large extent. The same applies to one-on-one training on academic writing, such that 80 (44.4%) of the postgraduate students indicated that the practice is common to a very large extent. Additionally, 70 (38.9%) and 80 (44.4%) of the participants from the postgraduate students' category indicated that learners are aware of scholarly writing resources in the library to a large extent and a very large extent, respectively. According to the results, the sample universities use similar training approaches, hence the same responses shared by the participants. These results agree with Stephens et al. (2021) study that argued that readily available training courses make it easy for institutions to access information on promoting students' academic integrity and incorporate them into their functioning. The choice of similar approaches indicates their effectiveness in enabling

the students to gain the required skills and overcome challenges associated with postgraduate scholarly writing.

Students were also requested to indicate the most effective suggestions for improving training in scholarly writing. The findings are shown in Table 4.14.

Table 4. 14

Suggestions for Improving Training in Scholarly Writing

N = 190	Frequency	Valid Percent
Regular training and sharing of materials	70	36.8
Awareness and schedule training	20	10.5
Scholarly training incorporated into the curriculum as a common unit	60	31.6
Incorporate AI tools in training to synthesize students on them	20	10.5
Engage different experienced people to conduct training	20	10.5
Total	190	100.0

Although the students indicated the existence of training programs in their respective universities focusing on scholarly writing, there is a need for improvement to enhance the impacts of scholarly writing training on postgraduate students. The results presented increasing regular training and sharing materials 70 (36.8%) as the most common suggestion, followed by incorporating scholarly writing training as a common unit 60 (31.6%). The students also suggested introducing awareness and scheduling training 20 (10.5%), incorporating AI tools in the training programs to synthesize the learners 20 (10.5%), and engaging different experienced people to conduct training 20 (10.5%). By introducing the practices, the universities are highly likely to experience an improvement in postgraduate students' scholarly writing, improving their scholarly writing and, ultimately, academic performance.

4.7.2 Results from Librarians on Training in Scholarly Writing in Libraries in Facilitating Postgraduate Research

Data collected from the librarians through interviews showed that their institutions had introduced various ways through which they train their postgraduate students in scholarly writing. In this case, 4 (50%) of the participants indicated the presence of regular workshops and seminars through which postgraduate students are informed on the subject areas. 3 (37.5%) participants indicated that they partner with the BPS to have sections allocated for postgraduates to undergo training. 1 (12.5%) participant identified orientation as one of the primary approaches, involving introducing the students to research upon admission. In so doing, the schools ensure their students are well-equipped with the knowledge and skills to facilitate their scholarly work.

The results also presented scholarly writing training as a broad subject involving many topics and subtopics. 3 (37.5%) participants identified accessing electronic sources as one of the areas addressed in the training process, 2 (25%) identified training on intext citation and referencing according to the university guidelines as being included, 2 (25%) indicated the inclusion of paraphrasing and summarizing, with 1 (12.5%) identifying information retrieval skills as being part of academic writing training offered. However, the participants indicated the need to amend the training module to ensure maximum positive impacts on the postgraduate students. The primary suggestions presented by the participants include increasing the number of mandatory trainings for all students 3 (37.5%), incorporating training in curriculum 2 (25%), and including training on sentence and paragraph structure 2 (25%). Nonetheless, 1 (12.5%) librarian shared a contrary opinion by indicating that the training modules are perfect and nothing should be changed. The results show that although all the participants appreciate using the training modules on scholarly work, they share contrasting views

on its effectiveness, potential ways to improve it, and the need for improving the training programs.

Despite the positive impacts of scholarly writing training identified by the librarians, the results showed that postgraduate students need more motivation to attend the programs. About 7 (87.5%) participants recorded moderate attendance, with only 1 (12.5%) participant recording full attendance of postgraduate students in the scholarly training programs. The difference shows that most postgraduate students are less likely to undertake the training programs, with only a few interested in the modules.

4.7.3 Results from Directors of Postgraduate Studies on Training in Scholarly Writing in Libraries in Facilitating Postgraduate Research

The responses collected from the directors of postgraduate studies opine to the findings collected from the students and the librarians. The directors stated that scholarly training offered in their institutions is effective since most students adhere to formatting, citations, and access databases as their educators require. However, libraries must increase their collaboration with other departments to ensure early training. Based on the results, the universities have introduced various measures to ensure postgraduate students access scholarly training, including making the training mandatory for all students, sharing recorded training on YouTube and learning manual systems, and creating training series to ensure everyone accesses the services. Additionally, the participants recommended assigning a librarian to scholarly training, ensuring that the students gain support during their practice.

The Directors of Postgraduate Studies identified three roles that they play in scholarly writing training. First, they ensure the students undergo training by arranging workshops and seminars. The directors also encourage supervisors to help the students

improve their work quality. The final role identified by the participants is working closely with departments and coordinators to help postgraduate students.

4.7.4 Discussion of Results from Postgraduate Students, Librarians, and Directors of Postgraduate Studies on Training in Scholarly Writing in Libraries in Facilitating Postgraduate Research

The descriptive results from the postgraduate students, librarians, and directors of postgraduate studies show that higher learning institutions rely on various strategies to improve their students' knowledge and skills in scholarly writing. However, the main techniques that stood out in the data analysis are regular practical training and orientation to introduce the participants to the concepts and improve their effectiveness in postgraduate research. These findings agree with Adom's (2021) submission that educational training helps students become critical readers and writers through analyzing, summarizing, synthesizing, and evaluating ideas. By using different strategies, the libraries increase the chances of impacting all students, ensuring they know the different requirements and potential ways to perform better in scholarly writing. After an in-depth analysis of the role of libraries in scholarly writing training, Wang and Qin (2022) found that students have varied interests in structuring, assessing, and delivering their work. As a result, students use different perspectives to approach academic writing based on their interests. The statement shows the importance of using multiple training approaches in the university libraries examined in the study since it ensures that intended information gets to all target students and helps them achieve their goals in scholarly writing.

The research participants show the existence of training programs in their respective institutions that focus on empowering the learners with the knowledge needed in

scholarly writing. As shown in the results, the participants consider the training to be highly effective, with one of the primary indicators of its effectiveness being their awareness of the available scholarly writing resources in their university library. These findings agree with the submission of Pickton (2016) on the role of the library in academic writing training, arguing that library services can be enhanced with several innovative practices presented to the academic and professional community via conferences and academic publications. These are some ways libraries could chip in to support scholarly writing training. According to Melnychuk et al. (2021), one of the most essential aspects of the research process is the provision of academic resources by university libraries. For this reason, the findings present the university libraries as effective in performing their roles, enabling the students to access the needed resources and providing them with information on how to access those that cannot be accessed from the physical facilities.

The results reveal key weaknesses of the training approaches used by their respective institutions through the suggestions presented on improving scholarly training. For instance, data collected from the postgraduate students shows the need for regular training, creating awareness amongst the students, and incorporating Artificial Intelligence (AI) in the training process. This aligns with the submission by Jalal (2019) who noted significant ICT changes in education and community, saying that the changes have also affected library operations. With many library roles becoming ICT enabled, it must also change to include technical aspects like AI in academic writing training, among other functions. The statements from this research findings indicate that although the currently used training approaches have improved students' knowledge and skills in scholarly writing and postgraduate research, they still need further improvement to become more reliable. For instance, the suggestion for

incorporating AI in training is due to the increasing use of AI in different fields; hence the need for the training to include the trend, ensuring that learners can overcome some of its negative impacts on their education.

Jalal (2019) asserts that the changes in academic requirements and ICT have forced libraries to evolve, a change that is expected to continue over time. Therefore, the suggestions for improving the training approaches identify emerging weaknesses of the training programs. By implementing them, the university libraries will enable postgraduate students to engage in scholarly writing in ways that match technological changes while at the same time prioritizing academic integrity.

4.8 Library Academic Integrity Policy Guidelines in Supporting Postgraduate Research

University libraries rely on various guidelines that inform the conduct of their users. In this case, the research study sought to examine the existence of policy guidelines focusing on postgraduate research. As a result, this section contains results on the various policies guiding university libraries, their effectiveness, and potential ways to improve their functioning for the benefit of postgraduate students.

4.8.1 Results from Postgraduate Students on Library Academic Integrity Policy Guidelines

Postgraduate students were required to respond to their respective libraries' questionnaire forms on using Academic Integrity Policies. The main aspects addressed by the practice included the review process of integrity policy, collection of ideas from the stakeholders on the desired changes, access to academic integrity policy, and the use of the integrity policy guidelines, effectiveness, and the existence of the policy guidelines. The findings of the process are presented in Table 4.15.

Table 4. 15*Statements on Library Academic Integrity Policies*

Statement on library academic integrity policy	VSE	SE	ME	LE	VLE	Mean	SD
a. Our university library has put in place academic integrity policies that guide postgraduate research			20 (10.5%)	90 (47.4%)	80 (42.1%)	4.32	.655
b. Academic integrity policy on postgraduate research is followed at our university			10 (5.3%)	110 (57.9%)	70 (36.8%)	4.32	.568
c. The academic integrity policy is used to ensure the quality of postgraduate research in our university			10 (5.3%)	100 (52.6%)	80 (42.1%)	4.37	.583
d. The academic integrity policy is effective in mitigating academic dishonesty in postgraduate research at our institution			30 (15.8%)	80 (42.1%)	80 (42.1%)	4.26	.716
e. I have access to the academic integrity policy at our university		30 (15.8%)	30 (15.8%)	90 (47.4%)	40 (21.1%)	3.74	.967
f. The academic integrity policy is regularly reviewed		30 (15.8%)	30 (15.8%)	90 (47.4%)	40 (21.1%)	3.53	1.233
g. Our university has a platform to collect ideas to help improve academic policy guidelines from stakeholders	10 (5.3%)	30 (15.8%)	60 (31.6%)	30 (15.8%)	60 (31.6%)	3.79	.834

Postgraduate students indicated that their universities rely on various integrity policy guidelines that help improve postgraduate research. In this case, all participants agreed that their university had implemented academic integrity policies that guide postgraduate research. The responses ranged from moderate to a very large extent, indicating awareness of the policies present in the libraries. A similar response was evident in the statement regarding adherence to the academic integrity policy, such that 110 (57.9%) of the participants indicated that the policies are followed to a large extent, with 70 (36.8%) indicating adherence to a very large extent.

Additionally, the results showed that the sampled universities heavily rely on academic integrity policies to ensure the quality of postgraduate research. Out of the 190 participants, 100 (52.6%) and 80 (42.1%) rated the use of the policies to a large extent and a very large extent, respectively. The results also present academic integrity policies as effective in mitigating academic dishonesty in postgraduate research, with the responses ranging from moderate to a large extent. Although most participants indicated they could access the academic integrity policy in their respective universities, 30 (15.8%), participants stated they could access it only to a small extent. Similar responses were recorded on reviewing the academic integrity policy, in which case only 30 participants indicated they face challenges accessing the policies.

In collecting ideas to improve academic policy guidelines, the participants shared contrasting views, ranging from a very small to a very large extent. In this case, the result shows a lack of engagement in developing policies to guide postgraduate research. The findings are similar to those of Fatemi and Saito (2020) who, after collecting data from six universities, found that some postgraduate students were unaware of academic integrity policies in their university libraries. The lack of

knowledge of the existence reflects the institutions' failure to engage the students in developing and implementing academic integrity policies.

The study also involved collecting data on postgraduate students' suggestions for improving academic policy guidelines. Table 4.16 presents the results from the responses.

Table 4. 16

Suggestions to Improve the Academic Integrity Policy Guidelines

N = 190	Frequency	Valid Percent
<ul style="list-style-type: none"> • Update the policy and accommodate new trends 	80	42.1
<ul style="list-style-type: none"> • Involve students when updating policy and collect their ideas 	50	26.3
<ul style="list-style-type: none"> • Enforce consequences if policies are not followed 	30	15.8
<ul style="list-style-type: none"> • Proper training and awareness of the policy guidelines 	30	15.8
Total	190	100.0

To address the challenges facing postgraduate research, the participants shared varied suggestions, with most of them 80 (42.1%) recommending an update of the policy to accommodate new trends. The second-ranked suggestion was collecting students' ideas and involving them when updating the policies, a recommendation supported by 50 (26.3%) of the sample. 30 (15.8%) participants supported enforcement of policy violation consequences, while the remaining 30 (15.8%) students suggested introducing proper awareness and training on the policy guidelines. By implementing the suggestions, the postgraduate students believe that the academic integrity policy guidelines will be more reliable in addressing issues associated with academic dishonesty in postgraduate research.

The results support those established by previous researchers, presenting the currently used policies as unreliable in addressing academic dishonesty in postgraduate education. For instance, studies by Ali et al. (2016) and Ison (2018) show that implementing policies such as copyright protection rights has been unreliable in addressing the target challenges. For the policies to positively impact the learning process, they must undergo changes that will make them more comprehensive, improving their functioning and impact on postgraduate education. Therefore, the recommendation by the research participants to improve policies in their respective universities reflects concerns voiced by other stakeholders in different universities worldwide due to the inefficiency of policies in combating academic dishonesty.

4.8.2 Results from Librarians on Library Academic Integrity Policy Guidelines

The study's librarians identified varied concepts in their universities' academic integrity policy guidelines. In this case, the participants identified six primary concepts; acceptable plagiarism threshold, penalties, disciplinary actions, candidates' responsibilities, charges, expectations, and roles and responsibilities of the committee members. The results also indicated that the universities had experienced a considerably good level of compliance over the past three years, indicating the reliability of the policy guidelines. On the impacts of academic integrity policies on the presentation of original research by postgraduate students, the librarians stated that the guidelines help understand the importance of conducting original research. Additionally, the guidelines require that postgraduate research be checked at all stages, ensuring the final thesis or dissertation is quality.

Since the academic integrity policy guidelines have various weaknesses that affect their effectiveness, the librarians suggested various ways to amend the guidelines. The

primary ways to improve the policies, as identified in the results, are reducing threshold levels to more favorable ones, including grant proposal writing, incorporating aspects of AI, and engaging students in policy formulation and revision. Additionally, the librarians responded to potential ways to promote adherence to the policy guidelines. The suggestions included incorporating the policies in training sessions, sensitizing and encouraging students to adhere, sharing the policies through emails and other available platforms, and reporting violation cases.

Based on the responses, the librarians consider the functioning of the academic integrity policy guidelines to be effective but can be improved to eliminate some of the existing challenges. As established by a study conducted on academic integrity policies by Stoeck and Eaton (2020) the policies significantly reduce the likelihood of students behaving unethically, especially when the pressure to do so is high. The reliability of the policies in discouraging students from behaving unethically is likely to result in other stakeholders, including librarians supporting their introduction and implementation. However, the findings differed from those of Ison (2018) who indicated that implementing policies has not been effective in eradicating academic dishonesty. As such, previous studies provided contrasting findings regarding the effectiveness of academic integrity policies in combating academic dishonesty.

4.8.3. Results from Directors of Postgraduate Studies on Library Academic Integrity Policy Guidelines

The directors of postgraduate studies from the two universities gave responses that supported data collected from the postgraduate students and the librarians. The results showed that anti-plagiarism policies present in universities are effective when used as a guide. However, the universities experience a significant challenge in creating

awareness about their existence to the students. To ensure that postgraduate students follow the academic integrity policies, the directors of postgraduate studies provided three main recommendations; making sure the students are aware, ensuring penalization upon violation, and failing to accept the thesis until it reaches the set threshold.

4.8.4. Discussion of Results from Postgraduate Students, Librarians, and Directors of Postgraduate Studies on Library Academic Integrity Policy Guidelines

Results from the postgraduate students, librarians, and directors of postgraduate studies on academic integrity policy guidelines showed that the universities have various guidelines that help them address the issue of academic dishonesty. The results agreed with the submission by Paradise and Filiatreau (2021) that research integrity is undermined by the dramatic cases of academic misconduct exposed in the media and the arguably more prevalent and less visible bleaches and more prevalent but less discernible integrity breaches. Some integrity violations could seem minor, but they constitute research ethics violations. While they could be less discernible and ignored in some cases, they constitute research integrity violations nonetheless. As shown by the results of this study, policies are considered highly effective and followed by most postgraduate researchers. The data also showed that most students were aware of the existence of the policies and potential punishment for their violations.

According to Stoesz and Eaton (2020), formal policies with careful development and implementation are vital to any institution since they reduce unethical behavior, especially when people are pressured to act unethically. This study proves that postgraduate students are at high risk of committing academic dishonesty due to various factors, including pressure to meet strict deadlines. For this reason, the presence of

integrity policy guidelines and making them known to the students ensures that the library limits the chances of the students engaging in academic dishonesty.

However, the collected data showed that some students are unfamiliar with the academic integrity guidelines and contents. The students need to be made aware of the policies, increasing the risk of violating some guidelines. The results contradicted the assertion by Paradise and Filliatreau (2021) who stated that all academic dishonesty guidelines should follow the principle of access. Moreover, they must meet the criteria established by Miron et al. (2021) that for integrity guidelines to be effective including, access, approach, responsibility, detail, and support. In this case, the sampled universities were inefficient in implementing their academic policy guidelines since they were inaccessible to some students. As such, the students were unaware of the various requirements and punishments that may accompany practices identified in the policy guidelines.

The above findings showed the need to improve the existing policy guidelines to improve their ability to address some of their weaknesses. The participants suggested updating the policies to address new trends to achieve this. As shown in the results, practices such as the increased role of AI in the education sector introduce new challenges that require the amendment of existing systems to match the new demands. The results also showed the need for engaging students when reviewing the policies and creating awareness of their existence and requirements. The primary reason for engaging students was to ensure they are involved in the development to minimize the likelihood of violating some of their provisions. On the same accord, Fatemi and Saito (2020) advocate training students on academic integrity measures and policies to

promote their knowledge of the concepts. In so doing, the institutions will curb violation of the guidelines, thus achieving academic integrity in postgraduate research.

The results from the directors for postgraduate studies showed their focus on enforcement of the guidelines, especially by ensuring research work meets the required threshold before it is accepted. The call was to ensure that the guidelines are respected and adhered to fully to maintain the integrity of submitted research and theses. In this case, the call was attributed to the failure of the institutions to enforce the consequences of violating the policies, resulting in increased cases of academic dishonesty in the institutions. Burke and Bristor (2016) state that a complete policy guideline must outline penalties for specific breaches. As such, the recommendation by the directors is to not only discourage violation of the policy guidelines but also ensure that they meet the required standards.

4.9. The Creation of Awareness by the Library on Academic Honesty to Support Postgraduate Research

This section will provide results on university libraries' efforts in creating awareness of academic honesty. The information will focus on the role played by the library in ensuring postgraduate students are made aware of academic honesty and potential solutions to eliminate academic dishonesty in postgraduate research.

4.9.1. Results from Postgraduate Students on the Creation of Awareness by the Library on Academic Honesty

Postgraduate students were asked to indicate the extent to which their institutions' creation of awareness on academic honesty corresponds to a set of statements. The aspects examined by the statements included the presence of awareness programs, platforms to collect students' ideas, students' appreciation of the present creation-

awareness methods, access to academic honesty awareness programs, and the provision of inspiration for students to participate in the awareness creation programs. The findings were as shown in Table 4.17.

Table 4. 17*Statements on Creation of Awareness by the Library*

Statements of the creation of awareness by the library (N = 190)	VSE	SE	ME	LE	VLE	Mean	SD
a) My university library holds postgraduate students awareness programs		10 (5.3%)	60 (31.6%)	80 (42.1%)	40 (21.1%)	3.79	.834
b) Our university has platforms to collect ideas from students on programs they require to be emphasized on	10 (5.3%)		80 (42.1)	70 (36.8%)	30 (15.8%)	3.58	.938
c) University students appreciate the academic awareness-creation methods	10 (5.3%)		30 (15.8%)	90 (47.4%)	60 (31.6%)	4.00	.976
d) My university provides access to the academic honesty awareness creation programs	10 (5.3%)		60 (31.6%)	70 (36.8%)	40 (22.2%)	3.72	.992
e) My university has put in place academic honesty awareness activities to ensure effective academic dishonesty mitigation in postgraduate research	30 (15.8%)		40 (21.1%)	100 (52.5%)	20 (10.5%)	3.42	1.187
f) Our library provides inspiration for students to participate in awareness programs on academic honesty to support postgraduate research	30 (15.8%)		40 (21.1%)	70 (36.8%)	50 (26.3%)	3.58	1.314

Postgraduate students participating in the study indicated the importance of the creation of awareness by Librarians on academic honesty. The results showed that the universities hold postgraduate students' awareness programs. However, the participants shared varied views regarding the existence of platforms to collect students' ideas on programs that they require to be focused on. Although most participants showed engagement in their institutions, 10 (5.3%) participants indicated that their university collects ideas from students to a very small extent. A similar result was evident in the university's appreciation of the academic-awareness methods used by the institutions. In this case, 10 (5.3%) participants indicated that the practice was to a very small extent despite the other students providing responses that range from moderate to a very large extent.

Most participants also indicated that their university had introduced academic honesty awareness activities seeking to mitigate academic dishonesty in postgraduate studies. One provision of inspiration for students to participate in awareness programs a majority of postgraduate students believed that universities inspire students to participate in the programs. In this case, 70 (36.8%) of the participants considered the libraries to provide inspiration to a large extent, with an additional 50 (26.3%) rating the process to a very large extent.

The results in this section were consistent with those presented by Paradeise and Filliatreau (2021) indicating that most postgraduate students in countries such as Australia are dissatisfied with the information, they receive about avoiding academic integrity breaches. Although the students were aware of the negative impacts of academic integrity, they lacked knowledge of the various factors that contribute to the practice and the most effective ways to avoid them.

The researcher required postgraduate students to identify strategies to improve academic dishonesty awareness. The findings were as presented in Table 4.18.

Table 4. 18

Strategies to Improve Creation of Awareness of Academic Dishonesty

	Frequency	Valid Percent
• Have regular training and campaigns	70	36.8
• Use more personalized and creative channels, such as social media	50	26.3
• Allocate a budget for conducting awareness	30	15.8
• Get feedback from students on areas that need review	40	21.1
Total	190	100.0

Although the participants recognized the existence of programs that focus on creating awareness against academic dishonesty in postgraduate research, they considered the process unreliable. As such, libraries need to introduce strategies to improve their functioning. The suggested strategies included having regular training and campaigns 70 (36.8%), using more personalized and creative channels such as social media 50 (26.3%), getting feedback from students on areas that need review 40 (21.1%), and allocating a budget for awareness 30 (30%). Implementing the strategies would likely improve awareness functioning, thus positively impacting academic honesty in the target population.

4.9.2 Results from Librarians on the Creation of Awareness by the Library on Academic Honesty

Results from the librarians' interviews indicated the presence of many forms of awareness used by the universities to combat academic dishonesty in postgraduate research. The most common awareness avenues used and methods used by the

universities are the orientation of new students 2 (25%), during online and physical training 3 (37.5%), use of websites, social media platforms, and emails 2 (25%), and during open access week 1 (12.5%). Although the universities and the participants have used the approaches over time, the results indicated that they were yet to achieve the users' expectations. In this case, 7 (87.5%) participants rated the efficacy of the awareness creation approaches as moderate due to various factors, including lack of collaboration from all stakeholders, disciplinary actions, and the need for more awareness and training. Thus, addressing the challenges would improve the functioning of the awareness programs and ultimately help address the issue of academic dishonesty in postgraduate research.

4.9.3 Results from Directors of Postgraduate Studies on the Creation of Awareness by the Library on Academic Honesty

The directors of postgraduate studies presented the issue of academic dishonesty as being significant, with most students being aware of the measures introduced by the university. The participants indicated that *“we always incorporate an academic honesty policy during training, which has led to 4 out of 5 students knowing about the measures.”* On the effectiveness of creating academic honesty awareness, one director believed that awareness is highly effective in mitigating academic dishonesty. The practice enabled students to avoid dishonesty, thus functioning as a deterrent to those intending to cheat. Conversely, the other participant from the category indicated that the approach is not effective since it has failed to stop cheating among students, with some engaging in the practice in an attempt to complete their research on time. The results indicated that to create student awareness, the directors rely on close interactions with the senior faculty members who act as mentors and facilitate periodic communication and training.

4.9.4 Discussion of Results from Postgraduate Students, Librarians, and Directors of Postgraduate Studies on the Creation of Awareness by the Library on Academic Honesty

The results presented the creation of awareness as one of the most reliable tools libraries use to promote academic honesty. As shown by the participants, the universities had various awareness programs that the students considered highly effective in performing their roles. The postgraduate students also indicated the existence of platforms used by their libraries to collect their ideas relating to the awareness processes. The results were highly significant since they showed awareness as a two-way communication process involving the libraries and the students. Besides, Michalak et al. (2018) librarians in the United States have collaborated with faculty since the 1980s to teach information literacy skills to students because plagiarism is an essential component of this training. This contributes significantly to the library's role in creating awareness of academic integrity as a core role.

Also, White (2021) demonstrated that the role of university libraries includes tackling plagiarism, mainly because they are vital stakeholders in postgraduate research. He also identified that student sensitization on academic integrity and other matters falls under the library's job description. According to this research's findings, the two groups exchange ideas and use them to improve the relationship between them and their ability to perform their respective tasks. In this case, the success of the libraries in creating awareness ensures that the students have sufficient information about the various aspects of postgraduate research and academic integrity. According to a study by Khan et al. (2021), on awareness concerning plagiarism, the process is vital in avoiding intellectual dishonesty and promoting academic integrity and quality research assurance. Thus, the findings showed the universities' effectiveness in using awareness

to promote academic integrity and combat intellectual dishonesty among postgraduate students.

In responses relating to improving the creation of awareness, the postgraduate students indicated the need for increasing regular training and awareness opportunities. The requirement was to ensure that the awareness process impacts as many students as possible and reminds them of the importance of academic integrity. The finding is similar to that presented by Selemani et al. (2018) stating that university students commit academic dishonesty due to a lack of awareness of the issue. By increasing the awareness rate, most students would be informed of practices such as plagiarism and gain knowledge on how to avoid violating guidelines focusing on the subject.

Additionally, the postgraduate students recommended using personalized channels such as social media to create awareness. The suggestion contradicted data collected from the librarians, indicating their respective universities were using social media as one of the platforms engaged in creating awareness. The contradiction showed the universities' failure to use the platforms, hence the need for improving the approach or using alternative strategies to present the information to the students. Similarly, results from the directors of postgraduate studies showed that one of the participants indicated that the approach was ineffective in enabling the institution to achieve the target goals. As a result, the suggestions presented by the postgraduate students on the potential ways to improve awareness creation should be implemented for the libraries to experience a positive impact on academic integrity. By effectively creating awareness on subjects such as plagiarism and academic integrity breaches, students would be discouraged from committing academic dishonesty (Mansoor & Ameen, 2020). Thus, the success of the institutions in the creation of awareness relies on their ability to use the

information shared by the postgraduate students to enhance the effectiveness of the process.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

The last chapter discussed the results and conclusion of analyzed data. Starting with reliability statistics, response rate, demographic information, and variables related findings. This chapter will discuss the summary of findings broken down in research variables including plagiarism software in universities, scholarly writing training, academic honesty policies and guidelines, and awareness programs. Also, this chapter will consist conclusions from the findings established in chapter four, research recommendations, implications of research findings, and recommendation for future studies.

5.2 Summary of Research Findings

The study used three categories of research respondents, including librarians, postgraduate students, and directors of postgraduate studies from two universities in Kenya, i.e., KeMU and UoEM. The data collection tools included interviews and questionnaires. The research sample consisted of 195 postgraduates, 2 directors of postgraduates, and 11 librarians. However, the researcher collected data from 190 postgraduates, representing a 97.4%, 2 directors of postgraduates representing 100%, and 8 librarians representing 72.7% response rate.

5.2.1 Participants' Demographic Information

Out of the 190 postgraduate students who participated in the study, 80, representing (42.1%) of them were male, with the remaining 110, representing (57.9%) of them were women. Besides, 150 (78.9%) of the participants were Master's Students, and 40 (21.1%) were Doctoral Students. Furthermore, 4 (50%) librarians had a work experience of over ten years, 1 (12.5%) had a work experience of below five years, and

the remaining 3 (37.5%) had a work experience of between 5 and 10 years. The Directors of Postgraduate Studies who participated in the study were 2, 1 from each target institution. They had a working experience of 8 and 10 years respectively.

5.2.2 Summary of Background Information on Academic Dishonesty

This section provides a summary of the findings established in chapter four.

5.2.2.1 Summary of Background Results from the Participants

Students showed diverse perceptions of the stakeholders of academic dishonesty mitigation. While they agreed that all stakeholders have a role in mitigating plagiarism, they argued that postgraduate supervisors are more significant than other stakeholders. Other stakeholders identified as critical in academic dishonesty mitigation included the Director of Postgraduate Studies, Chairperson of the Department, and the Dean of a School.

Moreover, 75% of librarians said academic dishonesty was not rampant in their institutions, while (25%) indicated that their institutions had experienced significant academic dishonesty in the last ten years. The librarians reported that students' academic dishonesty in their institutions includes plagiarism, copying, paraphrasing other people's work, falsifying sources, paying others to do their research, and using artificial intelligence tools to do academic work.

5.2.2.2 Summary of Results on Academic Dishonesty

This study's results indicated that academic dishonesty is a significant challenge in postgraduate education. It also showed that all academic stakeholders, including students, librarians, project supervisors, directors of studies, and heads of departments,

have significant roles in enhancing quality in postgraduate studies. This creates the need for stakeholder collaboration to support postgraduate studies' quality. The study established that this could be done through supervisory models or supervisors to ensure that postgraduate students adhere to the set policies when conducting research. The librarians recommended introducing a committee to oversee student work and to guide and ensure that students gain the required support throughout the study. The study's results also demonstrated that stakeholder collaboration would ensure that all parties contribute positively to the process, minimizing the likelihood of students engaging in academic dishonesty.

5.2.3 Summary of Results on Postgraduate Research at Universities

Despite the challenges experienced by postgraduate students in their studies, they indicated that their institutions had introduced various measures to facilitate their success and improve the quality of postgraduate studies.

Postgraduate students had mixed reactions regarding quality challenges in postgraduate education. The research established that higher education had quality challenges, even though they are not recognizable to some students. The majority of the students indicated that their universities had academic dishonesty mitigation measures, with a small number of students feeling that their institutions were not doing enough to mitigate academic dishonesty. The study results demonstrated that all the students believed their institutions could address academic dishonesty. They also believed their institutions could provide them with library support for their postgraduate studies. However, the students indicated a need for libraries in their universities to improve the level of support that they offer postgraduate students to curb academic dishonesty. They proposed educational training, an academic integrity policy, designating a librarian to

help the postgraduate students, developing collaboration systems that link students, and increasing access to adequate resources.

The librarians who participated in the study indicated that their institutions use different strategies to address academic dishonesty among postgraduate students through reliance on training on accessing physical and online resources, using subscriptions to a wide range of information sources such as journals, encouraging postgraduate students to publish in suitable journals and the presence of guidance on citations and referencing compliance when writing proposals as being shared in the library. Therefore, the research results established training on accessing sources for research as the most common approach universities use to help their postgraduate students in their research.

The findings from the Directors of Postgraduate studies indicated that their institution did not have significant academic dishonesty. However, they indicated that academic dishonesty is reported in smaller numbers.

5.2.4 Summary of Results from Plagiarism Software in Libraries for Supporting Postgraduate Research

Results from the study indicated that postgraduate students consider using antiplagiarism software as a practical approach to improving postgraduate research. The majority of the students submitted that the tool is effective, and they use it in their research. However, they claimed that sensitizing students on the dangers of academic dishonesty is the most appropriate approach to improving postgraduate research in universities. Therefore, even though antiplagiarism software is instrumental in mitigating academic dishonesty, it requires the support of other structures to make it more effective.

The librarians who participated indicated that Turnitin is the only antiplagiarism software used in their university to check plagiarism. They also indicated that some students experience challenges using the software, and they come to them for assistance. They submitted that anti-plagiarism software use is essential in postgraduate research. As a result, their institutions provide students with access to this technology, and they also obtain help from research supervisors.

The directors of postgraduate studies supported these findings, although they indicated that antiplagiarism software use faces limitations because of the prevalence of paraphrasing tools that increase academic dishonesty. Therefore, they recommended scholarly training to minimize the possibility of the students using the existing technologies to facilitate academic dishonesty.

5.2.5 Summary of Results from Training in Scholarly Writing in Libraries in Facilitating Postgraduate Research

This objective sought to establish how scholarly training in universities facilitates postgraduate research. The three categories of respondents gave their understanding and insights into this variable. The study demonstrated that universities have several ways of training their students in scholarly writing. The students who participated in the study reported that their universities use approaches like regular practical training, providing reliable sources such as research journals and orientation. Most consider educational training at their university effective in addressing academic dishonesty. They cited training on recent trends and practical scholarly writing training as the training areas covered by their universities. The students also significantly understood scholarly writing resources in their libraries. However, they demonstrated a significant need to improve the scholarly training programs offered by their university libraries.

The librarians submitted that their universities had introduced scholarly training to their postgraduate students. They reported that the universities trained their postgraduate students in scholarly writing through regular workshops and seminars, partnering with the BPS to have sections allocated for postgraduates to undergo training and orientation to equip students with the knowledge and skills needed to facilitate their scholarly work. The directors of postgraduate studies had similar opinions to those of postgraduate students and librarians. They stated that scholarly training offered in their institutions is practical since most students adhere to formatting, citations, and access databases as their educators require. However, libraries must increase their collaboration with other departments to ensure early training.

5.2.6 Library Academic Integrity Policy Guidelines in Enhancing Postgraduate Research

This variable investigated the existence of policy guidelines focusing on postgraduate research in select universities. Students demonstrated that their institutions rely on integrity policy guidelines that help improve postgraduate research. All the students participating in this study agreed that their universities had academic integrity policies to guide postgraduate research. Most of them were aware of these guidelines in their institutions' libraries. Also, they showed that many students follow and adhere to these guidelines. Besides, the study results showed that the sampled universities depend on academic integrity policies to ensure the quality of postgraduate research. In contrast, academic integrity policies were established to mitigate academic dishonesty in postgraduate research.

The librarians in the study identified several concepts in their institutions' academic integrity policy guidelines, including acceptable plagiarism threshold, penalties,

disciplinary actions, candidates' responsibilities, charges, expectations, and roles and responsibilities of the committee members. They reported that the universities had experienced high compliance levels over the past three years, indicating the policy guidelines' reliability. They also noted that the guidelines help understand the importance of conducting original research.

Directors of postgraduate studies' responses showed that anti-plagiarism policies in universities are effective when used as a guide. However, the universities experience a significant challenge in creating awareness about their existence to the students. They recommended ensuring the students are aware, ensuring penalization upon violation, and only accepting the thesis once it reaches the set threshold.

5.2.7 Summary of the Results of the Creation of Awareness by the Library on Academic Honesty to Support Postgraduate Research

This variable focused on the role played by the library in ensuring postgraduate students are made aware of academic honesty and potential solutions to eliminate academic dishonesty in postgraduate research. The students reported that their universities hold postgraduate students' awareness programs. The participants showed the existence of engagement in their institutions, collecting ideas from students, and the university's appreciation of the academic-awareness methods used by the institutions. Most participants also indicated that their institutions had introduced academic honesty awareness activities seeking to mitigate academic dishonesty in postgraduate studies.

The librarians demonstrated the presence of many forms of awareness used by the universities to mitigate academic dishonesty in postgraduate research. The directors of postgraduate education indicated that they always incorporate an academic honesty

policy during training, which has led to 4 out of 5 students knowing about the measures. On the effectiveness of creating academic honesty awareness, one director believed that awareness is highly effective in mitigating academic dishonesty.

5.3 Conclusions

The researcher cross-examined the results submitted in this study to arrive at critical conclusions. The conclusions are established according to the research variables and objectives.

5.3.1 How Plagiarism Software by Libraries Supports Postgraduate Research at Selected Universities in Kenya

The study established that universities in Kenya use antiplagiarism software to mitigate academic dishonesty in postgraduate research, with Turnitin being the most prevalent software used by many institutions. Universities provide access to students' access and librarian help using this software to check for plagiarism in postgraduate research. However, the user experiences significant challenges because of students' diverse methods to cheat, including disguised translations, self-plagiarism, structural plagiarism, paste collections, and pawn sacrifice. This necessitates training on academic integrity and increased awareness of the use of anti-plagiarism to improve the use of the software in libraries.

5.3.2 How the Training in Scholarly Writing Supports Postgraduate Research at Selected Universities in Kenya

The study established that higher learning institutions have scholarly training initiatives to mitigate academic dishonesty among postgraduate students by improving their knowledge and skills in scholarly writing. The strategies universities use for scholarly writing training include regular practical training and orientation to introduce the students to the concepts and improve their effectiveness in writing postgraduate

research papers. Nevertheless, universities' strategies for scholarly writing training have limitations that reduce their effectiveness in mitigating academic dishonesty. However, regular training, creating student awareness, and incorporating Artificial Intelligence (AI) in the training process could significantly improve the effectiveness of university scholarly writing training programs.

5.3.3 How Library Academic Integrity Policy Guidelines Support Postgraduate Research at Selected Universities in Kenya

The study established that universities have various guidelines that help them mitigate academic dishonesty among their postgraduate students. These policies were considered to be highly effective, and many postgraduate students followed them when doing their research. The study also indicated that many students, like in other institutions, policies in academic institutions direct people to act ethically even when they are under pressure to act otherwise. The postgraduate education context puts postgraduate students under significant pressure. For this reason, they could be pressured to cheat to meet deadlines and complete their studies. However, academic integrity policies ensure they do not cheat. However, the study established that some university students need to be made aware of the existence of these policies. This creates the need for policy awareness and enforcement to make them more effective in mitigating academic dishonesty.

5.3.4 The Awareness Programs Conducted by Library on Academic Honesty to Support Postgraduate Research at Selected Universities in Kenya

Awareness creation of academic honesty emerged as one of the most reliable tools libraries use to promote academic honesty among university students. The studied universities had awareness creation programs and platforms. This variable demonstrated significant collaboration between all stakeholders as it goes all ways.

While the library, through librarians, creates awareness of academic honesty, postgraduate students must strive to understand the concept of academic honesty. Also, the directors of postgraduate studies significantly contribute to this aspect because they establish academic standards for their postgraduate students that are passed to them through the library. However, the study established the need to personalize the awareness creation to reach all the students to reduce instances where some students need access to the programs and platforms used by the university.

5.3.5 Support for Postgraduate Research at Universities

Postgraduate research students observed that postgraduate education experiences significant challenges. However, they reported that their universities had established measures for their success. These measures included training, academic integrity policies, designated librarians, and collaboration between postgraduate education stakeholders. The librarians participating in the study indicated that their institutions supported postgraduate research by providing physical and online academic resources. The directors of postgraduate studies agreed that academic dishonesty was a challenge in postgraduate research even though it was not rampant. Nevertheless, they submitted that their institutions had introduced significant measures to mitigate academic dishonesty, including creating awareness amongst the relevant stakeholders, sensitizations on the evils of cheating through scholarly training, and using antiplagiarism software.

5.4 Recommendations of the Study

The study established significant findings on academic dishonesty measures used by universities to support postgraduate research. The research findings showed the necessity of academic dishonesty mitigation factors to support postgraduate research. Based on these findings, the research made the following recommendations.

5.4.1 Academic Integrity Policies and Guidelines

Universities should ensure increased collaboration among all postgraduate studies stakeholders, including postgraduate students, librarians, research supervisors, lecturers, chairs of departments, and directors of postgraduate studies, in mitigating academic dishonesty in postgraduate research. This will support the development of integrity policies and ensure students are informed about them.

5.4.2 Antiplagiarism software

Universities libraries should support antiplagiarism software with other frameworks like training in academic integrity to support the effectiveness of antiplagiarism software in mitigating academic dishonesty. Although antiplagiarism software mitigates academic dishonesty, it cannot effectively be the only mitigation factor. Hence, it should be supported with other mitigation frameworks.

5.4.3 Scholarly writing training

Universities libraries and faculties should make educational writing training a regular practice or include it in the curriculum. Also, they should incorporate Artificial Intelligence (AI) in the training process to effectively mitigate academic dishonesty among postgraduate students. Nevertheless, they must ensure that students do not use AI to propagate academic dishonesty.

5.4.4 Awareness Creation

University libraries, director of postgraduates, and faculties should establish up-to-date awareness creation forums, such as using social media and personalized emails to inform students about academic integrity policies and guidelines to ensure all students understand and abide by them to address academic dishonesty in postgraduate research. Although general approaches like awareness creation forums work, it is imperative to use personalized approaches to ensure all students access the awareness content.

5.4.5 Postgraduate Research at Universities

Universities should establish measures to support the quality of postgraduate education, including academic dishonesty mitigation measures. Besides, university board of postgraduate studies should improve the publication requirements that postgraduate students need to meet before graduating to boost the quality of research they deliver. Furthermore, the CUE should establish the quality requirements that universities must meet before they can be certified to offer postgraduate programs.

5.5 Implication of the Findings on Theories, Practices and Policies

The research demonstrated that postgraduate research faces many challenges, including academic dishonesty. It also demonstrated the need for universities to employ academic dishonesty mitigation factors to support postgraduate research. It used the theory of planned behavior, which assumes that behaviors are addressed by intentions determined by subjective norms, attitudes, and perceived behavior control. This study agreed with the assumptions of this theory because academic dishonesty is behavior among students that comes from their intentions to cheat. Besides, the study established that this behavior could be controlled by the students themselves and external factors like the various universities' academic dishonesty mitigation measures.

This study will have implications for postgraduate university stakeholders, where universities must adjust their curriculum to include scholarly writing as a common unit for students expected to take on research projects in their studies. It will also impact university training procedures by making them more frequent and accessible to all postgraduate students to reduce instances of academic dishonesty. Postgraduate research supervision will also be impacted, where research supervisors must ensure their students submit original work and guide them. Similarly, universities will adopt

technology in training and create awareness among their students on academic dishonesty and the policies that guide quality postgraduate research.

Also, the research will affect the policies on addressing academic dishonesty to include the requirement for the collaboration of all postgraduate stakeholders and a framework that supports that same in academic dishonesty mitigation. Also, policies on the requirements for graduation will change to ensure that students reach a certain research quality threshold before the university can allow them to graduate. Besides, it will impact training policies to include requirements for ensuring all stakeholders access the training. The antiplagiarism policies will also change to include artificial intelligence in detecting dishonesty and training in academic dishonesty. Besides, the research will impact copyright policies, which will emphasize avoiding copyright infringements through submitting original research.

While universities use antiplagiarism software, they must complement it with other frameworks to effectively curtail plagiarism among postgraduate students. Combining all the mitigation strategies could be more effective than using one approach. Moreover, universities will have to ensure the cooperation of all stakeholders in mitigating dishonesty in postgraduate research.

5.6 Recommendations for Further Studies

The researcher identified the following areas that need further studies:

This study focused on the different factors that different universities employ to mitigate academic dishonesty among postgraduate students to support the quality of postgraduate research. It identified a significant collaboration between postgraduate stakeholders in mitigating academic dishonesty to support postgraduate research.

Hence, there is a significant need to investigate how universities can create a framework for this collaboration and its impacts on postgraduate research quality. Also, while the study focused on the mitigation factors that universities employ to address academic dishonesty, it did not address the impacts these factors have on postgraduate research, students' grades, and other class work. Hence, there is a significant need to investigate how the academic dishonesty mitigation factors used by universities affect students' success and the quality of postgraduate research.

REFERENCES

- Abalkina, A., & Libman, A. (2020). The real costs of plagiarism: Russian governors, plagiarized PhD theses, and infrastructure in Russian regions. *Scientometrics*, 125(3), 2793-2820. <https://link.springer.com/article/10.1007/s11192-020-03716-x>
- Abel, J., Sima, R. G., & Shavega, T. J. (2020). The intensity of academic dishonesty among postgraduate students in higher learning institutions in Tanzania and how to curb the situation. *European Journal of Research and Reflection in Educational Sciences*, 8(2), 9-29. <https://www.idpublications.org/wp-content/uploads/2020/09/Full-Paper-the-intensity-of-academic-dishonesty-among-postgraduate-students-in-higher-learning.pdf>
- Adom, D. (2021). Writing Scholarly Papers: A Window from my Experiences. *ASEAN Multidisciplinary Research Journal*, 8(2), 1-9. <https://www.paressu.org/online/index.php/aseanmrj/article/view/275>
- Ajzen, I. (1985). *From Intentions to Actions: A Theory of Planned Behavior*. Springer. https://doi.org/10.1007/978-3-642-69746-3_2
- Al Khalaf, K., O'Dowling-Keane, S., da Mata, C., McGillicuddy, C. T., Chadwick, B. L., & Lynch, C. D. (2022). Response rates to questionnaire-based studies in the contemporary dental literature: a systematic review. *Journal of Dentistry* 1(1), 104-284. <https://www.sciencedirect.com/science/article/pii/S0300571222003402>
- Akbari, A. (2021). Spinning-translation and the act of plagiarizing: how to avoid and resist. *Journal of Further and Higher Education*, 45(1), 49-64. <https://www.tandfonline.com/doi/abs/10.1080/0309877X.2019.1709629>
- Ali, J., Ullah, H., & Sanauddin, N. (2019). Postgraduate Research Supervision: Exploring the Lived Experience of Pakistani Postgraduate Students. *FWU Journal of Social Sciences*, 13(1), 5-21. http://sbbwu.edu.pk/journal/FWU_Journal_Summer%202013_Summer%2019_Vol_13_No_1/2.%20Postgraduate%20Research%20Supervision%20Exploring%20the%20Lived%20Experience.pdf
- Ali, P., Watson, P., & Dhingra, K. (2016). Postgraduate research students' and their supervisors' attitudes towards supervision. *International Journal of Doctoral Studies*, 11(2), 227-241. <http://eprints.leedsbeckett.ac.uk/id/eprint/2895/>
- Ard, S. E., & Ard, F. (2019). The library and the writing centre build a workshop: Exploring the impact of an asynchronous online academic integrity course. *New Review of Academic Librarianship*, 25(2-4), 218-243. <https://www.tandfonline.com/doi/abs/10.1080/13614533.2019.1644356>
- Awasthi, S. (2019). Plagiarism and academic misconduct: A systematic review. *DESIDOC Journal of Library & Information Technology*, 39(2), 10-35. <https://www.researchgate.net/profile/Shipra->

Awasthi/publication/332568987_Plagiarism_and_Academic_Misconduct_A_Systematic_Review/links/602d249c92851c4ed57abb5e/Plagiarism-and-Academic-Misconduct-A-Systematic-Review.pdf

- Ayllón, S., Alsina, Á., & Colomer, J. (2019). Teachers' involvement and students' self-efficacy: Keys to achievement in higher education. *PLoS one*, *14*(5), e0216865. <https://journals.plos.org/plosone/article/file?id=10.1371/journal.pone.0216865&type=printable>
- Baran, L., & Jonason, P. K. (2020). Academic dishonesty among university students: The roles of the psychopathy, motivation, and self-efficacy. *Plos one*, *15*(8), e0238141. <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0238141>
- Bartram, B. (2019). Using questionnaires. In Brendan (Eds.), *Practical Research Methods in Education*. Routledge. <https://www.taylorfrancis.com/chapters/edit/10.4324/9781351188395-1/using-questionnaires-brendan-bartram>
- Bergin, T. (2018). *An introduction to data analysis: Quantitative, qualitative and mixed methods*. Sage. https://books.google.com/books?hl=en&lr=&id=urvdwaaqbaj&oi=fnd&pg=pp1&dq=data+analysis+in+quantitative+study&ots=h9dljdelou&sig=vtbon6p4blnoyrwzvzvi_bcgx4y
- Bhardwaj, P. (2019). Types of sampling in research. *Journal of the Practice of Cardiovascular Sciences*, *5*(3), 157-163. <https://www.j-pcs.org/article.asp?issn=2395-5414;year=2019;volume=5;issue=3;spage=157;epage=163;aulast=Bhardwaj>
- Bonaccorsi, A., & Secondi, L. (2017). The determinants of research performance in European universities: a large-scale multilevel analysis. *Scientometrics*, *112*(3), 1147-1178. <https://link.springer.com/article/10.1007/s11192-017-2442-7>
- Bonett, D. G., & Wright, T. A. (2015). Cronbach's alpha reliability: Interval estimation, hypothesis testing, and sample size planning. *Journal of organizational behavior*, *36*(1), 3-15. <https://onlinelibrary.wiley.com/doi/abs/10.1002/job.1960>
- Bosnjak, M., Ajzen, I., & Schmidt, P. (2020). The theory of planned behavior: selected recent advances and applications. *Europe's Journal of Psychology*, *16*(3), 352. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7909498/>
- Brown, N., & Janssen, R. (2017). Preventing plagiarism and fostering academic integrity: a practical approach. *Journal of Perspectives in Applied Academic Practice*, *5*(3), 102-109. <https://doi.org/10.14297/jpaap.v5i3.245>
- Burke, M. M., & Bristor, J. (2016). Academic integrity policies: Has your institution implemented an effective policy? *The Accounting Educators' Journal*, *26*(16), 1-10. <https://aejournal.com/ojs/index.php/aej/article/view/338>

- Butale, C., & Motswagosele, D. P. (2022). *A critical analysis: Academic misconduct at the University of Botswana*. IGI Global. <https://doi.org/10.4018/978-1-5225-7531-3.ch009>
- Bylieva, D. S., Lobatyuk, V. V., & Nam, T. A. (2019, April 22). Academic dishonesty in e-learning system. In (IBIMA Ed.), *Proceedings of the 33rd International Business Information Management Association Conference, IBIMA* (Vol. 2020, pp. 7469-7481). IBIMA. https://www.researchgate.net/profile/Daria-Bylieva-2/publication/335690673_Academic_Dishonesty_in_e-Learning_System/links/5ea0a97fa6fdcc88fc360b3d/Academic-Dishonesty-in-e-Learning-System.pdf
- Castleberry, A., & Nolen, A. (2018). Thematic analysis of qualitative research data: Is it as easy as it sounds? *Currents in pharmacy teaching and learning*, 10(6), 807-815. <https://www.sciencedirect.com/science/article/pii/S1877129717300606>
- Colella-Sandercock, J. A., & Alahmadi, H. W. (2015). Plagiarism education: Strategies for instructors. *International Journal of Learning, Teaching and Educational Research*, 13(1), 5-19. <http://www.ijlter.org/index.php/ijlter/article/view/395>
- Cooksey, R., & McDonald, G. (2019). *Surviving and thriving in postgraduate research*. Springer. <https://link.springer.com/content/pdf/10.1007/978-981-13-7747-1.pdf>
- Cerdà-Navarro, A., Touza, C., Morey-López, M., & Curiel, E. (2022). Academic integrity policies against assessment fraud in postgraduate studies: An analysis of the situation in Spanish universities. *Heliyon*, 8(3), e09170. <https://www.sciencedirect.com/science/article/pii/S2405844022004583>
- Cekiso, M., Tshotsho, B., Masha, R., & Saziwa, T. (2019). Supervision experiences of postgraduate research students at one South African higher education institution. *South African Journal of Higher Education*, 33(3), 8-25. <https://journals.co.za/doi/abs/10.20853/33-3-2913>
- Chepchirchir, S., Limo, J., & Kwanya, T. (2020). *Intellectual Property Rights in Digital Libraries: Status, Interventions, Challenges, and Opportunities for Academic Libraries in Kenya*. <https://www.yumpu.com/en/document/view/47427428/anne-nangunda-kukali-v-mary-a-ogola-another-kenya-law->
- Chirikov, I., Shmeleva, E., & Loyalka, P. (2020). The role of faculty in reducing academic dishonesty among engineering students. *Studies in Higher Education*, 45(12), 2464-2480. <https://www.tandfonline.com/doi/abs/10.1080/03075079.2019.1616169>
- Cronan, T. P., Mullins, J. K., & Douglas, D. E. (2018). Further understanding factors that explain freshman business students' academic integrity intention and behavior: Plagiarism and sharing homework. *Journal of Business Ethics*, 147(1), 197-220. <https://link.springer.com/article/10.1007/s10551-015-2988-3>
- Commission for University Education (2014). *University standards and guidelines*. <https://www.cue.or.ke/index.php?>

- Daniel, B., Kumar, V., & Omar, N. (2018). Postgraduate conception of research methodology: implications for learning and teaching. *International Journal of Research & Method in Education*, 41(2), 220-236. <https://www.tandfonline.com/doi/abs/10.1080/1743727X.2017.1283397>
- Daumiller, M., & Janke, S. (2019). The impact of performance goals on cheating depends on how performance is evaluated. *American Educational Research Association Open*, 5(4), 1-10. <https://doi.org/10.1177/2332858419894276>.
- Early, K. W., Seliskar, H. V., White, D. A., Mead, J. L., & Campbell, W. C. (2021). *Original Writing in a Remix Culture: Challenges and Solutions for Addressing Plagiarism*. IGI Global. <https://www.igi-global.com/chapter/original-writing-in-a-remix-culture/284690>
- Eaton, S. E., & Hughes, C. J. (2022). *Academic integrity in Canada: Historical perspectives and current trends*. Springer International Publishing. <https://library.oapen.org/bitstream/handle/20.500.12657/53333/1/978-3-030-83255-1.pdf#page=23>
- Ellis, R., & Hogard, E. (Eds.). (2019). *Handbook of quality assurance for University teaching*. Routledge. <https://api.taylorfrancis.com/content/books/mono/download?identifierName=doi&identifierValue=10.4324/9781315187518&type=googlepdf>
- Fahim, T., & Zoair, N. (2016). Education in ancient Egypt till the end of the graeco-roman period: some evidences for quality. *Journal of association of Arab universities for tourism and hospitality*, 13(3), 1-16. https://jaauth.journals.ekb.eg/article_53848.html
- Fatemi, G., & Saito, E. (2020). Unintentional plagiarism and academic integrity: The challenges and needs of postgraduate international students in Australia. *Journal of Further and Higher Education*, 44(10), 1305-1319. <https://www.tandfonline.com/doi/abs/10.1080/0309877X.2019.1683521>
- Fletcher, J. F. (1997). *Situation ethics: The new morality*. Westminster John Knox Press. <https://books.google.co.ke/books?>
- Flynn, B., Pagell, M., & Fugate, B. (2018). Survey research design in supply chain management: the need for evolution in our expectations. *Journal of Supply Chain Management*, 54(1), 1-15. <https://onlinelibrary.wiley.com/doi/abs/10.1111/jscm.12161>
- Fumagalli, R. (2020). How thin rational choice theory explains choices. *Studies in History and Philosophy of Science Part A*, 83(2020), 63-74. <https://doi.org/10.1016/j.shpsa.2020.03.003>
- Garner, I. (2006). *Library support for research in a university context*. <https://docs.lib.purdue.edu/iatul/2006/papers/24/>

- Garvey, J. C., Hart, J., Metcalfe, A. S., & Fellabaum-Toston, J. (2019). Methodological troubles with gender and sex in higher education survey research. *The Review of Higher Education*, 43(1), 1-24. <https://muse.jhu.edu/article/733633/summary>
- Ghani, F. (2020). Remote teaching and supervision of graduate scholars in the unprecedented and testing times. *Journal of the Pakistan Dental Association*, 29(19), 36-42. <https://www.jpda.com.pk/wp-content/uploads/2020/08/07.-Review-Article-Remote-Teaching-and-Supervision.pdf>
- Gichohi, P. M. (2020). The role of record keeping and maintenance in enhancing decision making among smallholder dairy farmers in Gitugi Ward in Murang'a County, Kenya. *Information Development*, 36(4), 535-545. <https://journals.sagepub.com/doi/abs/10.1177/0266666919879728>
- Githiora, L. W. (2015). *Factors influencing the growth of small-scale dairy farming: a case of Githunguri constituency, Kiambu County, Kenya* [Master's thesis, University of Nairobi]. Kenya. <http://erepository.uonbi.ac.ke/handle/11295/89916>
- Gohar, A. S., & Qouta, M. M. (2021). Challenges of Improving the Quality of Academic Supervision of Postgraduate Studies at the Faculty of Education, Damietta University. *Journal of Educational Issues*, 7(1), 113-137. <https://eric.ed.gov/?id=EJ1304143>
- Gunton, L. (2022). Librarians as drivers of academic integrity for student success at university. *Journal of the Australian Library and Information Association*, 71(2), 1-15. <https://www.tandfonline.com/doi/abs/10.1080/24750158.2022.2063101>
- Halgamuge, M. N. (2017). The use and analysis of anti-plagiarism software: Turnitin tool for formative assessment and feedback. *Computer Applications in Engineering Education*, 25(6), 895-909. <https://onlinelibrary.wiley.com/doi/full/10.1002/cae.21842>
- Hansen, M. A., & Tshoko, G. N. (2021). *A Primer on Survey Research*. IGI Global. <https://www.igi-global.com/chapter/a-primer-on-survey-research/285185>
- Hasan, N., Rana, R. U., Chowdhury, S., Dola, A. J., & Rony, M. K. K. (2021). Ethical considerations in research. *Journal of Nursing Research, Patient Safety and Practise (JNRPSP)* 2799-1210, 1(1), 1-4. <http://hmjournals.com/journal/index.php/JNRPSP/article/view/93>
- Hendy, N. T., & Montargot, N. (2019). Understanding Academic dishonesty among business school students in France using the theory of planned behavior. *The International Journal of Management Education*, 17(1), 85-93. <https://www.sciencedirect.com/science/article/pii/S1472811718302258>
- Holmes, W., Bialik, M., & Fadel, C. (2020). *Artificial Intelligence in Education*. <https://curriculumredesign.org/wp-content/uploads/AIED-Book-Excerpt-CCR.pdf>

- Hollman, T., Palmer, N. F., Chaffin, D., & Luthans, K. (2021). Lying, cheating, & stealing: Strategies for mitigating technology-driven academic dishonesty in collegiate schools of business. *Mountain Plains Journal of Business and Technology*, 22(1), 31-50. <https://openspaces.unk.edu/cgi/viewcontent.cgi?article=1141&context=mpjb>
- Husband, G. (2020). Ethical data collection and recognizing the impact of semi-structured interviews on research respondents. *Education Sciences*, 10(8), 206-218. <https://www.mdpi.com/794776>
- Ison, D. C. (2018). An empirical analysis of differences in plagiarism among world cultures. *Journal of Higher Education Policy and Management*, 40(4), 291-304. <https://www.tandfonline.com/doi/abs/10.1080/1360080X.2018.1479949>
- Jalal, S. K. (2019). Emerging roles of librarians in academic libraries: a great leap forward. *Library Herald*, 57(2), 183-194. <https://www.indianjournals.com/ijor.aspx?target=ijor:lh&volume=57&issue=2&article=002>
- Jones, C. (2020). *Qualitative interviewing..* Routledge. <https://www.taylorfrancis.com/chapters/edit/10.4324/9781003070993-20/qualitative-interviewing-carol-jones>
- Kenyatta University (2020). *Anti-plagiarism policy and guidelines*. <https://www.google.com/url?>
- Khan, A., Richardson, J., & Izhar, M. (2021). Awareness about plagiarism and the effectiveness of library literacy programme towards its deterrence: a perspective of postgraduate resident doctors. *Global Knowledge, Memory and Communication*, 70(8/9), 731-755. <https://www.emerald.com/insight/content/doi/10.1108/GKMC-08-2020-0130/full/html>
- Krou, M. R., Fong, C. J., & Hoff, M. A. (2021). Achievement motivation and academic dishonesty: A meta-analytic investigation. *Educational Psychology Review*, 33(2), 427-458. <https://link.springer.com/article/10.1007/s10648-020-09557-7>
- Kukali, A. (2022). Technological Dualism and Plagiarism in Universities: Analysis of Emerging Trends and Implications on Higher Education. *Journal of African Interdisciplinary Studies*, 6(8), 36 – 51. <https://kenyasocialscienceforum.files.wordpress.com/2022/08/pdf-technological-dualism-and-plagiarism-in-universities-by-dr.-anne-kukali.pdf>
- Kulkarni, S., Govilkar, S., & Amin, D. (2021, May 7). Analysis of Plagiarism Detection Tools and Methods: *Proceedings of the 4th International Conference on Advances in Science & Technology (ICAST2021)*. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3869091
- Kwanya, T. (2022). *Mixed Methods and Quality of Postgraduate Research: A Kenyan Perspective*. IGI Global. <https://www.igi-global.com/chapter/mixed-methods-and-quality-of-postgraduate-research/291192>

- Mahmud, S., Bretag, T., & Foltýnek, T. (2019). Students' perceptions of plagiarism policy in higher education: A comparison of the United Kingdom, Czechia, Poland and Romania. *Journal of Academic Ethics*, 17(3), 271-289. <https://link.springer.com/article/10.1007/s10805-018-9319-0>
- Manzoor, F., Wei, L., Bányai, T., Nurunnabi, M., & Subhan, Q. A. (2019). An examination of sustainable HRM practices on job performance: An application of training as a moderator. *Sustainability*, 11(8), 2263-2282. <https://www.mdpi.com/2071-1050/11/8/2263#>
- Mbom, L. O. (2021). *A Model for Assessing the Performance of Post Graduate Research Supervisors in Kenyan Universities* [Doctoral dissertation, KCA University]. Kenya. <https://repository.kca.ac.ke/handle/123456789/667>
- Melnychuk, T., Schultz, C., & Wirsich, A. (2021). The effects of university–industry collaboration in preclinical research on pharmaceutical firms' R&D performance: Absorptive capacity's role. *Journal of Product Innovation Management*, 38(3), 355-378. <https://onlinelibrary.wiley.com/doi/abs/10.1111/jpim.12572>
- Morrow, L. (2022). *Beyond the traditional: academic integrity in Canadian librarianship*. Springer International Publishing. <https://library.oapen.org/bitstream/handle/20.500.12657/53333/978-3-030-83255-1.pdf?sequence=1#page=453>
- Mansoor, F., & Ameen, P. D. K. (2020). Promoting academic integrity in South Asian research culture: The case of Pakistani academic institutions. *South Asian Studies*, 31(2), 473 – 486. <http://journals.pu.edu.pk/journals/index.php/IJSAS/article/view/3062>
- Maxel, O. J. M. (2013). Plagiarism: the cancer of East African university education. *Journal of Education Practice*, 4(17), 137-143. <https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.850.3209&rep=rep1&type=pdf>
- Michalak, R., Rysavy, M., Hunt, K., Smith, B., & Worden, J. (2018). Faculty perceptions of plagiarism: Insight for librarians' information literacy programs. *College & Research Libraries*, 79(6), 747-796. <http://crl.acrl.org/index.php/crl/article/view/16827>
- Miron, J., McKenzie, A., Eaton, S. E., Stoesz, B., Thacker, E., Devereaux, L., & Rowbotham, K. (2021). Academic integrity policy analysis of publicly-funded universities in Ontario, Canada: a focus on contract cheating. *Canadian Journal of Educational Administration and Policy/Revue canadienne en administration et politique de l'éducation*, 8(197), 62-75. <https://www.erudit.org/en/journals/cjeap/1900-v1-n1-cjeap06521/1083333ar/abstract/>

- Mkandawire, S. B. (2019). *Selected Common Methods and Tools for Data Collection in Research Chapter Nine*. Marvel Publishers. <http://dspace.unza.zm/handle/123456789/6937>
- Moten, A. R. (2014). Academic dishonesty and misconduct: Curbing plagiarism in the Muslim world. *Intellectual Discourse*, 22(2), 1-14. <https://journals.iium.edu.my/intdiscourse/index.php/id/article/view/610>
- Mthuli, S. A., Ruffin, F., & Singh, N. (2021). 'Define, Explain, Justify, Apply' (DEJA): An analytic tool for guiding qualitative research sample size. *International Journal of Social Research Methodology*, 25(6), 809-821. <https://www.tandfonline.com/doi/abs/10.1080/13645579.2021.1941646>
- Mugenda, O. M., & Mugenda, A. G. (2003). *Research methods: Quantitative & qualitative approaches*. Acts press.
- Muraraneza, C., Mtshali, N., & Bvumbwe, T. (2020). Challenges in postgraduate research supervision in nursing education: Integrative review. *Nurse education today*, 89(1), 104-376. <https://www.sciencedirect.com/science/article/pii/S0260691719308809>
- Musau, P., & Boibanda, F. O. (2017). Academic dishonesty: a Kenyan medical school experience. *East African Medical Journal*, 94(9), 685-689. <https://www.ajol.info/index.php/eamj/article/view/172058>
- Nardi, P. M. (2018). *Doing survey research: A guide to quantitative methods*. Routledge. <https://www.taylorfrancis.com/books/mono/10.4324/9781315172231/survey-research-peter-nardi>
- Narasanaikar, K. I., & Hangaragi, K. B. (2017). Plagiarism: An electronic detection tool Turnitin. *International Journal of Multidisciplinary Research and Development*, 4(12), 187-190. https://www.academia.edu/download/57993283/Plagiarism_Article.pdf
- Nzioki, T. S. (2018). *The Emerging Role of Librarians In A Digital Environment: A Case of the University of Nairobi Jomo Kenyatta Memorial Library* [Doctoral dissertation, University of Nairobi]. Kenya. <http://erepository.uonbi.ac.ke/handle/11295/104779>
- Ochilova, B. (2020). *Education and Prosperity*. Archive of Scientific Publications. [https://api.scienceweb.uz/storage/publication_files/1526/2454/62b47c4ced2c7____%d0%a1%d0%ba%d0%be%d0%b1%d1%83%d1%81%d0%b4%d0%b0%d0%b3%d0%b8%20%d0%bc%d0%b0%d2%9b%d0%be%d0%bb%d0%b0%20\(2020\).pdf](https://api.scienceweb.uz/storage/publication_files/1526/2454/62b47c4ced2c7____%d0%a1%d0%ba%d0%be%d0%b1%d1%83%d1%81%d0%b4%d0%b0%d0%b3%d0%b8%20%d0%bc%d0%b0%d2%9b%d0%be%d0%bb%d0%b0%20(2020).pdf)
- O'Donnell, R., Maloney, K., Masters, K., & Liu, D. (2020). Library-faculty referencing and plagiarism pilot using technology-mediated feedback for change. *Journal of the Australian Library and Information Association*, 69(4), 523-539. <https://www.tandfonline.com/doi/abs/10.1080/24750158.2020.1813406>

- Olivia-Dumitrina, N., Casanovas, M., & Capdevila, Y. (2019). Academic writing and the internet: Cyber-plagiarism amongst university students. *Journal of New Approaches in Educational Research (NAER Journal)*, 8(2), 112-125. <https://www.learntechlib.org/p/216721/>
- Ondondo, E. A., & Rew, F. O. (2020). Discourse Markers and Plagiarism in the Literature Review Section of a Research Thesis: A Study in Kenya. *Communication and Linguistics Studies*, 6(2), 27- 32. <http://62.24.102.115:8080/handle/123456789/8830>
- Pai, R. D., & Parmar, S. S. (2015). User awareness survey on Turnitin: An electronic plagiarism detection tool. *International Journal of Information Dissemination and Technology*, 5(1), 41-45. <http://ijidt.com/index.php/ijidt/article/view/468>
- Paradeise, C., & Filliatreau, G. (2021). Scientific Integrity Matters. *Minerva*, 59(3), 289-309. <https://link.springer.com/article/10.1007/s11024-021-09440-x>
- Parks-Leduc, L., Guay, R. P., & Mulligan, L. M. (2022). The relationships between personal values, justifications, and academic cheating for business vs. non-business students. *Journal of Academic Ethics*, 20(4), 499-519. <https://link.springer.com/article/10.1007/s10805-021-09427-z>
- Peled, Y., Eshet, Y., Barczyk, C., & Grinautski, K. (2019). Predictors of Academic Dishonesty among undergraduate students in online and face-to-face courses. *Computers & Education*, 131(2), 49-59. <https://www.sciencedirect.com/science/article/pii/S036013151830112X>
- Pickton, M. (2016). Facilitating a research culture in an academic library: Top down and bottom-up approaches. *New Library World*, 117(1/2), 105-127. <https://www.emerald.com/insight/content/doi/10.1108/NLW-10-2015-0075/full/html>
- Pidd, H. (2011). *German defence minister stripped of doctorate for plagiarism*. The Guardian. <https://www.theguardian.com/world/2011/feb/24/german-defence-minister-guttenberg-plagiarism>
- ProQuest Dissertations and Theses Global (2023). *Uncover the undiscovered*. ProQuest. <https://about.proquest.com/en/products-services/pqdtglobal/>
- Putri, P. Y. A., & Saputra, K. A. K. (2021). Writing of scientific works in a dissertation context and the difference with thesis. *International Journal of Business, Economics and Law*, 24(4), 1-7. <https://www.ijbel.com/wp-content/uploads/2021/06/IJBEL24-701.pdf>
- Radulovic, U., & Uys, T. (2019). Academic dishonesty and whistleblowing in a higher education institution: A sociological analysis. *African Journal of Business Ethics*, 13(2), 16-41. <http://ajobe.journals.ac.za/pub/article/view/218>
- Rafiq, M., Batool, S. H., Ali, A. F., & Ullah, M. (2021). University libraries response to COVID-19 pandemic: A developing country perspective. *The Journal of Academic Librarianship*, 47(1), 102-280.

https://www.academia.edu/download/66658016/2021_University_libraries_response_to_COVID.pdf

- Ranawella, T. C. (2021). Impact of Librarian's Role in Promoting Academic Integrity within the University. *Virtual International Conference on Library & Information Sciences*, 12(3), 4-31. <http://ir.kdu.ac.lk/bitstream/handle/345/5363/>
- Rop, F. K. (2017). *Application of plagiarism detection software to Enhance research: A case of University of Nairobi post Graduate Students and Lecturers* [Doctoral dissertation, University of Nairobi]. Kenya. <http://erepository.uonbi.ac.ke/handle/11295/102275>
- Ruipérez, G., & García-Cabrero, J. C. (2016). Plagiarism and academic integrity in Germany. *Comunicar. Media Education Research Journal*, 24(2), 1-23. https://www.scipedia.com/public/Ruiperez_Garcia-Cabrero_2016a
- Saeed, M. A., Mohammed H. Al-Ahdal, A. A., & Al Qunayeer, H. S. (2021). Integrating research proposal writing into a postgraduate research method course: what does it tell us? *International Journal of Research & Method in Education*, 44(3), 303-318. <https://www.tandfonline.com/doi/abs/10.1080/1743727X.2020.1777963>
- Selemani, A., Chawinga, W. D., & Dube, G. (2018). Why do postgraduate students commit plagiarism? An empirical study. *International Journal for Educational Integrity*, 14(1), 1-15. <https://edintegrity.biomedcentral.com/articles/10.1007/s40979-018-0029-6>
- Singh, B. P. (2016). Preventing the plagiarism in digital age with special reference to Indian Universities. *International Journal of Information Dissemination and Technology*, 6(4), 281-287. <https://www.indianjournals.com/ijor.aspx?target=ijor:ijidt&volume=6&issue=4&article=008>
- Singh, A. S., & Masuku, M. B. (2014). Sampling techniques & determination of sample size in applied statistics research: An overview. *International Journal of economics, commerce and management*, 2(11), 1-22. https://d1wqtxts1xzle7.cloudfront.net/65225177/21131_
- Sollmann, R., Gardner, B., Chandler, R. B., Royle, J. A., & Sillett, T. S. (2015). An open-population hierarchical distance sampling model. *Ecology*, 96(2), 325-331. <https://esajournals.onlinelibrary.wiley.com/doi/full/10.1890/14-1625.1>
- Sonn, R. (2016). The challenge for a historically disadvantaged South African university to produce more postgraduate students. *South African Journal of Higher Education*, 30(2), 226-241. <https://doi.org/10.20853/30-2-601>
- Sovacool, B. K., Axsen, J., & Sorrell, S. (2018). Promoting novelty, rigor, and style in energy social science: Towards codes of practice for appropriate methods and research design. *Energy Research & Social Science*, 45(3), 12-42. <https://www.sciencedirect.com/science/article/pii/S2214629618307230>

- Stephens, J. M., Watson, P. W. S. J., Alansari, M., Lee, G., & Turnbull, S. M. (2021). Can online academic integrity instruction affect university students' perceptions of and engagement in academic dishonesty? Results from a natural experiment in New Zealand. *Frontiers in Psychology*, *12*, 56-91. <https://doi.org/10.3389/fpsyg.2021.569133>
- Stoesz, B. M., & Eaton, S. E. (2020). Academic integrity policies of publicly funded universities in western Canada. *Educational Policy*, *36*(6), 1-20. <https://journals.sagepub.com/doi/abs/10.1177/0895904820983032>
- Study in Kenya (2022). *Public Universities and their Campuses in Kenya*. <https://studyinkenya.co.ke/public-universities-in-kenya>
- Stratton, S. J. (2021). Population research: convenience sampling strategies. *Prehospital and disaster Medicine*, *36*(4), 373-374. <https://www.cambridge.org/core/journals/prehospital-and-disaster-medicine/article/population-research-convenience-sampling-strategies/b0d519269c76db5bffbfb84ed7031267>
- Sürücü, L., & MASLAKÇI, A. (2020). Validity and reliability in quantitative research. *Business & Management Studies: An International Journal*, *8*(3), 2694-2726. <http://www.bmij.org/index.php/1/article/view/1540>
- Sverdlik, A., Hall, N. C., McAlpine, L., & Hubbard, K. (2018). The PhD experience: A review of the factors influencing doctoral students' completion, achievement, and well-being. *International Journal of Doctoral Studies*, *13*(1), 361-388. <https://www.informingscience.org/Publications/4113>
- The Guardian (2013). *German education minister quits over PhD plagiarism*. <https://www.theguardian.com/world/2013/feb/09/german-education-minister-quits-phd-plagiarism>
- The United States Census Bureau (2019, February 21). *Number of people with master's and doctoral degrees doubles since 2000*. <https://www.census.gov/library/stories/2019/02/number-of-people-with-masters-and-phd-degrees-double-since-2000.html>
- Tijdink, J. K., Horbach, S. P., Nuijten, M. B., & O'Neill, G. (2021). Towards a research agenda for promoting responsible research practices. *Journal of Empirical Research on Human Research Ethics*, *16*(4), 450-460. <https://journals.sagepub.com/doi/abs/10.1177/15562646211018916>
- Twum, K. K., Adams, M., Budu, S., & Budu, R. A. A. (2022). Achieving university libraries user loyalty through user satisfaction: the role of service quality. *Journal of Marketing for Higher Education*, *32*(1), 54-72. <https://www.tandfonline.com/doi/abs/10.1080/08841241.2020.1825030>
- von Isenburg, M., Oermann, M. H., & Howard, V. (2019). Plagiarism Detection Software and Its Appropriate Use. *Nurse Author & Editor*, *29*(1), 1-10. <https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1750-4910.2019.tb00034.x>

- Wadman, M. (2005). One in three scientists confesses to having sinned. *Nature*, 435(7043), 718-720. <https://www.nature.com/articles/435718b>
- Waithaka, A. G., & Gitimu, P. (2012). Academic dishonesty-team effort against it; a review of literature. *Journal of Academic and Business Ethics*, 6(1), 1-7. <https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.474.6300&rep=rep1&type=pdf>
- Wang, J., & Qin, L. T. (2022). Facilitating and assessing academic writing to graduate students in a pilot English for Academic Purposes course: An activity theoretical perspective. *International Journal of Educational Reform*, 31(3), 300-316. <https://journals.sagepub.com/doi/abs/10.1177/10567879211043469>
- White, A. M. J. (2021). *Information literacy and critical thinking in higher education: Some considerations*. IGI Global. <https://www.igi-global.com/chapter/information-literacy-and-critical-thinking-in-higher-education/269883>
- Wiegand, W. A. (2022). *Research Libraries, the Ideology of Reading, and Scholarly Communication*. <https://books.google.com/books?hl=en&lr=&id=loweaaqbaj&oi=fnd&pg=pa118&dq=the+support+role+of+a+library+in+research&ots=svkzvcuxuf&sig=m7djh6uw546i5ztcqg5vfrkcg3g>
- Zheng, S. (2017). *How students cheated in exams to get into China's imperial civil service*. South China Morning Post. <https://www.scmp.com/news/china/society/article/2088423/how-students-cheated-exams-get-chinas-imperial-civil-service>

APPENDICES

Appendix I: Informed Consent cover letter

Antony Mwangi Maina

Kenya Methodist University

P.O. Box 267 – 60200

Dear respondent,

I am writing to request consent to participate in my study, which will help me to actualize my academic research that examines the *Analysis of Academic Dishonesty Mitigation Measures put in place by Libraries for Supporting Postgraduate Research at Selected Universities in Kenya*. This research hopes to develop a framework that will aid in maintaining honesty and ethics in university high education.

Procedure to be followed

The specific questions in the questionnaires and interviews are organized into sections ranging from section A to F for library staff, postgraduate students, directors of postgraduate studies. Section A covers the introduction part constituting the biographical information of the sampled respondents. Sections A, C, D, E, and F contain questions regarding the independent variables, while section B constitutes questions on the dependent variable. Several questions in the questionnaire are closed-ended, and some open-ended ones are for each construct. All sentiments in the questionnaire are on 5 points Likert scale in total. It takes approximately 10 to 15 minutes to complete the questionnaire and respond to the interview session. You are under no obligation to complete the questionnaire or to, answer all questions presented or participate in the interview. If you come to a question that you don't wish to answer, simply skip it. I hope you will be willing to participate because your responses are important and valued in this study and will go a long way to help in designing an

appropriate framework. Your participation will remain strictly confidential. Your name will not be attached to any of the data you provide. You are welcome to discontinue participation in the study at any time should you wish to do so.

Discomforts and risks

In this study, there are no risks of participating in the research. The reputation will also not be injured. The respondent is welcome to discontinue participation in the study at any time should one wish to do so due to discomfort. You may also stop the interview at any time. The interview may take about 30 minutes to complete.

Benefits

If you participate in this study, you will help us to strengthen the academic integrity of research by postgraduate's students in Kenya. Your input is, therefore, critical in generating new knowledge and will go a long way in ensuring academic honesty in research delivered by universities.

Rewards

There is no reward for anyone who chooses to participate in the study.

Confidentiality

Your participation and those of the students will remain strictly confidential. No name will be recorded on the questionnaire or attached to any of the data you provide. The data collection will be kept in a confidential location after collection and in the future and, moreover, will not have anything to identify you.

Contact Information

Should you have questions regarding your participation, please contact me on Amaina0378@stu.kemu.ac.ke. You may also contact my research supervisor at paul.maku@kemu.ac.ke.

I am kindly asking you to sign the consent form (below) indicating agreement for you to participate in the study.

Participant’s Statement

The above statement regarding my participation in the study is clear to me. I have been given a chance to ask questions, and my questions have been answered to my satisfaction. My participation in this study is entirely voluntary. I understand that my records will be kept private and that I can leave the study at any time. I understand that I will not be victimized at my place of work whether I decide to leave the study or not and my decision will not affect the way I am treated at my workplace.

Name of Participant..... Date.....

Signature.....

Investigator’s Statement

I, the undersigned, have explained to the volunteer in a language s/he understands the procedures to be followed in the study and the risks and benefits involved.

Name of Interviewer.....Date.....

Interviewer Signature.....

Appendix II: Questionnaire for Postgraduate Students

INSTRUCTIONS

Please do not indicate your name anywhere in this questionnaire. You are requested to truthfully respond to the questions by ticking (✓) or filling in the blank spaces as provided.

Section A: Demographic Information

1. What is your gender?
 - a) Male []
 - b) Female []

2. What academic level are you pursuing?
 - a) Masters []
 - b) Doctorate []

3. Who plays the most significant role in ensuring quality postgraduate research?
 - a) The student []
 - b) The university []
 - c) Both the student and the university []

Section B: PostGraduate Research at Universities.

4. The table below contains statements regarding postgraduate research at universities and the challenges it faces. Kindly provide a rating expressing the extent to which you feel is satisfactory to the best of your understanding.

1 = to a very small extent (VSE), 2 = to a small extent (SE), 3 = to a moderate extent (ME), 4 = to large extent (LE), 5 = to a very large extent (VLE).

Statements on postgraduate research at universities	To a very small extent (1)	To a small extent (2)	To a moderate extent (3)	To a large extent (4)	To a very large extent (5)
a) My university has put up measures that emphasizes on postgraduate research	[1]	[2]	[3]	[4]	[5]
b) There are measures put in place in our university to ensure quality postgraduate research	[1]	[2]	[3]	[4]	[5]
c) The postgraduate research at our university is facing challenges	[1]	[2]	[3]	[4]	[5]
d) Universities face challenges in producing quality education.	[1]	[2]	[3]	[4]	[5]
e) There are academic dishonesty mitigation measures at our university.	[1]	[2]	[3]	[4]	[5]
f) Our university has the capacity to mitigate academic dishonesty among postgraduate students.	[1]	[2]	[3]	[4]	[5]
g) Our library provide support to postgraduate students that are doing research	[1]	[2]	[3]	[4]	[5]

5. What are your suggestions on improving library support to postgraduate students to solve academic dishonesty issue?.....

.....

.....

.....

.....

.....

Section C: Plagiarism Software in Libraries for Supporting Postgraduate Research

6. What is your opinion regarding the use of plagiarism software in universities with reference to postgraduate research?

.....

7. The table below contains statements on the usage of antiplagiarism software to help postgraduate students achieve academic integrity. Kindly provide a rating expressing the extent you agree with each statement provided. *1 = to a very small extent (VSE), 2 = to a small extent (SE), 3 = to a moderate extent (ME), 4 = to large extent (LE), 5 = to a very large extent (VLE).*

Statement on plagiarism software in libraries	To a very small extent (1)	to a small extent (2)	To a moderate extent (3)	To large extent (4)	To a very large extent (5)
a) There are benefits of using antiplagiarism software to mitigate academic dishonesty.	[1]	[2]	[3]	[4]	[5]
b) Our library has made it easy to access the anti-plagiarism software.	[1]	[2]	[3]	[4]	[5]
c) The library staff in our university assists postgraduate students to use the anti-plagiarism software.	[1]	[2]	[3]	[4]	[5]
d) My university has put up anti-plagiarism software to be used by postgraduate students.	[1]	[2]	[3]	[4]	[5]
e) My university has put up antiplagiarism software to curb academic dishonesty.	[1]	[2]	[3]	[4]	[5]
f) Universities should teach postgraduate students how to use anti-plagiarism software.	[1]	[2]	[3]	[4]	[5]

g) Postgraduate students can maintain academic integrity without using antiplagiarism software.	[1]	[2]	[3]	[4]	[5]
---	-----	-----	-----	-----	-----

8. What do you think universities should do to improve the use of anti-plagiarism software to mitigate academic dishonesty among postgraduate students?

.....

.....

.....

.....

.....

.....

Section D: Training in Scholarly Writing in Libraries in Facilitating Postgraduate Research

9. What approaches does your university library use for scholarly training?

.....

.....

.....

.....

.....

10. How would you rate the scholarly training offered by your university library as effective in mitigating academic dishonesty?

Very low Low Moderate High

Very high

11. How would you rate the scholarly training offered by your university library accessible to postgraduate students?

Very low Low Moderate High

Very high

12. What is your position on what universities should do to improve their scholarly writing training to end academic dishonesty?

.....

.....

.....

.....

.....

Section E: Library Academic Integrity Policy Guidelines in Enhancing Postgraduate Research

13. The table below contains statements on the library's academic integrity policy guidelines for enhancing postgraduate research. Kindly provide a rating expressing the extent you agree with each statement provided. *1 = to a very small extent (VSE), 2 = to a small extent (SE), 3 = to a moderate extent (ME), 4 = to large extent (LE), 5 = to a very large extent (VLE).*

Statement on library academic integrity policy	To a very small extent (1)	to a small extent (2)	To a moderate extent (3)	To large extent (4)	To a very large extent (5)
h. Academic integrity policies in universities are followed while reviewing postgraduate research.	[1]	[2]	[3]	[4]	[5]
i. Our university has put in place academic integrity policies that postgraduates follow.	[1]	[2]	[3]	[4]	[5]
j. There are academic integrity policies put in place in our university to ensure quality postgraduate research.	[1]	[2]	[3]	[4]	[5]
k. Our university has academic policy guidelines that are effective in mitigating academic dishonesty in postgraduate research.	[1]	[2]	[3]	[4]	[5]

l. Universities having regular review of academic policy guidelines can help mitigate academic dishonesty.	[1]	[2]	[3]	[4]	[5]
m. Our university has a platform to collect ideas to help improve academic policy guidelines from stakeholders.	[1]	[2]	[3]	[4]	[5]

14. What do you think universities should do to improve their academic policy guidelines?

.....

.....

.....

.....

Section F: The Creation of Awareness by the Library on Academic Honesty to Support Postgraduate Research

15. What approaches does your university library apply to create awareness of academic honesty?

.....

.....

.....

.....

16. The table below contains statements on the library's academic integrity policy guidelines for enhancing postgraduate research. Kindly provide a rating expressing the extent you agree with each statement provided. *1 = to a very small extent (VSE), 2 = to a small extent (SE), 3 = to a moderate extent (ME), 4 = to large extent (LE), 5 = to a very large extent (VLE).*

Statements of the creation of awareness by the library	To a very small extent (1)	to a small extent (2)	To a moderate extent (3)	To large extent (4)	To a very large extent (5)
g) My university library holds postgraduate students' awareness programs every semester.	[1]	[2]	[3]	[4]	[5]
h) Our university has platforms to collect ideas from students on programs they can require to be emphasized on	[1]	[2]	[3]	[4]	[5]
i) University students understand the importance of the academic awareness-creation methods.	[1]	[2]	[3]	[4]	[5]
j) My university provide easy access to the academic honesty awareness creation programs.	[1]	[2]	[3]	[4]	[5]
k) My university has put in place academic honesty awareness that ensure effective mitigation academic dishonesty.	[1]	[2]	[3]	[4]	[5]
l) Our university provide inspiration for students to participate in awareness programs.	[1]	[2]	[3]	[4]	[5]

17. What do you think universities should do to improve their academic honesty awareness creation among their postgraduate students?

.....

.....

.....

.....

.....

Thank you for your cooperation and time.

Appendix III: Interview Guide for Directors of Postgraduate Studies

Section A: Demographic Information

1. For how long have you served as a director of postgraduate studies?

Section B: Postgraduate Research at Universities

1. Provide your comments on how rampant academic dishonesty is among postgraduate students
2. In what ways is academic dishonesty a challenge to postgraduate research?
3. What do you think universities should do to address the challenges facing postgraduate research?
4. What would you say are the efforts that universities have made to produce quality research through their postgraduate students?

Section C: Plagiarism Software in Libraries for Supporting Postgraduate Research

5. How would you describe the ease with which postgraduate students access the anti-plagiarism software provided by your university library?
6. Explain how the staff in the various departments offering postgraduate studies ensure postgraduate students are accessing and using the anti-plagiarism software provided by your university library.
7. How does anti-plagiarism software help in mitigating academic dishonesty in postgraduate research?
8. What would you wish to be addressed regarding the anti-plagiarism software to effectively address academic honesty in postgraduate research at your university?

Section D: Training in Scholarly Writing in Libraries in Facilitating Postgraduate Research

9. What would you say about the effectiveness of the scholarly training offered by your university library to mitigate academic dishonesty based on the research projects submitted to your university by postgraduate students?
10. What measures has your university put in place to make scholarly training accessible to postgraduate students?
11. What is your role as the director of postgraduate studies at your university in scholarly writing training offered by library to postgraduate students?

Section E: Library Academic Integrity Policy Guidelines in Enhancing Postgraduate Research

12. What can you say about the effectiveness of the policy guidelines in your university in mitigating academic dishonesty in postgraduate research?
13. In what ways do you ensure that postgraduate students follow the academic integrity policies in your university?

Section F: The Creation of Awareness by the Library on Academic Honesty to Support Postgraduate Research

14. How would you describe the student's knowledge about the existence of academic honesty measures in your university library?
15. What would you say about the effectiveness of academic honesty awareness creation in mitigating academic dishonesty in your university?
16. What is your role as the director of postgraduate studies in ensuring that students in your department are aware of academic honesty measures and programs in your university?

Appendix IV: Librarian Interview Guide

Section A: Background

1. How long have you worked as a librarian?
2. Provide your comments on how rampant academic dishonesty is among postgraduate students
3. Apart from plagiarism and copying, in what other ways do postgraduate students practice academic dishonesty?
4. What are the mitigation measures that your library employs to counter academic dishonesty among postgraduate students?
5. Explain how your university plan to deal with artificial intelligence e.g. Chatgpt, quilibot and others towards curbing academic dishonesty in postgraduate research?

Section B: Postgraduate Research at Universities

6. In what ways does the library in your university assist postgraduate students in doing their research?

Section C: Plagiarism Software in Libraries for Supporting Postgraduate Research

7. Which anti-plagiarism software does your library use?
8. What complaints do your students give about the use of your university's anti-plagiarism software?

Section D: Training in Scholarly Writing in Libraries in Facilitating

Postgraduate Research

9. Explain how your university library train postgraduate in scholarly training?
10. Describe the scope of the scholarly training offered to postgraduate students by your library

11. If you were to amend the scholarly training module in your university, what would change?
12. How would you describe the attendance of postgraduate students in your university in your scholarly writing sessions?

Section E: Library Academic Integrity Policy Guidelines in Enhancing Postgraduate Research

13. What aspects are covered in your university's academic integrity policy guidelines?
14. Based on the research presented by postgraduate students in your university in the last five years, how would you describe their adherence to the academic integrity policy guidelines?
15. Provide your comments on how the academic integrity policy guidelines in your university helps postgraduate students present original research?
16. If you were to amend the academic integrity policy guidelines in your university, what would change?
17. In what ways do you promote adherence to the integrity policy guidelines at your university?

Section F: The Creation of Awareness by the Library on Academic Honesty to Support Postgraduate Research

18. What awareness creation forums/ avenues and methods does your university have for sensitizing students on academic honesty?
19. How would you describe the efficacy of awareness creation approaches regarding academic honesty used by your university to improve postgraduate research?

Thank you for your cooperation and time

Appendix IV: KeMU's Introduction Letter from Director of postgraduate



KENYA METHODIST UNIVERSITY

P. O. Box 267 Meru - 60200, Kenya
Tel: 254-064-30301/31229/30367/31171

Fax: 254-64-30162
Email: deanrd@kemu.ac.ke

DIRECTORATE OF POSTGRADUATE STUDIES

February 27, 2023

Commission Secretary,
National Commission for Science, Technology and Innovations,
P.O. Box 30623-00100
NAIROBI.

Dear Sir/Madam,

RE: MAINA ANTONY MWANGI – (REG. NO. ISK-3-0378-3/2021)

This is to confirm that the above named person is a bona fide student of Kenya Methodist University, in the School of Science and Technology, Department of Information Science undertaking a Master's Degree in Information Science. He is conducting research on: "Analysis of Academic Dishonesty Mitigation Measures Put in Place by Libraries for Supporting Postgraduate Research at Selected Universities in Kenya".

We confirm that his research proposal has been presented and approved by the University.

In this regard, we are requesting your office to issue a research license to enable him collect data.

Any assistance accorded to him will be appreciated.

Thank you.



Dr. John M. Muchiri (PhD)
Director, Postgraduate Studies

Cc: Dean SST
CoD, IS
Program Coordinator - IS
Student Supervisors

Appendix VI: NACOSTI Research Permit

REPUBLIC OF KENYA
NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION

Ref No: 375353

RESEARCH LICENSE



This is to Certify that Mr. Antony Mwangi Maina of Kenya Methodist University, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Embu, Meru on the topic: ANALYSIS OF ACADEMIC DISHONESTY MITIGATION MEASURES PUT IN PLACE BY LIBRARIES FOR SUPPORTING POST GRADUATE RESEARCH AT SELECTED UNIVERSITIES IN KENYA for the period ending : 09/March/2024.

License No: NACOSTI/P/23/24323

375353
Applicant Identification Number

Director General
NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION

Verification QR Code



NOTE: This is a computer generated License. To verify the authenticity of this document, Scan the QR Code using QR scanner application.

See overleaf for conditions