

**POSTGRADUATE STUDENTS PERCEPTION AND ATTITUDE ON
ANTIPLAGIARISM SOFTWARE USE TO CONTROL PLAGIARISM IN JKUAT
AND UNITED STATES INTERNATIONAL UNIVERSITY-AFRICA, KENYA**

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DECLARATION

I declare that this project is my original work and has not been presented in any other university/institution for consideration of any certification. This research project has been complemented by referenced sources duly acknowledged. Where text, data (including spoken words), graphics, pictures or tables have been borrowed from other sources, including the internet, these are specifically accredited and references cited using the current APA system and in accordance with antiplagiarism regulations.

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Supervisor's declaration: This project has been submitted for appraisal with my approval as University Supervisor.

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DEDICATION

I dedicate this work to my wife Jedidah, and my children Victor, Rodgers and Brandon for their patience and understanding while I was undertaking my studies. I also honour my parents the late Joseph Mutiso Munywoki and Tabitha Moli Mutiso who sacrificed a lot to see me through education with many difficulties.

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ABBREVIATIONS AND ACRONYMS

ANU	-	Australian National University
APT	-	Anti-plagiarism Tool
CUE	-	Commission for University Education
HEIs	-	Higher Education Institutions
IBM	-	International Business Machines
ICT	-	Information Technology and Communication
IL	-	Information Literacy
IS	-	Information systems
JKUAT	-	Jomo Kenyatta University of Agriculture and Technology
NACOSTI	-	National Commission for Science, Technology and Innovation
QAA	-	Quality Assurance Agency
SPSS	-	Statistical Package for the Social Sciences
USIU-A	-	United States International University Africa

ABSTRACT

Anti-plagiarism software use to control plagiarism by universities is on the increase in the developing countries including Kenya. The study sampled JKUAT and USIU-A universities. The objectives of the study were; to describe the types of plagiarism that postgraduate students are aware of, to identify postgraduate students' perceptions use of anti-plagiarism software to control plagiarism, to justify postgraduate students' attitudes on anti-plagiarism software to control of plagiarism and to relate postgraduate students' level of awareness of plagiarism control to institutional plagiarism policy. Documented research showed that uncertainty and resentment arose due to suspicions of using the software as a deterrent and punitive measure for plagiarism. Data collected and analyzed within the sampled universities indicated that some students were positive about use of plagiarism control software while a few were still negative about its implementation. This study established that, there has not been adequate research on students' perception and attitude towards anti-plagiarism software use to control plagiarism among postgraduate students justifying the undertaking of the research. The study findings can help to address issues related to students' perception and attitude towards plagiarism control through use of a software. The beneficiaries of the study are university policy makers, lecturers supervising students and the students themselves. This study adopted both qualitative and quantitative research designs. It utilized purposive sampling method and applied a descriptive cross-sectional study design. A Cronbach's alpha test was carried out to test and determine the reliability of the research instruments which yielded a .807 score. Data was coded and entered in Statistical Computer Package, IBM SPSS software which was also used to check and clean errors or discrepancies. The data was analyzed using descriptive statistics to obtain means, frequencies and percentages. This study concluded that perceptions and attitudes on anti-plagiarism software use among postgraduate students can only be managed through human intervention and not by use of text matching software.

CHAPTER ONE

INTRODUCTION AND BACKGROUND TO THE STUDY

1.0 Introduction

This chapter covers the background to the study, the statement of the problem, the purpose of the study, research objectives and research questions. It also highlights the significance of the study, limitation and delimitation, assumptions, theoretical framework, conceptual framework and definition of operational terms.

1.1 Background to the Study

Anti-plagiarism software are text matching computer applications used in aiding the control of plagiarism. They are being applied in Kenyan universities to gauge text originality of research being conducted by postgraduate students and therefore aid in controlling acts of plagiarism. Supervisors cannot be able to effectively detect acts of plagiarism owing to the availability of massive online information resources.

Anti-plagiarism software aid in control of plagiarism by matching texts if they are copied directly from online sources. The similarity index of copied texts can range from 0-100% depending on the level of direct copying. Similarity index percentage is indicated per source but an overall similarity index is also indicated for the whole document submitted to any plagiarism software (Turnitin.com, 2019, Plagiarism Checker, 2019, SafeAssign.com, 2019). Depending on the university plagiarism control policy, the research supervisors are able to judge if plagiarism has taken place or not after attaining a submission report of the software.

This study sought to establish postgraduate students' perceptions and attitudes on the subjection of their research documents to antiplagiarism software used to control plagiarism. Jomo Kenyatta University of Agriculture and Technology (JKUAT) and the United States International University-Africa (USIU-A) were sampled for the study. By the time this study was carried out, JKUAT was using Plagiarism Checker which is an open source antiplagiarism software while USIU-A was using SafeAssign which is a commercial antiplagiarism software. JKUAT which is a public university had an estimated postgraduate student population of 3730 who had submitted plagiarism reports (JKUAT, 2019) while USIU-A had 1295 students conducting research.

Bailey and Challen (2015) established that there was a mixed perception of the use of antiplagiarism software among university students. Although the use of antiplagiarism software in institutions of higher learning were being implemented as an effective measure to combat plagiarism, Nunez (2011) found out that most universities did not establish students' perception and attitudes towards the software used to counter plagiarism. Antiplagiarism software solutions had been subscribed by universities with a minimal study on students' perception and attitudes (Sutherland-Smith & Carr, 2005). Bailey and Challen (2015) concede that there was a negative emotion related to initial fears of the unknown of technology before using the antiplagiarism software. Rop (2017) reported that students at the University of Nairobi had a 59% positive perception towards the use of Turnitin as antiplagiarism software compared to the lecturers who had a more positive perception of 82%. This study established postgraduate students' perception and attitude towards the use of antiplagiarism software to abate plagiarism in Kenyan universities. As Universities embarked on efforts to introduce the use of software to abate

plagiarism there was a tendency to neglect how students feel about their work being systematically screened for plagiarism since the systems lacked human judgement (Dahl, 2007).

Since the introduction of digital information resources in the early 1980s, there has been an increased demand to access information in electronic format. This was accelerated by the discovery of the internet in the 1950s, which enabled the remote hosting, transmission and access to information in the digital format (Mowery & Simcoe, 2001).

The advancement in computer hardware and software has made it easier to copy and repackage information in disregard of copyright requirements. Mills (2009) hastens to add that research on graduate student s' understanding of, and engagement in academic dishonesty is needed to address issues surrounding the phenomenon of academic dishonesty among graduate students in higher education. Plagiarism has become a common practice in institutions of higher learning, prompting policy makers to acquire antiplagiarism software to curb the practice (Hu & Sun, 2017). Factors such as the access of internet, shortage of books, student's laziness and poor academic writing skills play a key role in students' plagiarism at universities (Anney & Mosha, 2015). The antiplagiarism software can also assist to enforce academic integrity among students at universities with the increased use and hosting of online digital information (Risque, et al., 2013).

According to Thomas and Sassi as cited by Urbanovic, Vasiljeviene, Zaleniene, and Gudeliene (2015), the digital age poses new challenges never seen before, owing to the availability of information in digital format that has made it easier for students to copy

and paste thus engaging in academic plagiarism. Academic dishonesty discredits the names and reputations of institutions where it happens through the detraction of their values. It also hinders competitiveness as it paints a negative image of the institution in the society.

The easy access and repackaging of digital information resources have resulted in rampant plagiarism. Drinan and Gallant (2010) reiterate that attention to plagiarism in American higher education institutions has increased due to technological change that has made it easier to plagiarize, but also easier to detect. In support of this, Sutherland-Smith and Carr (2005) noted that antiplagiarism software has been successfully marketed to universities as a means through which to detect and deter plagiarism. The antiplagiarism software is widely used by institutions of higher learning in the US, Europe and Australia to detect the presence of plagiarism in research documents presented by students and researchers such as prospective authors (Dias & Bastos, 2013; Stabingisa, Sarlauskienea & Cepaitiene, 2013). A survey conducted at 80 British Universities by The Telegraph established that academic misconduct has been on the rise across the country. More than 17,000 incidents of cheating were recorded by universities in the 2009/2010 academic year (Barrett, 2011).

Academic dishonesty has also been going on in African Universities. Idiegbeyan-ose, Nkiko and Ifeakachuku (2016) discovered that as postgraduate students' awareness and use of plagiarism in the Covent University in Nigeria increased the positive perception of plagiarism also improved. The need for use of antiplagiarism software among universities in Kenya had been motivated by the demand that institutions manage students' acts of

plagiarism and meet the regulatory requirement by Commission for University Education (CUE, 2014). The speedy embrace of the antiplagiarism software among universities Muindi, Gicobi, Odhiambo, Jenje and Kemei (2013) had also been accelerated by the need to curb plagiarism owing to an overabundance of online information resources were temptations for students to plagiarize had increased. At a High Court of Kenya at Bungoma, Anne Nang'unda Kukali of Maseno University sued Mary A. Ogola of the University of Nairobi for plagiarizing her master's thesis (Kenyalaw.org, 2010). Munene (2016) has reported that the Kenyan Universities academic standards are falling short of the expected quality due to plagiarism.

Muindi et al (2013) interviewed local university vice-chancellors on the issue of academic fraud and use of antiplagiarism software to curb the vice and established the following:

At Kenyatta University, the Vice-Chancellor reported that the university had introduced antiplagiarism software to ensure that students work is original and those students who cheated in their proposals, theses and projects had been caught. The software matches papers submitted by students with online databases. At the University of Nairobi, it was reported that the institution revised its rules and regulations regarding plagiarism and developed an online repository of all works done by the students for the public. The Masinde Muliro University had come up with strategies to counter students' plagiarism. Going by the Vice Chancellors reporting, the use of antiplagiarism software had gained momentum in Kenyan universities.

Rop (2017) noted that in order to effectively apply the use of Turnitin software at the University of Nairobi, it was important to understand its usefulness, ease of use and perceptions of users. Muindi, et al (2013) found out that:

At Maseno University, it was reported that strategic measures had been put in place to curb cases of students earning degrees they had not worked for where the level of supervision was enhanced. Reports from the University of Kabianga indicated that the institution had never

experienced a situation where any of its students had "bought" a degree, adding that stringent measures were being used to monitor such malpractice. At Pwani University, reports indicated that the university had a control system that did not allow students to buy project or thesis papers from commercial writers.

This research established the perception and attitudes of postgraduate students towards antiplagiarism software use to control plagiarism. According to Mwangi and Otanga, (2015), perception, involves assigning meaning to cognitively processed information influencing behaviour and attitude formation toward an object. Perception is described as a belief or opinion, often held by many people and based on how things seem (dictionary.cambridge.org, 2018). Attitude is said to be a feeling or opinion about something or someone, or a way of behaving that is reinforced by perception (dictionary.cambridge.org, 2018). People adjust their perceptions and attitudes given time, Carpenter, Boster & Andrews, (2013) reported that Functional Attitude Theory involve functions of adjustment, ego defense, value expression, and knowledge.

1.1.1 Institutional Choice of Antiplagiarism Software

There are very many types of antiplagiarism software in use today to abate plagiarism. Some are commercial in nature while others are open source. After a logical comparative study of several antiplagiarism software, Ali and Farooqi (2014) concluded that there is no software that can detect or prove that a document has been plagiarized 100%. This owes to the fact that each software and tool has its advantages and limitations. The top listed free antiplagiarism software by search engines include Plagiarisma.Net, Viper, The Plagiarism Checker, DupliChecker, PlagTracker, SmallSeoTools and Plagiarism Checker (Aceh, 2013). User needs, as well as the financial strength of an institution, can dictate the choice of antiplagiarism software as well. Some of the commercial software have a

high subscription cost and therefore need a reasonable budgetary allocation in addition to allocating funds for annual subscription.

The plagiarism tools assist the researchers and the supervisors to identify quoted texts to rectify the citations because they show the original content (Shankar & Ramasesh 2015). Antiplagiarism software also helps in reducing the percentage of similar content, thus avoiding plagiarism and improving originality of the research.

1.1.2 Antiplagiarism Software in use at JKUAT and USIU-Africa

Many computer programs exist to today for checking text similarity or plagiarism in scientific papers and essays of research being undertaken at universities. Some of which are free, while others are commercially available (Nahas, 2017). Field research findings established that the two universities under study are using antiplagiarism software to enforce academic integrity among students. JKUAT is using Plagiarism Checker which compares submitted text documents with online databases and other electronic libraries available on the internet. Plagiarism Checker is used by university Faculty as well as students. It is available at a reasonable fee depending on the file size of a document ranging from 10,000 to 500,000 words. USIU-Africa uses SafeAssign antiplagiarism software which is an integrated plagiarism detection service offered by Blackboard. It detects unoriginal content in student papers submitted through Blackboard learning portal. Apart from acting as a plagiarism deterrent, SafeAssign is designed in a way that educates students about plagiarism and the importance of proper citation of any borrowed content (Tips.uark.edu, 2018).

1.2 Statement of the Problem

Since the introduction of text matching software, plagiarism control received a big boost. It is mandatory for students at JKUAT and USIU-A to produce a plagiarism report during and at the tail end of research before one is allowed to graduate. The control of plagiarism using software has slowed down the phase of submission of original research at the sampled universities. The perception and attitude of the postgraduate students towards plagiarism control has not been established and addressed. Plagiarism control through the use of antiplagiarism software has been reported by Kokkinaki, Demoliou and Lakovidou (2015) as a deterrent and a punitive measure. Carpenter et al (2013) reported that perception and attitude involves functions of adjustment, ego defense, value expression, and accumulation of a knowledge through experience. Postgraduate students have not been assisted to adjust to plagiarism control in the sampled universities.

1.2.1 Purpose of the Study

The purpose of this study was to conduct an assessment of perception and attitude among postgraduate students on the use of antiplagiarism software on research work to control plagiarism. Plagiarism software do not possess human judgement on students' perception and attitude towards software plagiarism control.

1.2.2 Research Objectives

- i. To describe the types of plagiarism that postgraduate students are aware of at JKUAT and USIU-A universities.
- ii. To identify postgraduate students' perceptions use of antiplagiarism software to control plagiarism at JKUAT and USIU-A universities.

- iii. To justify postgraduate students' attitudes on antiplagiarism software to control of plagiarism at JKUAT and USIU-A universities.
- iv. To relate postgraduate students' level of awareness of plagiarism control to institutional plagiarism policy at JKUAT and USIU-A universities.

1.2.3 Research Questions

This study was guided by the following research questions:

- i. What are the types of plagiarism that postgraduate students are aware of at JKUAT and USIU-A universities?
- ii. What are postgraduate students' perceptions use of antiplagiarism software to control plagiarism at JKUAT and USIU-A universities.
- iii. What are postgraduate students' attitudes on antiplagiarism software to control of plagiarism at JKUAT and USIU-A universities?
- iv. What is the relationship between postgraduate students' level of awareness of plagiarism control and the plagiarism policy at JKUAT and USIU-A universities?

1.3 The Significance of the Study

The following was the significance of this study:

- i) To establish students perceptions and attitudes towards the use of plagiarism control software.
- ii) To help university instructors and supervisors to understand students' perceptions and attitudes towards the use of antiplagiarism software to control plagiarism.
- iii) To guide revision of antiplagiarism software policy by university management by factoring the students' perceptions and attitude.

1.4 Limitation and Delimitation

This study faced a number of limitations and delimitations as stated below: -

1.4.1 Limitation

This study was focused on establishing the perceptions and attitudes of postgraduate students when they subject their documents to antiplagiarism software. Since the study was descriptive and qualitative in nature, its internal validity would have been affected by biased perceptions of the sampled respondents that may not have been generalized to the entire postgraduate population. The study was only to be conducted among postgraduate students who were subjecting their work to antiplagiarism software as they write their proposals and theses hence the findings could not represent the views of the rest of the students. Since the questionnaire was designed to measure the students' perception and attitude towards the use of antiplagiarism software and give useful information it may not have provided enough evidence of the students' actual views.

1.4.2 Delimitation

The study was not to focus on the internal architecture, suitability and operation of antiplagiarism software because the perception of postgraduate students could only be expressed when they use it to subject their work. The study was not undertaken among all the postgraduate students in the selected universities but only those who were subjecting their proposals and theses to antiplagiarism software. The findings of the study were to be drawn from the use of antiplagiarism software in the universities under investigation.

1.5 Assumptions of the Study

The study was conducted with the following basic assumptions:

- i. Postgraduate students who had completed their coursework and undertaking research were accessible to provide data and information for the study.
- ii. The respondents would reply honestly and truthfully through the research instruments.

1.6 Theoretical and Conceptual Framework

This study was guided by the following theoretical and conceptual framework: -

1.6.1 Theoretical Framework

This study sought to find out the perception and attitude of postgraduate students on use of antiplagiarism software to control plagiarism. JKUAT and USIU-A universities were sampled for the study. Attitude is defined as the "sum total of a man's inclinations and feelings, prejudice or bias, preconceived notions, ideas, fears, threats, and convictions about any specified topic" (Thurstone & Chave, 2007). Perceptions on the other hand may be interpreted as the process by which individuals experience their environment and depend, on both the person and the stimuli. Perceptual indicators are a function of both the individual and the alternatives (Lindsay & Norman, 1972). This study was anchored on Functional Attitude Theory (FAT) constructed by Katz (1960) and its application expounded by Carpenter, Boster & Andrews (2013) which proposed that attitudes were held by individuals because they found them important and integral to psychological functioning. This theory stated that the function of attitude was more important than whether the attitude was accurate or correct. At the psychological level the reasons for holding or for changing attitudes were found in the functions they perform for the individual, specifically the functions of adjustment, ego defense, value expression, and

knowledge (Carpenter, Boster & Andrews, 2013). Perception and attitude of postgraduate students towards antiplagiarism software use to control plagiarism as the variables of the study were traced and discussed through the FAT theory.

Functional Attitude Theory is related to Self-Perception Theory (SPT) which according to psychologist Bem (1972) is an account of attitude formation. SPT asserts that people develop their attitudes for the first time when they have no previous attitude of similar experience. The theory suggested that people induce attitudes without accessing internal cognition and mood states by interpreting their own overt behaviors rationally in the same way they attempt to explain others' behaviors. Attitudes are held by individuals because they are important and integral to psychological functioning. FAT theory stipulated that the function of an attitude is more important than whether the attitude is accurate or correct. A person's perception which may be positive or negative depending on one's viewpoint formation. Attitudes are anchored on intrinsic perceptions that may never be expressed by an individual. Attitudes are subject to change depending on the change in perception. This study assessed postgraduate students' perceptions and attitude to use of the antiplagiarism software to control plagiarism at JKUAT and USIU-A universities in Kenya. The students' perceived attitudes may be dictated by the independent variables; the manner in which plagiarism will be detected that will depend on the type of plagiarism software and its text matching accuracy. Perceptions of the students could be influenced by the intervening variables; students' level of awareness of academic plagiarism, individual access to antiplagiarism software, and the students' level of information literacy skills. Awareness of the contents of institutional plagiarism policy can play a central role in dictating what constitutes plagiarism. The interaction of the

students with the antiplagiarism software as they check the originality level of the research documents may be taken either way as follows:

- i) Useful learning tool (positive attitude)
- ii) Deterrent for plagiarism (negative attitude)
- iii) Academic punitive tool (negative)

However, according to Functional Attitude Theory, as proposed by Daniel Katz, the basic attitude formation and attitude change must be understood in terms of the needs they serve and that, as these motivational processes differ so too would the conditions and techniques for attitude change.

1.6.2 Conceptual Framework

Interaction of Variables on Perceptions and Attitudes to Antiplagiarism Software

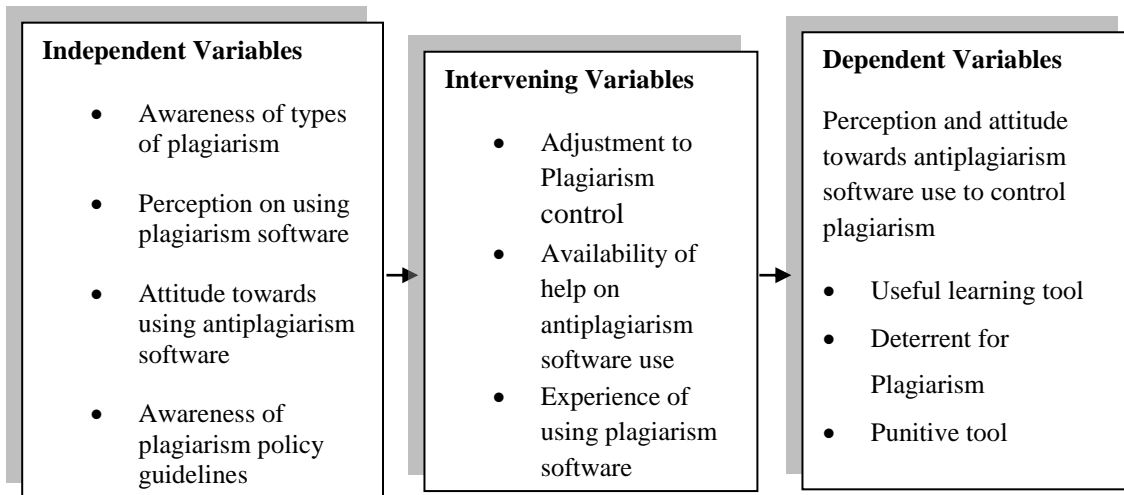


Figure 1.1: Conceptual Framework showing an interaction of variables.

Source: Researcher Conceptualization (2018)

The conceptual model presented in figure 1.1 depicts the interaction of variables pertinent to postgraduate students' perception and attitudes to antiplagiarism software implementation in universities. The conceptual framework above identifies the

independent variables as students' perception of using antiplagiarism software to control plagiarism, attitude towards using antiplagiarism software, and awareness of the plagiarism policy guidelines of the university. The intervening variables of the study included postgraduate students' psychological adjustment to plagiarism control, availability of help to use plagiarism software and students' experience of using plagiarism software. The dependent variable of the study included the students' perception and attitude towards plagiarism control. The software has three dimensions of view according to the experience of students, usefulness as a learning tool, a deterrent for plagiarism and a punitive tool to committed acts of plagiarism.

The above intervening variables can play a key role during students' perception and attitude formation towards antiplagiarism use. Postgraduate student' adjustment to plagiarism control may impact on plagiarism perception and attitude towards antiplagiarism software. Availability and accessibility of plagiarism software by the students can help them to resubmit and "sanitize" their research documents. In the process, the students can gain academic writing skills such as knowledge on how to paraphrase. Inaccessibility to the software can result to development of a negative attitude to use of the software hence influence perception and attitude formation to the negative. This is a scenario that may be occasioned by unavailability of trial submission before examination. The researcher expected that the outcome variables of the study on postgraduate students' perception and attitude to antiplagiarism use would border on its usefulness as a learning tool which was a positive attitude, a deterrent for plagiarism depicting some negativity to use of the software, academic punitive tool that may be occasioned by negative perception and attitude formation before and after interaction

with antiplagiarism software. When students subject their documents to antiplagiarism software, their perception on the use of the software may be negative or positive. This can happen before and after getting the similarity index results or simply the software text similarity download. This study sought to establish this state of perception as indicated in the conceptual framework in figure 1.1 above.

1.7 Operational Definitions of Terms

Academic dishonesty: Any type of cheating that occurs in relation to a formal academic exercise including plagiarism by adoption or reproduction of ideas or words or statements of another person without due acknowledgment (Berkeley City College, 2017).

Open source software: Open source software is a computer program for which the source code is made available without charge by the owner or licensor, usually via the Internet, to encourage the rapid development of a more useful and bug-free product through open peer review (Reitz, 2009).

Plagiarism: Derived from the Latin *plagiarius*, meaning "kidnapper", plagiarism is copying or closely imitating the work of another writer, composer, etc., without permission and with the intention of passing the results off as original work (Reitz, 2009).

SafeAssign: Safe Assign is a plagiarism prevention service, offered by Blackboard which helps educators prevent plagiarism by detecting unoriginal content in student papers. Apart from being a text-matching software, it can help students on how to do proper attribution of any borrowed content. (Cod.edu, 2018).

Sanitization of proposals and theses: Paraphrasing documents with high plagiarism level or similarity index to meet the plagiarism policy requirements.

Similarity index: Similarity index is a basic indication of how much text contained in a is matched to other sources in the antiplagiarism software

repositories. This percentage represents a raw amount of matching done against the repositories selected (Moodle.eduhk.hk, 2017).

Text matching software: Software that searches the Web for duplicate textual content. It may be a stand-alone program installed in the user's computer or a function of a website, such as Turnitin which is an originality checking and plagiarism prevention service that checks your writing for citation mistakes or inappropriate copying (Turnitin.com, 2017).

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1 Introduction

This chapter covers the background to the literature review on perception and attitude towards antiplagiarism use by postgraduate students. The review is broken down into specific objectives of the study on awareness of types of plagiarism, postgraduate students' awareness of the role of antiplagiarism software, postgraduate students' perceptions of antiplagiarism software, and awareness of institutional plagiarism policy.

The purpose of the literature review was to provide highlight the research that has been undertaken related to the study and identify other related issues that have not been adequately covered. At the end of the chapter, the research gap is identified justifying the undertaking of this study.

2.2 Plagiarism Control Measures

Evering and Moorman (2012) reported that easy access to massive amounts of information makes policing for ownership of ideas nearly impossible, this situation has caused the current millennial generation who sees knowledge ownership, acquisition, and distribution as a public good for free access. To ensure scholarly excellence and ethical practices in teaching, learning, research and consultancy, it is important for universities to be committed to curbing plagiarism (Magoha, 2013). Consequently, this has contributed to the need for antiplagiarism software to prevent, detect, and deter plagiarism in order to address various interrelated academic malpractices in universities and institutions of higher learning (Kokkinaki, Demoliou & Lakovidou, 2015).

Universities across the world have formulated academic policies that are meant to guide students on how to use information responsibly as they go through their coursework while at the same time embarking on research as they near completion of their postgraduate programmes. This requires them to write proposals and theses in their area of specialization and interest. Checking for plagiarism through the use of antiplagiarism software has been found to be punitive rather than for enhancing the students' academic well-being (Kokkinaki, Demoliou & Lakovidou, 2015).

Scholars writing on plagiarism prevention argue that students would need guidance on how to apply the authors' ideas in their work since antiplagiarism software detects similarity, but does not help the students with techniques on how to cite and generate references to avoid plagiarism. Zwagerman as cited by Thompsett and Ahluwalia (2010) suggests that implementation of plagiarism software fosters a climate of fear amongst students. Pressures from educational, regulatory bodies such as the Quality Assurance Agency (QAA) for United Kingdom (UK) and Commission for University Education (CUE) in Kenya have contributed to the use of technology to counter academic cheating that has become prevalent in form of cut and paste among students owing to the increased number of online literature. In support of the above statement Thompsett and Ahluwalia (2010) adds that Quality Assurance Agency (QAA) in the United Kingdom has forced Universities and Higher Education Institutions (HEIs) to have effective measures set in place that deal with breaches in assessment regulations especially offenses relating to plagiarism.

The need to counter acts of plagiarism has led to software architects and engineers to come up with software to help detect plagiarism. Such antiplagiarism software includes iThenticate, SafeAssign, StrikePlagiarism, Turnitin and Urkund. The choice of antiplagiarism software depends on institutional needs and the education management platform software in place. The software subscription cost is an additional factor to consider. Turnitin is used by over 1.6 million instructors at more than 10,000 institutions in 135 countries, making it the world's leading cloud-based software for evaluating student work (Turnitin.com. 2015, Stephens & Wangaard, 2016).

2.3 Awareness of Types of Plagiarism

Razera (2011) suggested that with the advent of information technology, information has become easily accessible to everyone from everywhere through the internet which makes the issue of plagiarism even more challenging to the academic body. Plagiarism is the act of using other people's creative ideas without giving credit to them as the originators of the ideas. However, the same technology has made it possible to create some software tools to counter plagiarism.

A research conducted by Idiegbeyan-ose et al (2016) revealed that on the average, the level of awareness of plagiarism among postgraduate students was related to the level of training which influenced their level of awareness. Writing skills and the knowledge of what constitutes plagiarism is also an awareness factor to be considered. The study also revealed a significant relationship between the increase of awareness and improved positive perception of plagiarism. However, it was noted that there was a significant difference in perception of plagiarism among postgraduate students across different

institutions. Madray (2007) clearly stated that most students want to complete their research assignments honestly, but find it difficult simply because they are clueless on how to accomplish it. Conducting research is an information literacy skills-based activity that requires the ability to find, analyze, and synthesize information as well as applying the rules of grammar and proper citing. Stapleton (2012) reported that one class which was not aware that their assignments would be subjected to antiplagiarism software had significantly higher rates of matching text and intentional plagiarism than another class which was aware of the antiplagiarism software. Madray (2007) concludes that the concept of interpreting and implementing the rules of plagiarism that entails harnessing information from varied sources and kneading it into one's own research writing is a daunting task for most students who are not endowed with adequate research skills.

Ramzan, Ebrahimi and Mahdinejad (2012) carried out research on plagiarism awareness among students in universities and discovered that there was a low level of awareness of students on plagiarism and university plagiarism policies and processes. The findings also revealed that most of the student respondents did not understand what plagiarism is with some admitting that they have intentionally plagiarized written materials. Kim and Wise (2009) stated that plagiarism awareness is the level of students' awareness or knowledge about what constitutes plagiarism. Kim and Wise further suggested that perception and attitude on plagiarism can be expressed in three subsets that include; moral judgment, belief (neutralization), and plagiarism perception.

2.4 Types of Plagiarism

Research findings by Janssens and Tummers (2015) have shown that despite the availability of software detection tools students still lack awareness of what plagiarism

entails. There are many forms of plagiarism by students that have been detected and identified by faculty members and librarians in universities. Shankar and Ramasesh (2013) cited six types of plagiarism as major in the academic world; full or blatant plagiarism, partial or potluck paper plagiarism, minimal or word switch plagiarism, mosaic (labour of laziness), self-stealing and ghost writer.

According to Ajelabi (2013), full or blatant plagiarism occurs when the writer changes nothing from the original source and his/her lacks originality. Lack of originality negates the purpose of research. Similarly, Evangel University (2017) identified blatant plagiarism as an act in which the author attempts to make an impression on the instructor or readers of one's work for a grade or acclaim into believing that one is totally responsible for the intellectual content of the work.

Castro and Sam (2012) stated that partial or potluck paper plagiarism takes place when the author blends ideas from several sources with one's original inspirations that are "Panel Bitten" to fit the expression that is needed to be conveyed. The American University of Beirut (2016) said that Potluck paper plagiarism takes place when the composer of text tries to disguise plagiarism by copying from several different sources, modifying the sentences to make them fit together while retaining most of the original phrasing.

Strittmatter and Bratton (2014) describes minimal or word switch plagiarism as the process that involves selection of key words that the author needs to adopt by keenly paraphrasing the original idea as expressed from the sources in a different way. On the other hand, Gupta, Vani, and Leema (2016) concluded that plagiarisms are of different

types and the approach of detection also varies accordingly, such as copy and paste plagiarism, word switch plagiarism, style plagiarism, idea plagiarism, metaphor plagiarism and cross-lingual plagiarisms.

Mosaic (Labour of laziness) practice entails the writer paraphrasing most of his/her paper from other sources and tries to fit them together so as to make sense rather than concentrating on preparing his/her own phrase (Shankar & Ramasesh, 2014). Direct Paraphrasing or “The Labour of Laziness” according to Das (2016) involves the writer Paraphrasing from other sources instead of doing the same effort on original work.

When authors plagiarize their own work without acknowledging themselves, they are said to engage in self-stealing. Self-Plagiarism is defined as a type of plagiarism in which the writer republishes a work in its entirety or reuses portions of a previously written text while authoring a new work (Manalu, 2013). Similarly, the U.S. Department of Health and Human Services (2011) argues that “the idea of self-plagiarism seems almost ridiculous, but it is a very real issue that has consequences”. The act of self-plagiarism entails the author using his/her own previous work in another context without stating that it was used previously.

Ghost writing as plagiarism involves submission of a research topic to unknown person ‘Ghost’ who purports to have the necessary writing skills in a commercial agreement (Sivasubramaniam, Kostelidou & Ramachandran 2016). Ghostwriters are authors who are hired to compose literary or journalistic works, speeches or other texts and the intellectual input credited to another person (Zheng & Cheng, 2015).

Sztaki (2013) identified multilingual (Translated Plagiarism) or cross-lingual plagiarism as the translation of someone else's work without giving credit to the original author. Sousa-Silva (2014) relocates that, antiplagiarism software that has the multilingual plagiarism detection capability compares the translations of the same original to find instances of plagiarism among the translated texts. An increase in translated plagiarism from Internet-savvy students who are proficient in English has prompted one of the highly used antiplagiarism software Turnitin to introduce automated translation technology. According to iParadigms LLC (2012), Turnitin has the ability to identify potentially plagiarized multilingual content that has been translated. One of the features of the antiplagiarism software is its ability to identify text in at least 30 different languages Fresen (2014). The author hastens to add that antiplagiarism systems that are based on text character matching will not register image files or information gathered from such documents as Google Books. In addition, Swahili, which is a language of instruction and examination at some universities within the East Africa region is not among the languages listed and recognized by antiplagiarism software available during the time this research was being undertaken. This leaves postgraduates students conducting and documenting research in 'Swahili' language with a minimal scrutiny of antiplagiarism software.

2.5 Ability to Recognize Plagiarism and the Use of Antiplagiarism Software

Risquez, O'Dwyer and Ledwith (2013) research found out that that self-reported measures of plagiarism among students are not a powerful predictor of students' ability to recognize an academic breach, or to avoid the breach through referencing. This was contrary to the general assumption held in most of the literature on plagiarism in higher

education that students who understand plagiarism and have high ethical views, do not engage in plagiaristic behaviour (Colella-Sandercock, 2016). Students enrolled in higher education programs fall into the plagiarism trap quite regularly by plagiarizing without being fully aware of their infringements, academic integrity or knowledge of how it can be avoided (Janssens & Tummers (2015). Instructors request for antiplagiarism software reports from students when conducting research for proposals and theses. Ahmad and Ullah (2015) reported that there are significant differences in awareness and use of antiplagiarism software among university students on the basis of gender, discipline, level and stage of the study. Ahmad and Ullah (2015) also report that one of the reasons attributed to the prevalence of plagiarism among students was a lack of familiarity with the proper ways of quoting, paraphrasing, citing and referencing.

2.6 Postgraduate Students' Perceptions of Antiplagiarism Software

Idiegbeyan-ose et al (2016) defined human perception in relation to information processing as the act of recognizing, organizing and interpreting sensory information. He added that perception deals with the human senses and generate signals from the environment through the five sense organs of; sight, hearing, touch, smell and taste. A lot of research has been conducted on attitudinal variables affecting the utility of a constant while perceptions variables are ignored that may indeed affect the decision-making process (Bahamonde-Birke, Kunert, Link & Ortuzar, 2017). Some studies treat perception and attitude as one and the same subject while in actual sense, perceptual experiences precede and influence attitude formation (Tauber, 2014).

2.6.1 Determinants of Negative/Positive Perceptions to Antiplagiarism Software Use

The requirement for postgraduate students to check originality or plagiarism level of proposals and theses using antiplagiarism software is on the increase at universities in Kenya. Muindi et al (2013) reported that the Education Cabinet Secretary in Kenya directed university chiefs to tighten supervision of graduate studies following revelations that students are buying completed theses and projects. At the universities where the use of plagiarism software had been implemented, postgraduate students were likely to develop some kind of perception and attitude towards the software use because it had been made a requirement to check research work for plagiarism prior to marking. The literature reviewed indicated that the universities under study were already using antiplagiarism software.

At JKUAT, postgraduate students were required to subject research work to Plagiarism Checker software while those at USIU-Africa were using SafeAssign that is integrated into Blackboard learning module. Documented research had established that students had developed different perceptions towards antiplagiarism use. Bailey and Challen (2015), reported that Turnitin antiplagiarism software was considered unreliable by students because it did not identify all the sources used in a plagiarized assignment submitted for testing. Similarly, it was revealed that the originality report showed less matched text on the assignment draft than expected. In addition, the same findings indicated that a group of students were less positive as a result of insecurity about how to quote correctly. Ajelabi (2013) research found out that students were unhappy with the antiplagiarism software in use because it did not encourage paraphrasing and use of quotation marks. Ali et al (2011) found out that, it required more efforts for instructors to detect plagiarism on

works done by expert plagiarist students and most of the times plagiarized documents cannot be detected at all.

Fear and Resentment of antiplagiarism software had risen among students due to increased demand to submit documents to antiplagiarism software before marking. Williams (2007) asserted that when we learn social authorship to the appropriate cultural conventions, we are rewarded, and when we do not, we are punished. Documented research had shown that some antiplagiarism software could produce many inaccurate reports that indicate plagiarism where it did not exist and miss plagiarism where it did. Stapleton (2012) concluded that antiplagiarism services provided a useful deterrent, but care must be taken in assessing the results as the software do not always accurately reflect the extent of intentional plagiarism. Students can be taken by surprise when the requirement for originality report is demanded towards the final stage of their research. At this point, fear of failure and eventual resentment may arise making them develop a negative perception to use of the software. The perceived role of the antiplagiarism software by the majority of students is that of “unforgiving supervisor”. Levin, as cited by Davis and Carrol (2009), described Turnitin antiplagiarism software as a “plagiarism police” by stating that students work can be categorized into original or potentially plagiarized submissions.

2.6.2 Perceptions of Antiplagiarism Software Sse as a LearningTtool

Dahl (2007) study on students’ perspectives on the use of Turnitin antiplagiarism software established that the students reacted positively towards the system. Snowball, Silvey and Do (2015) noted that better outcomes for students could be gained if

universities did not use Turnitin to catch students out, but rather as a useful tool for teaching students to improve their academic writing and develop their individual authorial voice. Bailey and Challen (2015) gathered that most students expressed their views that despite certain limitations, use of Turnitin antiplagiarism software was helpful in learning about appropriate source use, and wished it had been introduced earlier in their degree course. Students ability to avoid plagiarism through paraphrasing could be promoted through the use of antiplagiarism software by giving them individual accounts. This could help them to continuously check for plagiarism as they bring the plagiarism level of their research works down through paraphrasing. Incidences of plagiarism had been noted to decrease where students were given the individual access to plagiarism software. Similarly, their paraphrasing skills had improved and perception to the software use noted to be very positive (Stappenbelt & Rowles, 2009). The use of electronic plagiarism detection tools could be additionally used as a learning aid which, paired with focused instruction, could help the students improve their quoting and paraphrasing skills (Dodigovic, 2013).

2.6.3 Postgraduate Students' Attitudes on Antiplagiarism Software Use

In recent years, there has been a proliferation of free and commercial software applications designed to detect plagiarism from Internet sources that were being used in Educational institutions. However, their effectiveness and impact on student behaviour had been assumed rather than confirmed after the students' contact with the antiplagiarism software (Ledwith & Risquez, 2008). Pickens (2005) defined attitude as a complex combination of things we tend to call personality, beliefs, values, behaviors, and motivations. Attitudes help us define situations influencing how we behave toward an

object. In the case of students' attitude towards antiplagiarism software, it is formed after subjecting documents to the software and generating similarity index results. Formed attitude can end up being negative if the results are contrary to one's expectations or positive is if the results are favourable and meeting the plagiarism policy requirements.

Foltynek and Cech (2012) alleged that students who study abroad may experience more serious cultural shock as plagiarism may have a totally different impact. Plagiarism as a cross-cultural issue has cultural, educational, and linguistic factors that may influence the textual borrowing practices of international students (Amsberry, 2009). At some universities in Sub-Saharan Africa, the use of antiplagiarism software and citation skills are learned by majority of the students at postgraduate level. This study suggests that inexperience is likely to be a contributing factor to student plagiarism. Adiningrum and Kutieleh as cited by Chien (2014) concluded that the Western perspective that ideas can be the property of individuals may, in fact, seem strange to those who have different views that information is a public good. Based on the above scenario, it is safe to state that attitude formation towards the use of plagiarism software to abate plagiarism is a new idea in some educational institutions. In addition, Quah, Stewart and Lee (2012) reminded us that students who engage in plagiarism may lack the basic linguistic resources necessary to fully understand the role that citations and sources play within the structure of the academic argument and to successfully integrate sources within their academic writing. Ledwith and Risquez (2008) found out that students use of antiplagiarism software led to a decrease in Internet plagiarism and to lower grades being awarded in assignments, however, the students had a positive attitude towards the antiplagiarism software. The literature discussed in this subheading indicates that

students had both negative and positive attitude towards the use of antiplagiarism software to control plagiarism.

2.6.4 Perceived attitude towards antiplagiarism software similarity index results

Attitudes are personal predispositions in response to an idea or an object. A person's attitudes can be measured by asking them, however, attitudes are related to self-image and social acceptance as such in order to preserve a positive self-image, people's responses may be subject to social desirability and responses may be skewed to social acceptability (McLeod, 2009). Most strategies to combat plagiarism involve detection and deterrence which use educational approaches in an attempt to change student attitudes and behaviour (Gullifer & Tyson 2014). However, for a successful change of that person's attitudes and behaviour it is essential to understand the individual's view of the issue. Nunez (2011) stated that students reported the failure of an antiplagiarism software in use to match text that was copied verbatim. The software fetched only 71% of a document that was 100% plagiarized intentionally thereby shaping in their negative attitude formation. Sheng and Wang (2015) found out that, during similarity index detection, the antiplagiarism software which used string matching process to compare text code structure could not make an accurate detection in complex copying practice.

However, Hunt and Tompkins (2014) pointed out that scant research had been published on the comparative effectiveness of different software programs to accurately detect plagiarism in student writing. While evaluating Turnitin antiplagiarism software in terms of accuracy, relevance and usability, Larsson and Hansson (2013) concluded that the software was the most suitable and also the fastest system tested. Notwithstanding the

above findings, Ali, Abdulla and Snasel (2011) discovered that PlagScan antiplagiarism software is able to detect most of the plagiarism types either of direct copy and paste or word-switching, providing an accurate measurement of the level of plagiarized content in any given document. Sousa-Silva (2014) hastened to add that though most antiplagiarism software can detect simple and sophisticated textual borrowing; they tended to perform less well when the borrowing is obfuscated by introducing edits to the original text. Students plagiarism behaviour may be shaped by their interaction with the software as they subject their work to check originality. As illustrated in the tricomponent model below, attitudes include feelings, thoughts, and actions.

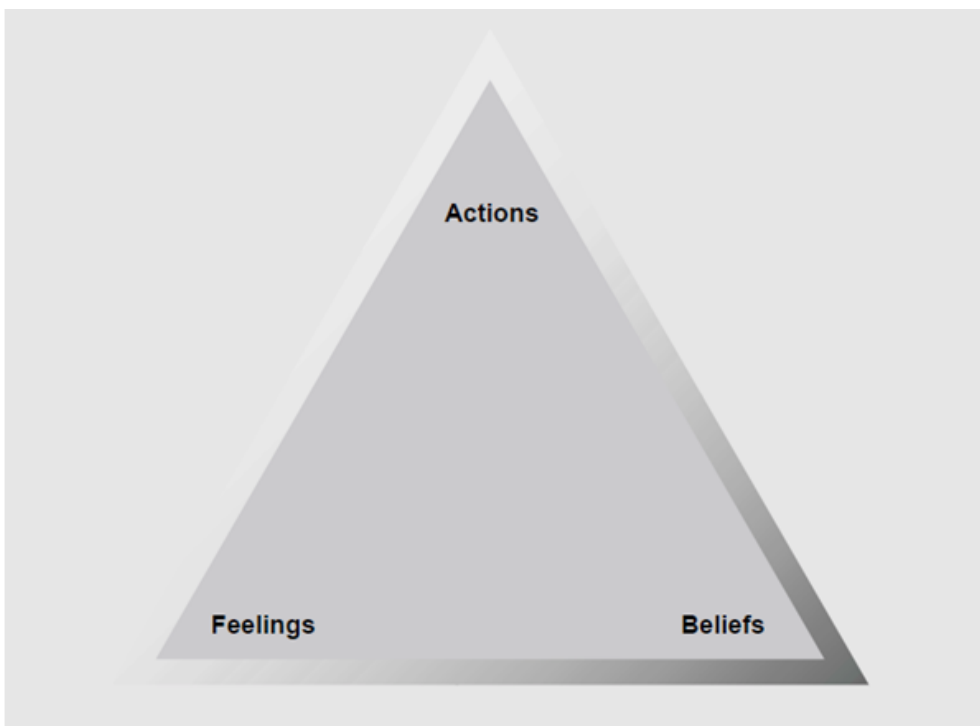


Figure 2.1: Tri-component Model of Attitudes. Source: Pickens, J. (2005)

A study conducted by Kim and Wise (2009) on the impact of using antiplagiarism tools (APT's) on students' behavior revealed that majority of students agreed that APT use affected their behavior and awareness with respect to plagiarism. Ledwith and Risquez

(2008) found out that the use of antiplagiarism software had led to a decrease in internet plagiarism and also contributed to the students having a positive attitude towards the antiplagiarism software when their grades improved.

2.7 Awareness of institutional plagiarism policy

Review of the available literature indicated that universities that had adopted the use of antiplagiarism software had documented comprehensive institutional plagiarism policies. Janssens and Tummers (2015) reported that in spite of the availability of software detection tools students still lacked awareness of what plagiarism entails. Urbanovic et al (2015) established that university documents clearly defined the policy of academic integrity, however, students' response to the details of the policy revealed that its elements and procedures are not known and equally clear to all students. The policies existed to guide students on how to use information responsibly by adhering to information ethics in relation to the use of copyrighted materials. A study conducted by Ramzan et al (2012) concluded that university students' attitudes towards plagiarism was significantly minimal and also their knowledge of the existence of the university plagiarism policy and the contents of the policy. Gullifer and Tyson (2014) reported that, students were unaware of the plagiarism policy of the university because the policies were not visible, disseminated or posted at platforms immediately accessible to all university students.

2.8 Summary of Literature Review and Gap Identification

Kim and Wise (2009) noted that, among dishonest behaviors, plagiarism has become a focal point recently as information technology advances and the use of the Internet is

commonplace. Lee (2011) advanced that despite continuing efforts by institutions of higher learning to curb rampant plagiarism practices among students, the misuse of the Internet as a tool for research and writing appeared to be growing at an overwhelming rate. In addition to this, Lee stated that more academic malpractices are becoming rampant as a new generation of students regards information in cyberspace as public goods for free downloading. Kim and Wise established that universities and other institutions of higher learning were coming up with antiplagiarism policies to curb plagiarism through the adoption of antiplagiarism policies without gathering views of all the stakeholders that includes the students' fraternity. Literature reviewed showed that postgraduate students' perception on the subjection of their work to antiplagiarism software ranged from being punished, a deterrent measure for plagiarism to the software being useful as learning tool (Sutherland-Smith & Carr, 2005). It has also been established that there was no documentary evidence for the universities within the area under study to have gathered the students' views while introducing the antiplagiarism software in use.

Though a lot of literature exists in the area of application of antiplagiarism software to abate academic cheating; minimal documented and accessible research had been conducted on the perception of students on the use of the software to control plagiarism. Most of the literature discusses the importance and efficiency of antiplagiarism software in curbing acts of plagiarism. But views on the perception and attitude towards controlling plagiarism have not been thoroughly addressed and mitigation measures suggested. Thus, gaps existed in the area of students' views on the use of the antiplagiarism software. Secondly, most of the research reviewed was from the

experiences of universities in the West and very few related studies had been done in Africa. This made it difficult for this study to generalize those findings within the region. This study was useful in filling that gap.

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

This chapter gives an outline of the research design, variables of the study, research methodology, location of the study, target population, sampling technique, research instruments, piloting, data collection and analysis techniques, logistical and ethical consideration.

3.2 Research Design

The study used a descriptive cross-sectional study design which according to Cooper and Schindler (2006) is a study concerned with finding out what, where, and how of a phenomenon. Sekaran and Bougie (2016) stated that a descriptive cross-sectional study is undertaken in order to ascertain and be able to describe the characteristics of the variables of interest in a situation, while Mugenda and Mugenda (2003) reported that descriptive cross-sectional survey is used to obtain information concerning the current status of the phenomena to describe what exists with respect to variables in a situation, by asking individuals about their perceptions, attitudes, behavior or values.

Through application of descriptive cross-sectional survey research design, the researcher was able to systematically and accurately explain the postgraduate students' perceptions on the subjection of their proposals and theses to antiplagiarism software. This research design was adopted for this study because it enabled the researcher to identify the factors which influence the perception of anti-plagiarism software. It also helped to describe the state of affairs of the problem under investigation.

3.2.1 Variables

The variables of the study included independent, intervening and dependent variables. The independent variables included Awareness of types of plagiarism, perception on using plagiarism software, attitude towards using antiplagiarism software, awareness of plagiarism policy guidelines. The proposed intervening variables that influenced antiplagiarism use were Students adjustment to plagiarism control measures in place, availability of help to students to antiplagiarism software use, experience of using plagiarism software. The dependent variables were brought about by students' perceptions and attitudes towards antiplagiarism software use and included perceptions and attitudes towards antiplagiarism software use such as software being perceived as a useful learning tool, deterrent for plagiarism and software being taken as academic punitive tool.

3.2.2 Research Methodology

This study adopted both qualitative and quantitative research design and utilized the descriptive cross-sectional study design. Questionnaires were administered through the help of key informants who were supervisors or instructors/administrators to the postgraduate students who had completed coursework and submitted proposals and collecting data for theses or projects. They were purposively sampled after scanning their research documents for plagiarism or when consulting with their supervisors or software instructors/administrators.

3.3 Location of the Study

The study was conducted in one public and one private university; Jomo Kenyatta University of Agriculture and Technology, and the United States International University Africa. The two universities compared well in terms of using Free and commercial antiplagiarism software. JKUAT was using a free standalone antiplagiarism software while USIU-A was using Safeassign which has been integrated in a learning platform. Respondents from the two institutions provided requisite data on students' views on perception and attitude towards antiplagiarism use. The mode of submission and generation of similarity index results of the software in use from the sampled universities was slightly different. However, the study was focused on the students' perceptions and attitudes towards application of antiplagiarism software to check for plagiarism.

3.4 Target Population

The target population for this study were postgraduate students in Jomo Kenyatta University of Agriculture and Technology (JKUAT) and United States International University-Africa (USIU-A) in Nairobi Kenya. A few supervisors and antiplagiarism software instructors were enjoined in the study as Key Informants. The study population for the two universities was 15 instructors and 5025 postgraduate students who had completed coursework and submitted proposals and collecting data for theses or projects, (JKUAT – 3730 students and 10 instructors/administrators, USIU [A] - 1295 Students and 5 instructors). It was this study population, which this research targeted to understand their perceptions and attitudes towards antiplagiarism software use since it was an institutional requirement to ensure that documents are plagiarism free before submission for examination. A total of 15 instructors from both universities were purposely identified

to take part in the study as key informants at a ratio of 1:2, and distributed at a ratio of 1:2 for USIU-A and JKUAT respectively.

3.5 Sampling Technique

Purposive sampling technique was used to identify the sample from the population elements who had already finished their coursework. This method was chosen since it was hard to get the sample population in one place as a group. The respondents were purposively selected due to their unavailability and accessibility in one place (Abrams 2010). Only those who were accessible and willing to take part in the study were purposely sampled and requested to participate in the study as they consulted and went to the library to patronize its services.

3.5.1 Sample Size Calculation

A total of 358 respondents in the two universities were purposively sampled to take part in the study. According to Mugenda and Mugenda (1999), from a normal distribution, the population proportion can be estimated to be:

$$n = \frac{Z^2 pq}{\alpha^2}$$

Where:

n = desired sample size if the target population is greater than 10,000

Z = value (1.96) confidence level (the standard normal deviate at the required confidence level)

p = Population proportion 0.50 (the proportion in the target population estimated to have characteristics being measured)

q = probability of failure on any one trial in binomial or geometric distribution, equal to $(1-p)$ where p is the probability of success on any one trial.

α = “sigma” or standard deviation, level of significance = 5% (the level of statistical significance set)

$$n = \frac{1.96^2 \times 0.5 \times 0.5}{0.5^2}$$

$n = 384$ (for population size greater than 10,000)

Since the postgraduate population is 5025, then the formula for $< 10,000$ will be applied as indicated:

$$nf = \frac{n}{1 + \frac{n}{N}}$$

Where nf = desired sample size when study population is $< 10,000$

n = desired sample size, when study population is $> 10,000$

N = estimate of the population size

f =frequency

$$\text{Therefore } nf = \frac{384}{1 + \frac{384}{5025}} = 358$$

A representative sample from each university is as indicated in the sampling frame.

3. 5.2 Sample Size

Table 3.1: Sample size

University name	Postgraduate students' population	Instructors	Sample size = Univ popn/Total Popn X 358
JKUAT	3730	10	$S = 3730/5040 \times 358 = 266$
USIU	1295	5	$S = 1295/5040 \times 358 = 92$
TOTAL	5025	15	358

3.6 Research Instruments

The research instruments used comprised two structured questionnaires targeting postgraduate students and key informants who were instructors interacting with antiplagiarism software (Appendix I-II). This study used structured questionnaires which were given out to the respondents at the sampled universities. The questionnaires were administered to the respondents until the desired sample size was attained. The questionnaires were preferred for the respondents owing to their geographical distribution and ease of completion at one's convenience. Each category of questionnaire was supposed to elicit data for the research objectives as explained below.

3.6.1 Questionnaire for postgraduate students (Appendix I)

This questionnaire was divided into 5 sections

Section A: Gender and programme of study

This section was meant to capture the gender distribution of the respondents by postgraduate level of study. This information would guide the research to obtain unbiased data across masters and PhD programmes and respondents' perception and attitudes towards antiplagiarism software use.

Section B: Level of awareness of types of plagiarism

This questionnaire was used to obtain data from postgraduate students about level of awareness of types of plagiarism. The questionnaire sought to find out how they learn about antiplagiarism software, types of plagiarism the students were aware of, type of documents subjected for plagiarism among proposals, theses and projects, number of

times documents were subjected to trial plagiarism check and originality percentage obtained, academic writing skills crucial in avoiding committing acts of plagiarism.

Section C: Perception on antiplagiarism use to control plagiarism

This questionnaire also sought to establish postgraduate students' perception and attitude towards plagiarism control by use of antiplagiarism software. The respondents were asked to rate the accuracy of the software they have used in detecting plagiarism, the software's ability to curb plagiarism. The respondents were asked to rate the usefulness of antiplagiarism software as a learning tool, plagiarism deterrent or report it as a punitive tool. Going by students' experience, they were asked to rate if it was necessary for supervisors to scrutinize their proposals and theses after a good rating of originality by plagiarism software. To understand their perception on plagiarism control, this questionnaire solicited information on availability of help to perform document trial submissions.

Section D: Attitude towards antiplagiarism use to control plagiarism

Attitude measurements bordered on students' expressions on usefulness of antiplagiarism software to research, checking document originality, whether or not plagiarism software are effective to curb plagiarism, effectiveness of plagiarism software to stop plagiarism, dependence on antiplagiarism software to gauge document originality and possible mitigation measures to reduce plagiarism.

Section E: Awareness of university plagiarism policy

Without plagiarism policy guidelines, students can engage in any magnitude of plagiarism. This questionnaire sought to establish if the sampled universities had made

efforts to create awareness of the university plagiarism policy and in what form the policy exists and the recommended maximum originality score to comply with and one's strongest academic skill useful in research.

Questionnaire for Key informants Appendix II

This category of antiplagiarism users understands the dynamics behind plagiarism control through use of antiplagiarism software. They were supervisors or software instructors who create accounts to plagiarism software users. Information pertaining to their role in plagiarism software use was sought for they had knowledge on who assists students to check proposals and theses for plagiarism. Based on their experience, this questionnaire sought their rating on the use of antiplagiarism software to control plagiarism.

3.7 Piloting

A Piloting survey was carried out at Kenyatta University among 30 respondents who were purposely identified representing 25 postgraduate students who had used antiplagiarism software before and 5 instructors who assist students to check plagiarism of proposals and theses. The piloting survey was carried out to establish validity and reliability of the research instruments. The pilot sample size of 30 respondents represented about 10% of the study's sample size of 358 respondents as computed in the previous sections of this study. The computation was based on at least 10% recommendation by (Mugenda & Mugenda (2003).

Data from the research instruments was analyzed both quantitatively and qualitatively using statistical analysis approach. Quantitative data was analyzed using the Statistical Package for Social Sciences (SPSS) while qualitative data was analyzed by organizing

the responses into themes. The instruments were then refined through paraphrasing some of the questions found to be inconsistent to address the objectives of the research. Data from the sampled students enabled the researcher to test the validity and reliability of instruments. The piloting also helped to assess whether the research protocol was realistic and workable and to identify any logistical problems with the proposed study method.

Table 3.2: Piloting Questionnaires Distribution, Completion Rate and Response

Category of Respondents	Questionnaires Distributed	Questionnaires Returned	% Response	Completion Rate
Postgraduate students	25	25	100	100
Instructors	5	5	100	100

Source: Field survey (2019)

3.7.1 Validity of the Research Instruments

Validity is the extent to which interpretations of the results of a test are warranted, which depends on the particular use the test is intended to serve (Kimberlin & Winterstein, 2008). It is the accuracy and meaningfulness of inferences which are based on results. An instrument is termed to be valid if it does what it is intended to do. There are several types of validity as observed by Changingminds.org (2018) that includes construct validity, convergent validity, discriminant validity, internal validity, external validity, conclusion validity and content validity.

The researcher used content validity which is realized when experiments provide adequate coverage of the subject being studied such as in the case of measuring the right things as well as having an adequate sample. In order for content validity to be realized

the samples should be large enough and also taken from the right target groups. Similarly, sampling validity was applied to measure the extent to which the test would be adequate for the study sample.

The questionnaires were amended in consultation with the supervisor in order to ensure that all the possible areas of the study were appropriately and accurately addressed. This helped to rectify any inadequacies in time before the actual collection of data and thus reduced bias. To establish the content validity of the research instrument, the researcher sought the opinions of experts in the field of study, especially the lecturers at the Kenyatta University, Library Science Department. This helped to improve the content validity of the data that was collected. It facilitated the necessary revision and modification of the research instrument thereby enhancing validity.

3.7.2 Reliability of the Research Instruments

Data collected during the study pilot was used to test reliability of the research questionnaire. Statistical Package for Social Sciences (SPSS) was very instrumental in determining the Cronbach's alpha for the reliability of the questionnaires as shown in the following tables;

Table 3.2: Cronbach's Alpha case processing summary and reliability statistics

Case Processing Summary			Reliability Statistics	
	N	%		
Valid	30	100	Cronbach's Alpha	.807
Excluded ^a	0	0	Cronbach's Alpha Based on Standardized Items	.833
Total	30	100	N of Items	5

A Cronbach's alpha of 0.807 shown in Table 3.2 confirms that the research instrument was adequately reliable given that it was above the recommended 0.7 (Best & Kahn, 2016). When testing the reliability of research instruments, the researcher anticipated evaluating through the estimation of the stability of the internal consistency of the measurement instruments and interpreter reliability of the instrument scores (Kimberlin & Winterstein, 2008). Piloting the respondents' data collection tools determined the best way of administering and restructuring the questionnaire for reliability. The structured questionnaires and interview questions were rephrased to help gather more accurate data that addressed the different aspects of the research questions.

An alpha test was computed to get the test value to establish the reliability of the data collection instrument with a 5% p-value threshold. According to Taber (2017) Alpha is commonly reported for the development of scales intended to measure attitudes and other affective constructs. The data collected was used to modify and revise the instruments that were observed as unsuitable for the study.

3.8 Data Collection Techniques

The graduate schools of the two universities (JKUAT-Board of Postgraduate Studies and USIU-A-School of Graduate Studies) maintain lists of postgraduate students at their different levels of study. The researcher was able to deduce the target population from the figures obtained. The questionnaires were distributed to the respondents with the assistance of supervisors and other staff involved in training students on plagiarism control termed as instructors (Library staff and software administrators) of the two universities. Students were assisted by supervisors as software instructors or by self-

subjection of proposals and theses to antiplagiarism software. The key informants who were both supervisors and library staff were purposely identified. This category of respondents provided crucial data for the study since they constantly interacted with postgraduate students as they sought antiplagiarism software originality reports. The student respondents were requested to fill the questionnaires when they came to consult the supervisors or instructors.

The researcher assured the respondents that the information they provided would be used only for the purpose of the research and that strict confidentiality would be adhered to when dealing with the information they willingly provided.

3.9 Data Analysis

The office of Data Analysis (ODA) of Northern Illinois University describes data analysis as the process of systematically applying techniques to describe and illustrate data statically or logically by condensing, recapping and evaluating the data (ODA, 2005). Data editing was done to check for completeness. Data was coded and entered in Statistical Computer Package, IBM SPSS software. Data cleaning was done to check for errors or discrepancies. Data was analyzed using descriptive statistics to obtain means, frequencies and percentages.

The qualitative data was analyzed using the content analysis approach where the questionnaire responses were classified, summarized and tabulated. Open coding, axial coding to link categories of codes and selective coding approaches was adopted where codes were developed and applied. Themes, patterns and relationships were identified through the use of Word and phrase repetitions, Primary and secondary data comparisons

and search for missing information. Data was later summarized to match with the research aim and objectives. Quantitative data was statistically analyzed in line with the variables of the study to understand the respondents' views on perception and attitude towards plagiarism control through use of antiplagiarism software. The analysis of data was aided by using statistical package for social Sciences SPSS version 21 and later coded to Microsoft excel to aid in cleaning and further interpretation of the findings presented in bar graphs, frequency diagrams, percentages and pie charts.

3.10 Logistical and Ethical Considerations

Logistical consideration is the planning required to meet people in groups for services needed, depending on the number, location and timeframe (Panozzo, 2014). On the other hand, Ethical considerations in research are critical. Ethics in research is defined as the norm or standards for conduct that distinguish between right and wrong that help to determine the difference between acceptable and unacceptable behaviour (CIRT, 2018). The researcher observed logistical and ethical considerations as required while conducting the qualitative study.

3.10.1 Logistical Consideration

Permission to conduct the research was sought from Kenyatta University Graduate School. The researcher also obtained permission from the National Council for Science, Technology and Innovation (NACOSTI) after obtaining an introductory letter from Kenyatta University Graduate School to carry out the research. Permission to conduct research was also sought from the Deputy Vice-Chancellor (DVC) Admin of JKUAT and USIU-A universities after producing the research permit from NACOSTI. Pre-visits to

the universities were made for familiarity and to create a rapport with the university management and library staff.

3.10.2 Ethical Consideration

To maintain anonymity and observe ethical considerations of qualitative data collected, the respondents who participated in the study were coded as JKUAT followed by a digit for key informants interviewed at Jomo Kenyatta University of Agriculture and Technology and USIU-A followed by a digit for key informants interviewed at United States International University Africa. The researcher attached a consent letter at the beginning of all the questionnaires with a consent declaration assuring the respondents that unanimity of their responses would be observed. An assurance was also given that the data would be destroyed after its analysis and use in the research document. The respondents were also given adequate time to respond to the questions at their own time without being rushed. All cited work has been acknowledged and references listed following APA style 6th edition. The final research document was subjected to Kenyatta University Turnitin antiplagiarism software account and a plagiarism certificate produced as evidence in conformity with the university's plagiarism policy.

CHAPTER FOUR

PRESENTATION OF FINDINGS, INTERPRETATION AND DISCUSSION

4.1 Introduction

This chapter presents the findings, interpretations and discussion of the objectives and research questions in relation to perception and attitude of postgraduate students towards antiplagiarism software use on research work. Data is presented in four main topics represented by the objectives precisely: to establish the types of plagiarism that postgraduate were aware of, postgraduate students' perception on the application of antiplagiarism software to gauge the level of plagiarism, the attitudes that postgraduate students have developed as a result of using antiplagiarism software to check text originality of proposals and theses and lastly to establish if postgraduate students were aware of the existing institutional plagiarism policy.

4.2 General and demographic information

The demographic characteristics of the study included 280 postgraduate students from JKUAT and USIU-A. A total of 15 instructors from the two universities were also involved in the study as key informants. The respondents were postgraduate students who had completed coursework and submitted proposals and collecting data for theses or projects at the time of this study. The instructors were supervisors, Library staff and software administrators from the two universities who interacted with postgraduate students while seeking plagiarism report were also interrogated as key informants. They were given one umbrella term of 'instructors' in this study owing to the role they played in assisting the students to acquire antiplagiarism software report. They played a key role in providing information for the study as they interacted constantly with the students on

matters related to plagiarism control. The gender and programme distribution of the respondents who took part in this study is presented in table 4.1.

Table 4.1: Respondents distribution by university

University	Male	Female	Masters	PhD	Instructors
JKUAT	126	88	179	35	10
USIU-A	30	36	54	12	5
TOTAL	156	124	233	47	15

Source: Field Data (2019)

Table 4.1 shows the distribution of the respondents by university. The study also involved a total of 15 instructors who participated in the research. There were 126 males to 88 females in JKUAT and 30 males to 36 females in USUI-A. The distribution of the respondents by degree programme was 179 doing masters and 35 pursuing PhD in JKUAT while 54 respondents were enrolled for Masters programmes and 12 for PhD at USIU-A.

4.2.1 Questionnaire Response Rate and Research Problems Per Institution

The response rate from the two institutions differed in terms of questionnaire return rate and total number of respondents sampled. At JKUAT, 214 questionnaires were received for postgraduate students and 10 for key informants making a total of 224 out of the expected total sample of 266 while at USIU-A, 66 responses were received for postgraduate students and 5 for key informants making a total response of 71 out of the computed sample size of 92. The total number of respondents from the two sampled institutions was 295 representing 82% out of an expected sample size of 358, those who

did not respond were 63 representing 18%. Cohen, Manion and Morrison (2007) cautioned that, when planning a piece of research, it should not be assumed that research will always go according to plan. Some of the participants may disappeared with the research instruments during the research impacting negatively on the response rate and rendering subsequent data analysis, reporting and generalization problematical. Full administrative support was not realized from one of the sampled institutions. Figure 4.2 offers a bird's eye view of the respondents' distribution by institution.

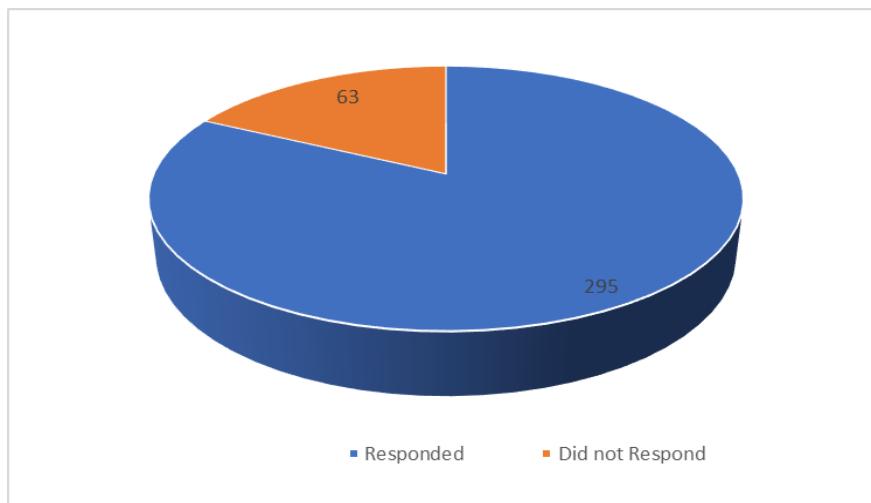


Figure 4.1 Overall Response Rate

Mugenda and Mugenda (2003) noted that a response rate of 50% is considered adequate for data analysis and reporting. In addition, a response rate of 60% is good and a response rate of 70% and over is considered excellent. This study attained an overall response rate of 295 out of the total population sample size of 358 representing 82% which is considered by Mugenda and Mugenda excellent and adequate for data analysis and interpretation.

4.3 Types of Plagiarism That Students are Aware of

The first objective of this study was to find out the types of plagiarism that the respondents were aware of. Plagiarism can take place in many forms; however, it was necessary to establish how the knowledge was acquired on its application for use. The respondents were asked to indicate how they came to learn about the existence and application of antiplagiarism software. The results from the two sampled universities by this study are presented in table 4.2.

Table 4.2: Sources of awareness of antiplagiarism software

Sources of awareness	Frequency		Percent	
	JKUAT	USIU-A	JKUAT	USIU-A
Through a colleague	61	29	28.5	43.9
During library orientation	53	7	24.8	10.6
Through my supervisor	76	22	35.5	33.3
Online on university website	15	2	7.0	3.0
During university matriculation	9	6	4.2	9.1
Total	214	66	100	100

Source: Field Data (2019)

The results coded in Table 4.3 clearly indicate that, student colleagues were the primary source of information on awareness antiplagiarism software at USIU-A by 43.9% followed closely by supervisors. However, library orientation was the third source of information about awareness of antiplagiarism software to control plagiarism. The results of the data presented above shows that there is still a need for a vigorous programme to

advocate for plagiarism control among students. It is clear that university supervisors were not the primary source of information to advocate for use of plagiarism software.

4.3.1 Awareness of Various Types of Plagiarism

Selemani, Chawinga and Dube (2018) asserted that students are aware of plagiarism even when they engage in the vice. There are different types of plagiarism as established from the literature that was reviewed such as cut and paste and word switch plagiarism. As the first task of this study the respondents were asked to identify the various types of plagiarism from their knowledge base. The respondents were asked to identify from a list possible types of plagiarism that are likely to be committed by students. The responses to this question are tabulated in table 4.4.

Table 4.3 Awareness of Various Types of Plagiarism

Types of plagiarism	Frequency		Percent	
	JKUAT	USIU-A	JKUAT	USIU-A
Full (blatant plagiarism)	67	23	31.3	34.8
Partial (potluck paper plagiarism)	36	9	16.8	13.6
Minimal (word switch plagiarism)	69	17	32.2	25.8
Mosaic (labour of laziness)	10	4	4.7	6.1
Self-stealing	17	8	7.9	12.1
Ghost writer	10	4	4.7	6.1
Any other	5	1	2.3	1.5
Total	214	66	100	100

Source: Field Data (2019)

Among the top ranked types of plagiarism that were identifiable by the respondents as presented in table 4.3 were Full (blatant plagiarism) by 35% followed closely by 32.2% minimal (Word Switch Plagiarism). It is clear from the responses that the respondents were aware that several types of plagiarism were taking place at the universities. Similarly, it is clear that arising from the sampled universities, both public and private universities were experiencing plagiarism and that a control mechanism was justified by use of antiplagiarism software.

4.3.2 Documents Checked With Antiplagiarism Software

At postgraduate level, antiplagiarism software is mainly used to gauge the level of text similarity of proposals, projects and theses. This study sought to establish what kinds of documents are commonly checked for plagiarism by postgraduate students so as to understand well the issues they faced related to plagiarism control. The results to this question are presented in percentages in figure 4.2.

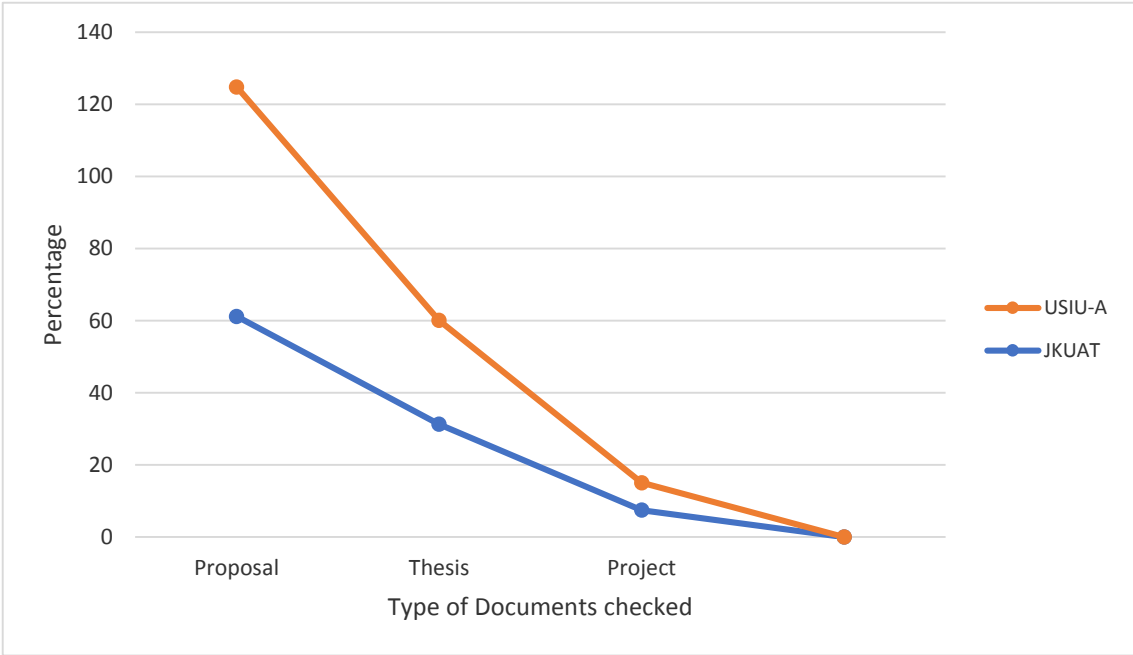


Figure 4.2: Documents checked with antiplagiarism software

The responses in figure 4.3 indicated that the frequency of subjection of proposals, thesis and projects for plagiarism check at USIU-A was higher than that of JKUAT. Similarly, postgraduate proposals were subjected to antiplagiarism software more than theses and projects by nearly 75% followed by theses and projects at the tail end. The overall subjection of documents for plagiarism check was more at USIU-A than at JKUAT. These results indicated that there was more plagiarism control at USIU-A a private university than at JKUAT that is a public university. Thus, perception and attitude towards plagiarism control was realized in USIU-A than at JKUAT meaning that postgraduate students at USIU-A a private university were more aware of various types of plagiarism than those at JKUAT.

4.3.3: Number of Times Documents Were Checked for Plagiarism

In order to reduce similarity index of research work, it is common for postgraduate students to do what has come to be referred to as document ‘sanitation’ or paraphrasing of antiplagiarism software’s highlighted text similarity. This question was posed to the sampled respondents who were doing postgraduate research at JKUAT and USIU-A universities. Depending on the level of plagiarism, students can check document for originality a number of times. The exercise at times can be repetitive and tiresome raising issues of perception and attitude towards plagiarism control using software among postgraduate students. The responses to this question were tabulated in figure 4.3.

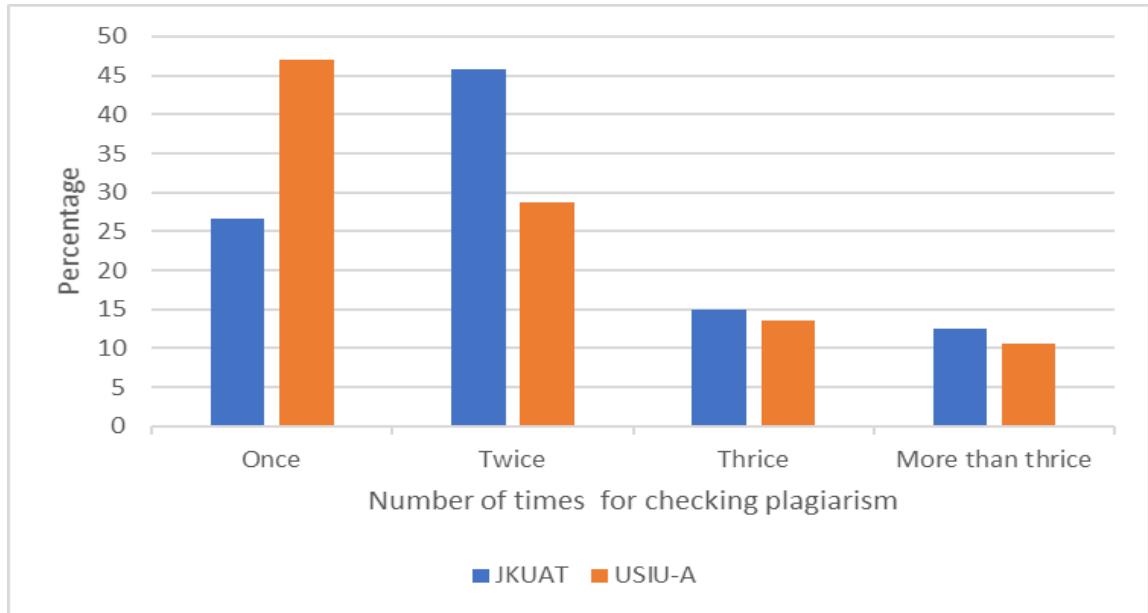


Figure 4.3 Number of Times Documents were Checked for Antiplagiarism

Table 4.3 indicates that close to half of the respondents at USIU-A subjected documents to antiplagiarism software once by more than 45% compared to slightly more than 25% at JKUAT. However, when it came to double subsection of documents, JKUAT rate was higher at 46% of the responses compared close to 30% of respondents at USIU-A. The document subsection was repeated every time the results were higher than what is recommended by the university antiplagiarism policy. Close to a half of the responses indicated that they subjected their documents for plagiarism check at least once. However, there were instances where it was necessary for the respondents to check research work for plagiarism more than thrice. Although the students were aware about plagiarism control going by the number of trial subsections to check plagiarism, some perceptions and attitudes were likely to arise because of the supervisors' demand to rid their documents of the feasible various types of plagiarism.

4.3.4 Similarity Level at First Submission to Antiplagiarism Software

Hashim (2015), reported that students can have mixed viewpoints when using antiplagiarism software ranging from being afraid to be accused of plagiarism, reliability of the software to control plagiarism to getting anxious about the originality results. The first trial submission, students are usually nervous and anxious to know the originality results. This can be a breaking moment for many and can determine whether their efforts of endless writing are worthy of good originality index. The first level or percentage attained during a trial submission can create a mixed view towards plagiarism control using antiplagiarism software, worse still if one has to repeat the trial submissions in bid to eliminate all the types of plagiarism highlighted by the software. Documents subjected for plagiarism check can return similarity index results ranging from 0-100% where the latter indicates a possibility of full plagiarism. This question sought to gauge the similarity level of documents subjected for plagiarism check for the first time as tabulated in table 4.5.

Table 4.4: Similarity Percentage on First Subjection to Antiplagiarism Software

Similarity %	JKUAT USIU-A		JKUAT USIU-A	
	Frequency		Percent	
0-24%	92	36	43.0	55.5
25-49%	97	21	45.3	31.8
50-74%	23	8	10.7	12.1
75-100%	2	1	.9	1.5
Total	214	66	100	66

Source: Field Data (2019)

The results in table 4.5 demonstrated that 55.5% of documents submitted for plagiarism check had a minimal similarity level between 0-24% at both JKUAT and USIU-A. The results obtained on similarity index views of students was a clear indication that they

were aware of the various types of plagiarism and were able to avoid them. However, depending on one's paraphrasing skills, editing of proposals and theses after plagiarism check can be a daunting exercise likely to generate perceptual and attitudinal experience.

4.3.5: Academic Writing Skills Helps to Avoid Engaging in Plagiarism

Fazilatfar, Elhambakhsh, and Allami (2018) observed that, students rely amply on source texts in their writings using copying as a major strategy, however, they get confused on how to cite. Postgraduate research entails acquisition of the prerequisite skills to be able conduct research independently and also avoid committing acts of plagiarism. Through a Linkert scale, the respondents were asked to rate the level of skills acquisition. The results are presented in figure 4.4

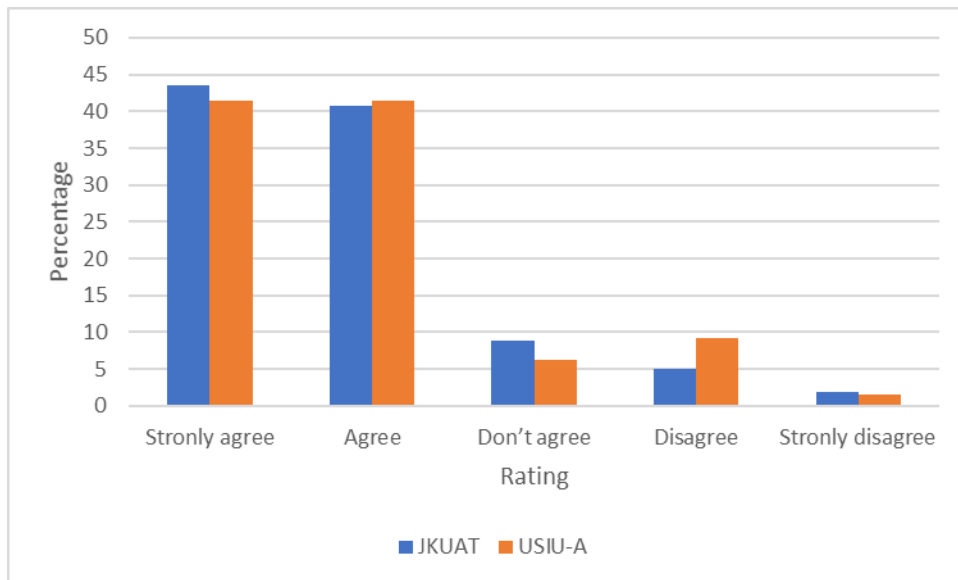


Figure 4.4: Perception on skills acquisition to help avoid engaging in Plagiarism.

Figure 4.4 suggests that close to 45% of respondents in both JKUAT and USIU-A strongly agreed that they had adequate writing skills to help them avoid committing acts

of plagiarism. However, about 40% just agreed to the same question. The results of the data collected suggested that, students from the sampled universities did not fully possess academic writing skills. Faced with high levels of plagiarism, they would encounter serious challenges to control the vice. Thus, the paraphrasing exercise occasioned by use of antiplagiarism software cannot be viewed as a pleasant requirement aimed at controlling the various types of plagiarism requiring advanced paraphrasing skills.

4.4 Postgraduate Students Perception of Antiplagiarism Software Use

The second objective of the study was to identify postgraduate students' perception towards antiplagiarism software use to control plagiarism. Idiegbeyan-ose (2016) found out that awareness and perception of plagiarism by postgraduate students was influenced by their level of training, awareness; pressure to meet deadlines, inadequate writing skills in addition to lack of knowledge of what constitutes plagiarism. Accuracy of antiplagiarism software is measured in terms of its ability to give correct text matching score with minimal errors. The users of antiplagiarism software such as postgraduate students can express their perception of the software since they constantly use it to sanitize documents before submission for marking.

4.4.1 Accuracy of Antiplagiarism Software for Checking Plagiarism

This study's second task applied a Linkert scale with five choices to establish from the respondents' their views of the antiplagiarism software being used if it is accurate or not. The choices ranged from 'very accurate to very inaccurate'. The views from respondents from each university are presented in figure 4.4.

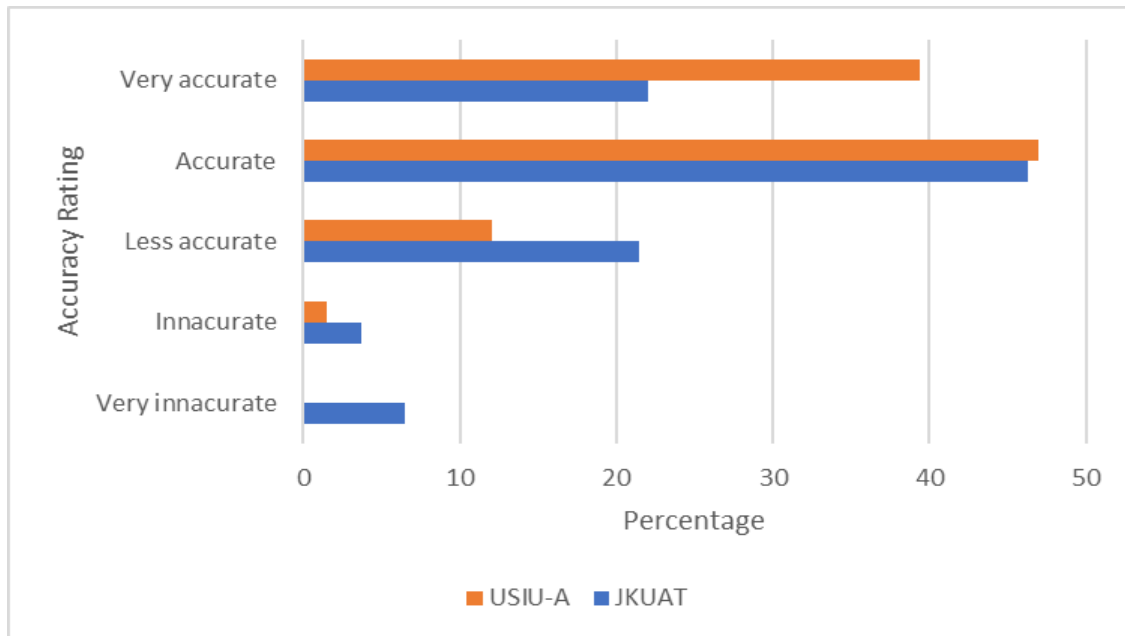


Figure 4.4: Accuracy of Antiplagiarism Software in Checking Plagiarism

The results from figure 4.4 showed the distribution of the respondents' opinion on the level of accuracy of antiplagiarism software. Nearly half of the respondents felt that the software are just accurate with a response rate of close to 50% from both sampled universities. Over close to 40% of the respondents at USIU-A felt that the antiplagiarism software in use was very accurate, while slightly over 20% of respondents in JKUAT indicated that the software in use at the institution was very accurate. However, there were those who felt that the software was inaccurate in detecting acts of plagiarism. Arising from different the viewpoints, it was clear that there were mixed perspectives on the use of antiplagiarism software to control acts of plagiarism within the sampled universities that needs to be addressed.

4.4.2 Ability of Antiplagiarism Software to Curb Acts of Plagiarism

Mphahlele and Mckenna (2019) established that there was an over reliance on plagiarism control software to identify plagiarism “in ways that brought undesirable changes in students' behaviour”. Research at postgraduate level leads one to review

previous literature so as to identify the missing gaps and create new knowledge. It is possible to borrow from other sources without due attribution to the creator. The introduction and use of antiplagiarism software has helped to curb the vice. Postgraduate students at the universities sampled were asked to rate the antiplagiarism software ability to curb acts of plagiarism, the results are presented in table 4.5.

Table 4.5. Ability of Antiplagiarism Software to Curb Plagiarism

Software ability level	JKUAT USIU-A		JKUAT USIU-A	
	Frequency		Percent	
Excellent	67	23	31.8	38.4
Good	121	29	53.5	43.9
Neither good nor poor	17	9	9.3	13.6
Poor	7	3	3.9	4.5
Very poor	2	2	1.6	3
Total	214	66	100	100

Source: Field Data (2019)

The respond to this question met mixed reaction, 53.5% of the respondents at JKUAT felt that antiplagiarism software was a good measure to curb acts of plagiarism 43.9% of the respondents at USIU-A expressed their opinion that use of antiplagiarism software was a good idea to minimize acts of plagiarism. A few of the respondents indicated that use of antiplagiarism software was neither a good nor a poor measure for curbing plagiarism with those from USIU-A leading with this perception by over 10%. However, minority of the responses were for the notion that use of antiplagiarism software was a poor measure for curbing acts of plagiarism. The above outcome gave a mixture of perceptions on plagiarism control by a software that needs to be addressed among postgraduate students.

4.4.3: Perception on Antiplagiarism Software in Use to Control Plagiarism

Students' perspectives on antiplagiarism software may be influenced by the action that can be taken when acts of plagiarism have been detected. Plagiarism can result to failing of assignment and disciplinary action in some South African Universities (Mphahlele & Mckenna (2019). This study's objective was to establish the perception and attitude of postgraduate students on the subjection of their work to antiplagiarism software to measure text similarity. The study used three Linkert scale choices to measure the respondents perception towards antiplagiarism software use; useful academic tool, a tool to deter plagiarism and an academic punitive tool. The responses were presented in Tables 4.4.3.1 to 4.4.3.3.

4.4.3.1 Antiplagiarism Software is a Useful Learning Tool

Stappenbelt and Rowles (2010) noted that contrary to the notion that antiplagiarism software was employed in a punitive capacity, that institutions adopted plagiarism detection software as a learning tool for students instead. Antiplagiarism software indicates sections of online documents that are similar to the submitted documents. This by itself helps students to know which parts have been directly copied that requires review by either exclusion or paraphrasing. The responses to this attribute of plagiarism software as tools to aid learning were presented in table 4.4.3.1 below.

Table: 4.4.3.1 Antiplagiarism software is a useful learning tool

Antiplagiarism Software is a Useful Learning Tool	Frequency		Percent	
	JKUAT	USIU	JKUAT	USIU

Strongly agree	123	32	57.5	48.5
Somewhat agree	66	26	30.83	39.4
Neither agree nor disagree	16	3	7.5	4.5
Somewhat disagree	4	5	1.9	0
Strongly disagree	5	0	2.3	7.6
Total	214	66	100	100

Source: Field Data (2019)

Using a five Likert scale of strongly agree to strongly disagree, the respondents were asked through a questionnaire to rate the usefulness of antiplagiarism software as a learning tool. At JKUAT, 57.5% of the responses strongly agreed that antiplagiarism software is a useful learning tool, while at USIU-A, 48.5% of the responses strongly agreed that antiplagiarism software is a useful learning tool. However, at USIU-A 39.4% somewhat agreed that antiplagiarism software is a useful learning tool as slightly 31% of responses from JKUAT were of the same perception. It with no doubt that plagiarism control was embraced at the two sampled universities, however, there were a few descending responses that needs to be heard, prompting for establishment of their perception towards plagiarism control by use of a software.

4.4.3.2 Antiplagiarism Software is Used as a Tool to Deter Plagiarism

Elmes (2017) pointed out that online plagiarism detection tools were allowing students to paraphrase academic work and consequently facilitate plagiarism. This study set to establish the use of antiplagiarism software as a tool to control plagiarism at the sampled universities. The responses to this question are presented in table 4.4.3.2

Table: 4.4.3.2 Antiplagiarism software is used as a tool to deter plagiarism

Antiplagiarism Software is a Tool to Deter Plagiarism	Frequency		Percent	
	JKUAT	USIU	JKUAT	USIU
Strongly agree	89	15	41.6	22.7
Somewhat agree	43	7	20.1	10.6
Neither agree nor disagree	30	12	14.0	18.2
Somewhat disagree	33	22	15.4	33.3
Strongly disagree	19	10	8.9	15.2
Total	214	66	100	100

Source: Field Data (2019)

A close look at the results presented in table 4.5.2 shows that there was a clear difference in terms of perception of antiplagiarism software as a deterrent tool at JKUAT and USIU-A. 41.6% of the responses from JKUAT had more than two times agreement compared to USIU-A with 22.7% that antiplagiarism software was introduced as a tool to deter plagiarism. Similarly, a 20.1% from JKUAT compared to 10.6% of responses from USIU-A somewhat agreed that the software was indeed introduced to as a measure to deter acts of plagiarism. The results depict a more negative perception of plagiarism control at JKUAT which is a public university compared to USIU-A as a private university.

4.4.3.3 Antiplagiarism Software is a Punitive Tool

Halgamuge (2017) reiterated that there is a substantial benefit in using plagiarism control software as an educational writing tool rather than a punitive tool, as the use improves students' academic skills. This study collected views of the respondents on whether

plagiarism control is tantamount to punishment or not. The responses from the sampled universities were presented in table 4.4.2.3.

Table 4.4.3.3 Antiplagiarism software is a punitive tool

Antiplagiarism Software is a Punitive Tool	Frequency		Percent	
	JKUAT	USIU	JKUAT	USIU
Strongly agree	28	7	13.1	10.6
Somewhat agree	36	5	16.8	7.6
Neither agree nor disagree	37	10	17.3	15.2
Somewhat disagree	47	19	22.0	28.8
Strongly disagree	66	25	30.8	37.9
Total	214	66	100	100

Source: Field Data (2019)

The data presented at table 4.4.2.3 indicates that there was a strong disagreement at both institutions sampled, that antiplagiarism software is not used for punitive purposes by more than 30% of the responses. Similarly, all the respondents somewhat disagreed by more than 10% that antiplagiarism software is not used to punish academic plagiarists. Quite a number of the respondents neither agreed nor disagreed that antiplagiarism software is applied by universities under study to punish those who engage in academic plagiarism. The results from the data analyzed above indicates that plagiarism control is not a punitive measure for postgraduate students.

4.4.4: Supervisors Scrutiny of Documents After Attaining the Correct Similarity Level

It is a common practice for students to present proposals and theses after plagiarism check and a originality report ranging within the recommended similarity index This

question was formulated by the study to earnest postgraduates' perception on the need or not for supervisors to scrutinize their proposals and theses after attaining the recommended software similarity. The responses are presented in figure 4.6.

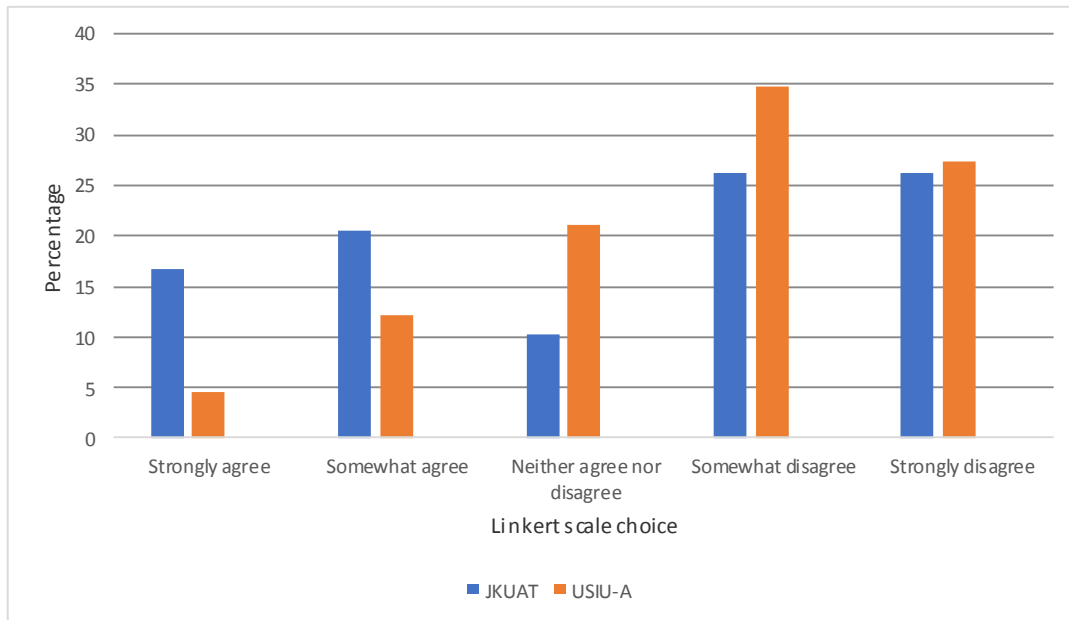


Figure 4.6: Need For Scrutiny of Research Work After Passing the Plagiarism Test

Close to 35% of the respondents at USIU-A somewhat disagreed that supervisors should not scrutinize proposals and theses submitted by students after subjection and attainment of the recommended similarity index. At JKUAT, slightly above 25% of the respondents somewhat disagreed that supervisors should not scrutinize documents already subjected to plagiarism check. Over 25% of the responses from both JKUAT and SIU-A strongly disagreed that supervisors should not scrutinize students research work that has passed plagiarism test. Over 5% of the respondents from USIU-A neither agreed nor disagreed to scrutiny of documents after being scanned for plagiarism, however, only 10% of responses from JKUAT were neutral to this question. Data collected on students' views to this question clearly indicates that there is still a need for supervisors to skim through

students proposals and theses even after getting a clean bill of health from the plagiarism software in use.

4.4.5: Postgraduate Students' Responses to Scrutiny of Documents by Supervisors After Plagiarism Check

This research established that checking proposals and theses for plagiarism was mandatory. Perceptual views of the postgraduate students was sought to establish if it was necessary for further scrutiny of their documents by supervisors. This question generated varied responses from the two sampled universities which were interpreted thematically by this study and the key suggestions were discussed below:

The respondents at JKUAT suggested that there is a need for supervisors to recheck students work since there could be other mistakes apart from plagiarism that requires correction.

At USIU-A the respondents suggested that supervisors should be given the opportunity to scrutinize the relevance of the documents to the topic under discussion. Some responses from both universities however, indicated that plagiarism software was adequate to check for plagiarism and relevance.

There was a general agreement that students should also interact with supervisors to openly discuss how to correct any such issues as plagiarism and citation errors. At JKUAT some respondents indicated that supervisors should only do random check to ensure proper citation and originality of work since text similarity would be taken care of by the plagiarism software. However, more responses in JKUAT than in USIU-A felt that there was no need for scrutiny of documents by supervisors after plagiarism check since the software can be used to check grammar as well.

At both universities, the respondents indicated that common errors can be minimized through paraphrasing quoted text although there was a general agreement that high level of text similarity index signifies presence of plagiarism.

There were several suggestions from respondents at both universities that students should be academically mentored by lecturers on matters of academic integrity while doing coursework. This would help them observe academic ethics when they begin embarking on research to ensure quality work and avoid committing acts of plagiarism.

4.4.6 Plagiarism Trial Test Assistance

Trial submission (sanitation) of proposals and theses for plagiarism is a common practice among postgraduate students. The exercise is repetitive and laborious to the person offering the assistance. Often students will find challenges getting immediate help for trial submissions. Where the plagiarism software is integrated in the institutions learning Moodle, there is no provision for trial submission. It is a onetime 'sudden death' subjection and submission for marking of documents. This means that one has to come up with a perfect research document because there is no provision for trial and error. This study sought to establish how postgraduate students go about getting trial submission assistance and what their views are as they seek help. The responses to this question were presented in figure 4.7

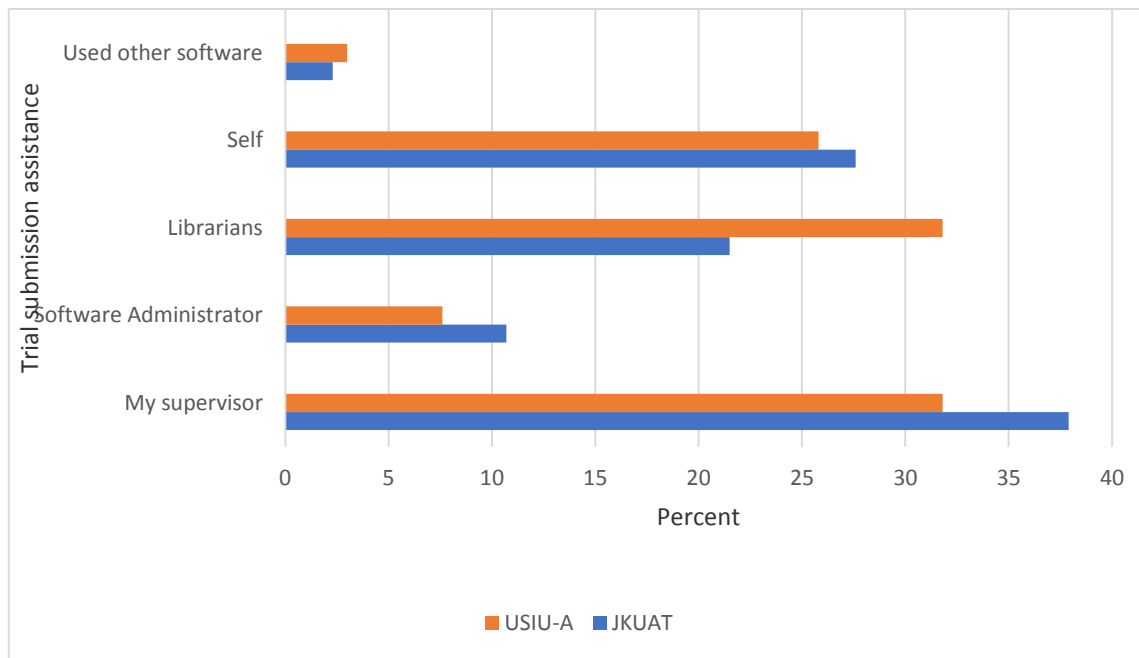


Figure 4.7 Plagiarism Trial Test Assistance

Close to 40% of the respondents from JKUAT university indicated that they were assisted by their supervisors to perform trial tests for plagiarism with over 35% responses from USIU-A. Library staff from USIU-A appeared keen to assist their students scoring close to 33% compared to those at JKUAT with about 22%. However, there were responses of self-check from both universities. There was more dependence on library staff for assistance by 33% of the responses at USIU-A than at JKUAT which was slightly above 22% of the total responses from this university. Self-assistance was more prominent at JKUAT than at USIU-A. Software administrators offered a very insignificant assistance for trial submissions hopefully because they only deal with the administration matters of the software in use. However, more consultation of Antiplagiarism administrators was done at JKUAT than at USIU-A. The above scenarios clearly indicated that there was no one single source for help seeking for plagiarism

check. The possibility of meeting odds and ends was quite feasible. This could impact negatively on the perception about the whole idea of plagiarism control.

4.5 Postgraduate Students' Attitude on Antiplagiarism Use

This third objective of the study was to establish postgraduate students' attitude on antiplagiarism software use to control plagiarism. The proliferation of online information has reversed the way some students perceive 'giving credit where credit is due' although Smith, Ghazali and Minhad (2007) suggested that factors contributing to plagiarism include personal attitude, lack of awareness and lack of understanding. Kattan et al (2017) concluded that there was still a tendency among students to plagiarize even if they had received training in writing, research ethics or published a manuscript. There is an increased in requirement by universities that students undertaking postgraduate studies check their proposals and theses for plagiarism control. This study objective was formulated to establish postgraduate students' attitude towards this requirement. The data collected from the sampled universities was analyzed and presented under the sub-topics below.

4.5.1 Importance of Antiplagiarism Software as Research Tool Tot Control Plagiarism

To understand postgraduate students' attitude on antiplagiarism software use, this research sought to find out the respondents varied opinions. The use of Antiplagiarism software to scan students work for plagiarism has been taken as tasks of a 'substitute' supervisor since the software is able to intelligently match borrowed text from online sources to a certain degree of precision (JKUAT LIB 2). The responses to this question were presented in table 4.5.

Table 4.5: Importance of Antiplagiarism Software as a Research Tool to Control Plagiarism

Antiplagiarism software is a useful research tool	Frequency		Percent	
	JKUAT	USIU-A	JKUAT	USIU-A
Strongly agree	112	27	52.3	40.9
Agree	79	28	36.9	42.4
Undecided	12	6	5.6	9.1
Disagree	6	3	2.8	4.5
Strongly disagree	5	2	2.3	3
Total	214	66	100	100

Source: Field Data (2019)

Respondents strongly agreed that antiplagiarism software was an important tool in doing research by 52.3% of the responses in JKUAT and 40.9% of the respondents from USIU-A. While 42.4% of responses from USIU-A and 36.9% from JKUAT agreed that the software is a useful tool while conducting. However, a very insignificant number of respondents from both universities were undecided or disagreed on the importance of antiplagiarism software as a research tool. It is noteworthy to point out here that arising from the responses from both universities antiplagiarism software plays a key role towards research activities because of its ability to match borrowed texts plagiarism control is possible.

4.5.2 Importance of Antiplagiarism Software in Checking Research Originality Score

According to Meo & Talha (2019), many plagiarism detection tools are introduced to help researchers establish research originality of their work. Text matching software have made it possible and easier to gauge research originality. This is achieved by subjecting documents to check the originality score. The respondents who are researchers and with

past experience of using text matching software were asked to rate the importance of antiplagiarism software in abating plagiarism. The responses are presented in figure 4.8 ranging from very important to unimportant.

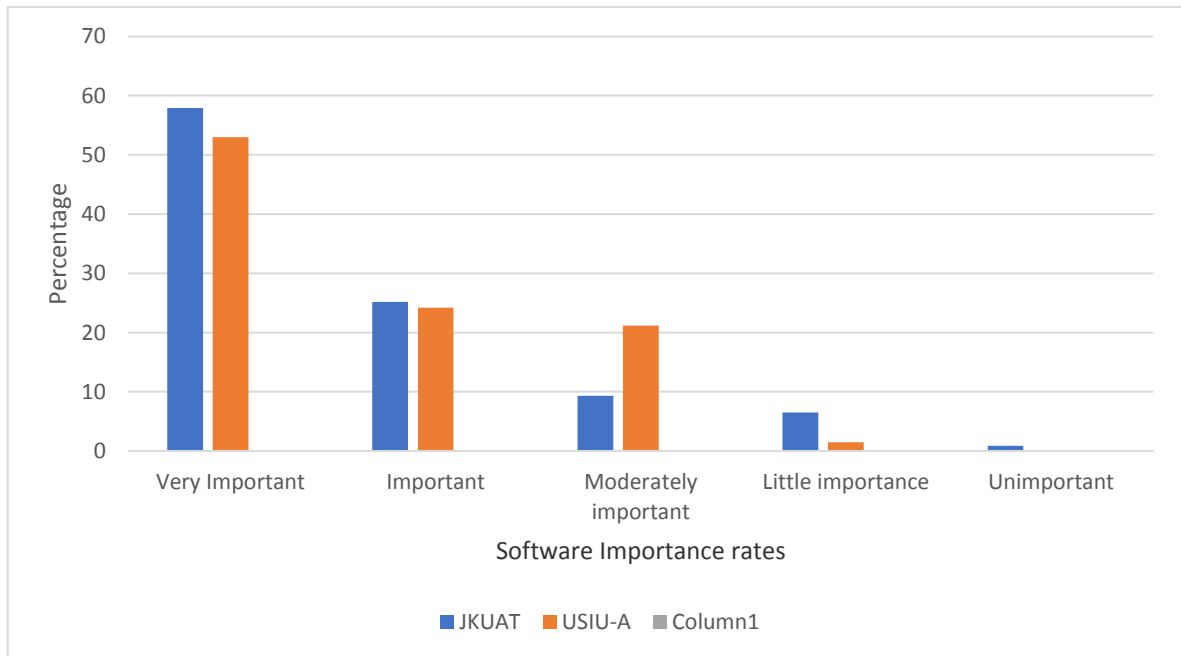


Figure 4.8: The Importance of Antiplagiarism Software in Checking Research Originality

Close to 60% of the respondents in JKUAT and 52% in USIU-A universities indicated that antiplagiarism software are very important in checking research originality while close to 25% of responses at JKUAT and USIU-A indicated that antiplagiarism software are important in establishing research originality. At USIU-A, there were indications of moderately important of 20% of the responses compared to 10% at JKUAT. There was an insignificant response of unimportance of antiplagiarism software in checking research originality in JKUAT. There is some evidence from the two sampled universities that postgraduate students stated that antiplagiarism software are important in establishing

research originality. This aspect of the software implies that there is a positive attitude towards antiplagiarism use in controlling plagiarism.

4.5.3 Use of Antiplagiarism Software is an Effective Measure to Curb Plagiarism

Libraries have inherent strategic role to play in curbing plagiarism through plagiarism awareness creation and empowering students with referencing and citation management skills (Idiegbeyan-ose & Segun-adeniran, 2018). It is possible for postgraduate students to measure the effectiveness of antiplagiarism software to match text after a repeated use before submission of the final proposals and theses for examination. Respondents from the universities sampled by this study were asked to rate the use of antiplagiarism software as an effective measure to curb plagiarism. The results are presented in figure 4.9.

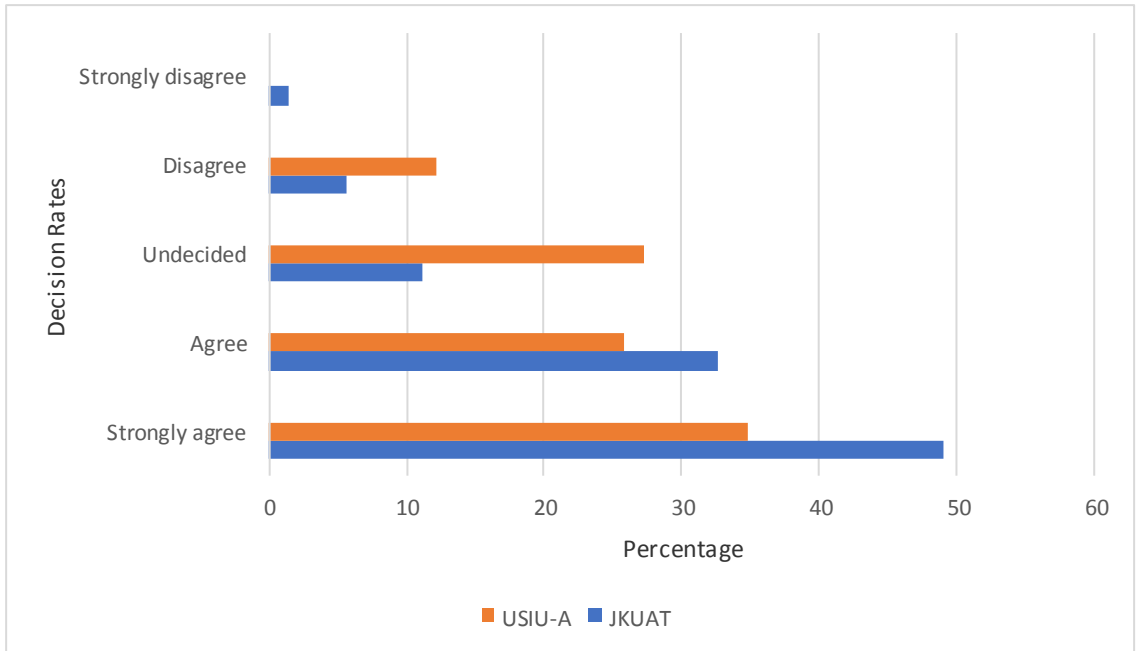


Figure 4.9: Use Of Antiplagiarism Software y University Asa Effective Measure to Curb Plagiarism

Close to 50% of the responses at JKUAT agreed that use of antiplagiarism software is an effective measure to curb plagiarism. At USIU-A, 35% of the respondents strongly agreed that antiplagiarism software are an effective measure to curb plagiarism. There was more respondents at JKUAT by 33% compared to USIU-A 27% of the total responses from the university who agreed that use of antiplagiarism software is an effective measure for plagiarism control. Majority of the respondents to the above question were affirmative that plagiarism control was effective through use of antiplagiarism software. Based on the responses, it is correct to state that postgraduate students from the sampled universities had a positive attitude towards plagiarism control.

4.5.4 Antiplagiarism Software Cannot Stop Students from Engaging in Plagiarism

Mphahlele and Mckenna (2019) found out that Turnitin and similar programs do not deal with the causes of plagiarism instead students should be taught how to write academically and to avoid plagiarism. However, use of antiplagiarism software is one of the ways in which universities can minimize acts of plagiarism. This study sought to understand if the application of antiplagiarism software alone can be used to stop students from engaging in plagiarism. This was opposed to the use of both the software and the Lecturers to scan through the students' research work to confirm research originality. Students views on this question are presented in figure 4.10.

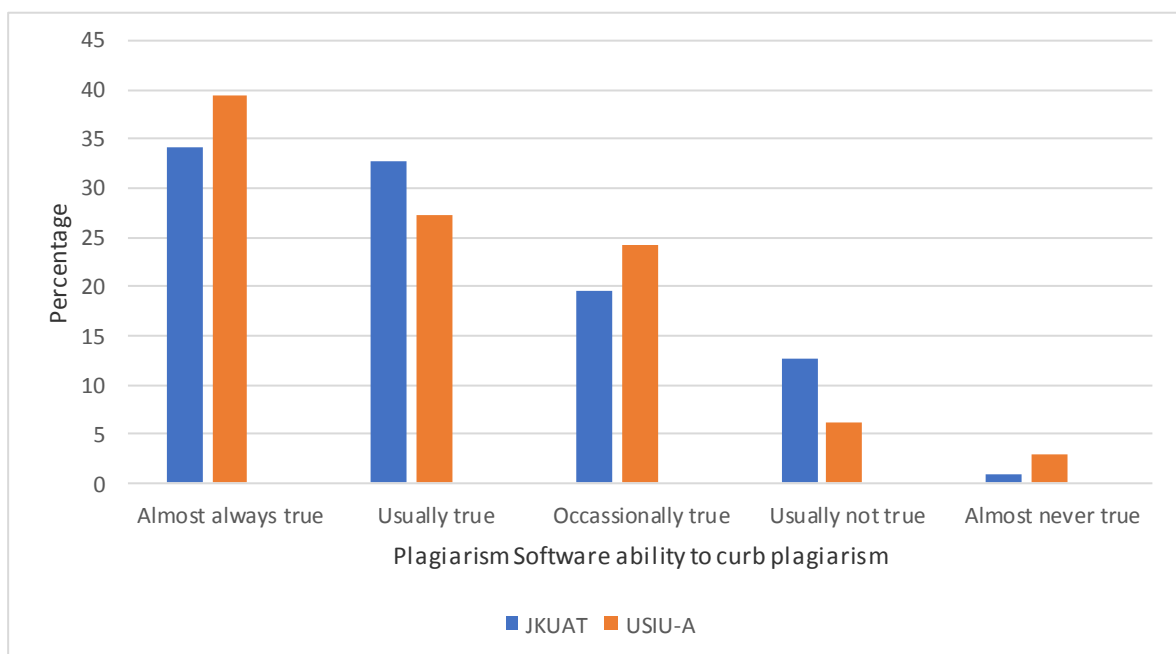


Figure 4.10: Antiplagiarism Software Alone Cannot Stop Plagiarism

About 40% of the respondents at USIU-A were affirmative that antiplagiarism alone cannot stop plagiarism. On the other hand, 34% of the respondents at JKUAT also indicated that antiplagiarism software alone cannot be used to curb acts of plagiarism among students. However, close to 33% of the responses from JKUAT indicated that antiplagiarism software can be solely used to curb plagiarism while 27% of respondents

at USIU-A also pointed out that plagiarism software can be used to curb acts of plagiarism. Contrary to single use of antiplagiarism to stop plagiarism, 13% of the respondents from JKUAT indicated that the software alone can be used to abate acts of plagiarism, compared to 6% of responses for the same rate at USIU-A. It is evident from the data collected and analyzed that antiplagiarism control requires more than use of a software at both JKUAT and USIU-A universities.

4.5.5: Dependence of Antiplagiarism Software to Ensure Research Originality

Batane (2010) recommended that a more comprehensive approach is needed in dealing with acts of plagiarism to introducing the use of plagiarism software among students and that, it is necessary to establish the fundamental reason why students plagiarize. More often than not, postgraduate students depend on text matching software to ensure research originality. This is usually true in the social science disciplines where a lot of literature has to be reviewed. However, this study sought to establish this fact through interrogation of postgraduate students who have to skim through and quote massive literature when they are conducting research. The results of the response to this question are presented in table 4.6.

Table 4.6 Dependence of Antiplagiarism software for Research Originality

Dependence	JKUAT USIU-A		JKUAT USIU-A	
	Frequency		Percent	
Very frequently	25	6	11.7	9.1
Frequently	66	16	30.8	24.2
Occasionally	78	21	36.4	31.8
Rarely	35	20	16.4	30.3
Never	10	3	4.7	4.5
Total	214	66	100	100

Source: Field Data (2019)

Over 30% of the respondents at both JKUAT and USIU-A indicated that occasionally antiplagiarism software can be relied upon to gauge research originality. On the other hand, 31% of the responses in JKUAT frequently used text matching software to ensure that their research was original while 24% of the respondents from USIU-A checked their documents frequently for originality. 10% of the responses from the two sampled universities indicated that they used antiplagiarism software very frequently to ensure originality of research. A very insignificant number of responses from both universities indicated that they never relied on antiplagiarism software to ensure research originality. Although 30% at USIU-A and JKUAT and 16% of respondents used the software rarely for the purpose of ensuring research originality. Based on the analysis of the data presented in the above table, it is evident that there was a mixed response from postgraduate students as to whether plagiarism software can be solely relied upon to ensure research originality. The views above show a mixed attitude towards plagiarism control through use of antiplagiarism software alone.

4.5.6: Measures Postgraduate Students are Likely to Take if the Text Similarity Index is High

Rogerson and McCarthy (2017) noted that the ease of access to online paraphrasing tools provides the potential for students to submit work they have not directly written themselves. The task of revising research documents to reduce similarity index begins once the antiplagiarism software reports are available for view or download. There are a number of options that can be taken to come up with a near original work. The respondents were asked to choose the most probable options they are likely to take. Figure 4.11 presents the respondents preferred choices.

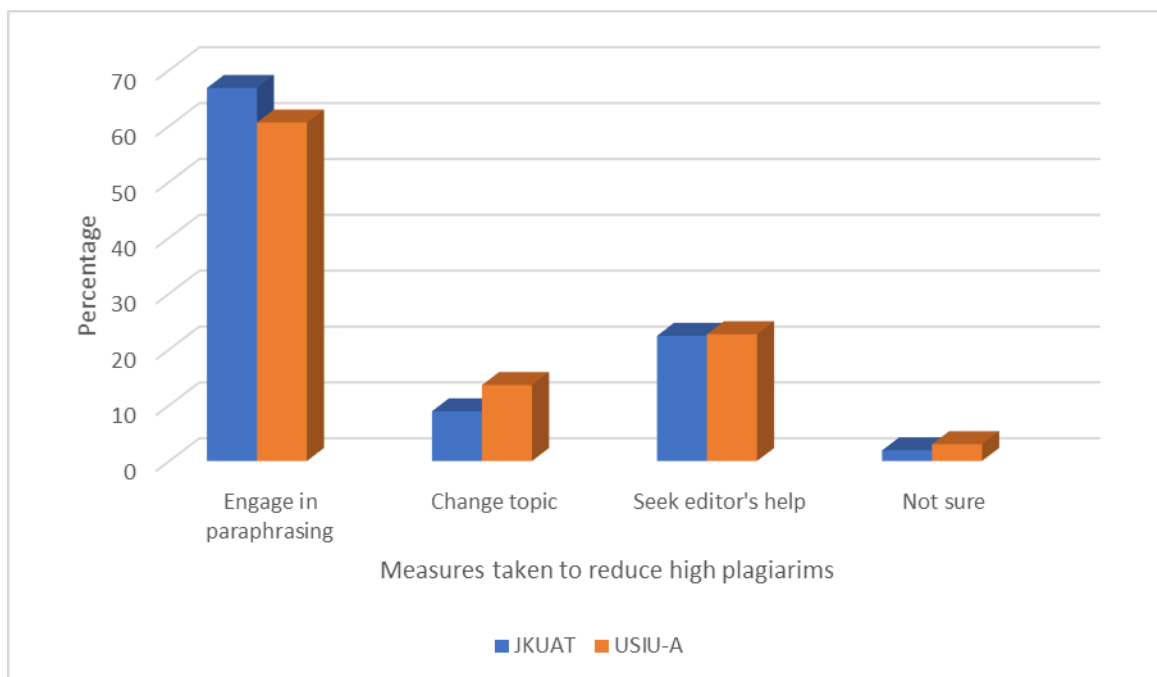


Figure 4.11 Measures taken to Reduce Similarity Index

Data presented in figure 4.11 showed that the preferred method to manage high plagiarism level of research documents was the adoption of paraphrasing technique with a popularity score of over 60% of the total responses at JKUAT and USIU-A

universities. There was also a unanimity of responses as to the second preferred choice to deal with high similarity index that is seek an editor's help by 20% of the responses. However, 10% and below of the respondents across the two sampled universities indicated that they would consider changing research topic as an option of avoiding high similarity index. Data present and analyzed clearly depicted a case of use of paraphrasing skills to reduce high text similarity captured by plagiarism software. It is noteworthy to state here that literature reviewed indicated that paraphrasing other authors research work without proper acknowledgement may amount to plagiarism, this calls for supervisors to encourage postgraduate students to seek skills of coming up with more original postgraduate research.

4.5.7 Postgraduate Students Concerns About the Use of Antiplagiarism Software

This research sought to know if the respondents had concerns relating to antiplagiarism use. Those responses were thematically analyzed as documented below:

Facilitate self-subjection of documents to antiplagiarism software:

In universities where the software is not part of the learning platform, the respondents suggested that students should be given accounts to facilitate self-subjection since the originality of work is paramount to research. Others raised concerns that the software in use had been inconsistent in giving originality where different accounts are used to check the same document. Other respondents suggested that they should be trained on how to use antiplagiarism software if self-subjection option was available. A section of the respondents who wished to have personal login credentials to antiplagiarism software also indicated that there was a need for antiplagiarism software vendors to reduce the current cost of

commercial plagiarism software subscription to make it affordable to students for private use.

Issues raised concerning similarity index results:

There were some expressed concerns that common research terms should not be highlighted by the software including references.

It was a concern to the respondents that antiplagiarism plagiarism policy makers should reasonably raise the cutoff software similarity index since most research is based on gap identification of previous concluded research.

It was also a concern for some respondents that more emphasis should be placed on citation strategies applied and less on text similarity. Other concerns touched on certain words that cannot be paraphrased including common proposal language.

Some respondents were categorical that everyone must ensure originality of work to 100% plagiarism free. Others felt that the software need to be upgraded to intelligently identify correct plagiarism and have such features as grammar check.

Introduce lessons on academic writing during course work:

There was a general agreement among a section of the respondents that students should be taught about plagiarism when they join the university at undergraduate level. They indicated that this would be early enough for them to appreciate the consequences of engaging in academic malpractices such as plagiarism. This would help them to ensure that they develop academic skills before they enroll for postgraduate programmes.

4.6 Postgraduate Students' Level of Awareness Of Plagiarism Control By Use of Plagiarism Policy

The fourth objective of this study was to understand postgraduate students' view on the existence of university's plagiarism policy. The policy gives guidelines on the measures likely to be taken if one is caught engaging in plagiarism as an academic demeanor. Kokkinaki, et al. (2015) pointed out that in the setting up of plagiarism policies, penalties and academic dishonesty, institutions should ensure its uniformity and consistency. Some universities have independent plagiarism documents while others give plagiarism warnings as statements in students' handouts or posted online at university websites.

4.6.1 Awareness of University Plagiarism Control Policy

So as to enforce adherence to academic integrity, a plagiarism control policy is vital in addition to subscribing to plagiarism control software. This study set out to understand from the respondents if they were aware of the university plagiarism control policy as they embarked on research. The responses to awareness or not of plagiarism policy are presented in figure 4.12.

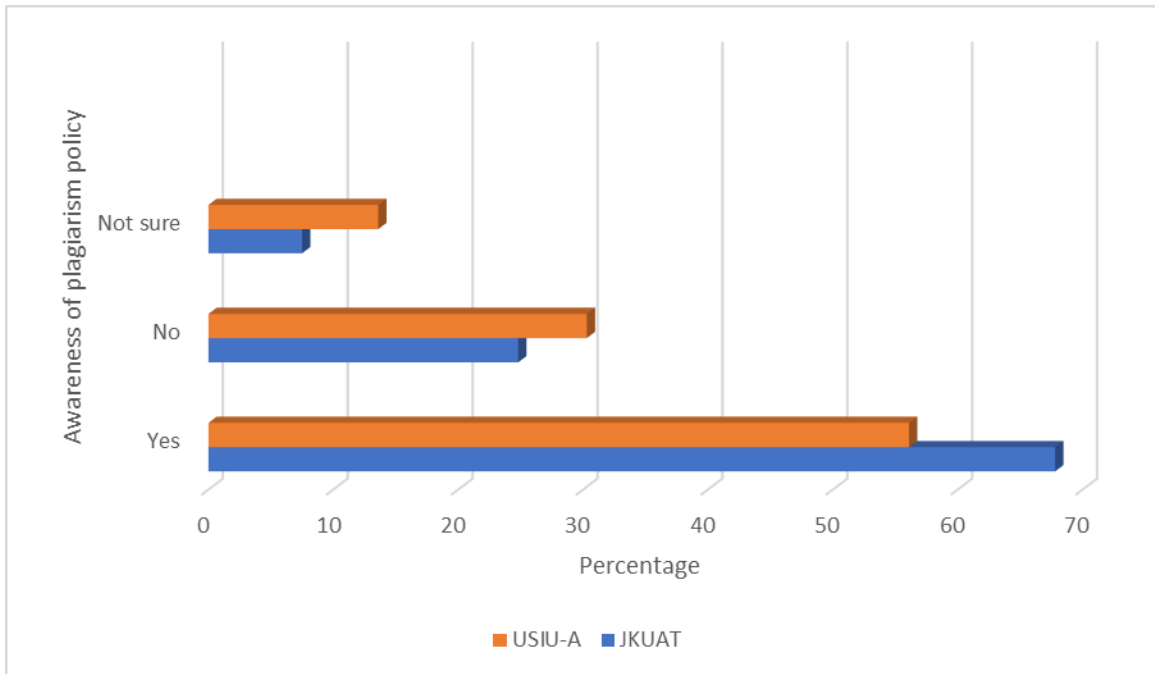


Figure 4.12: Postgraduate students’ awareness of plagiarism policy

Figure 4.12 clearly shows that close to 70% of the respondents at JKUAT were aware of the availability of plagiarism control policy. There was a very high awareness of the policy guidelines at JKUAT compared to USIU-A with an awareness slightly above 57%. However, quite a number of respondents were not aware of the existence of plagiarism policy with responses from USIU-A leading by 30% of respondents and JKUAT with a response rate of lack of awareness of 25%. Worse still, more than 10% of respondents from USIU-A indicated that they were not sure of existence of a plagiarism policy in the university while slightly less than 10% of responses from JKUAT were not sure if the university had a plagiarism policy. Plagiarism control starts with the enactment of a policy with clear guidelines of acceptable plagiarism index, citation and referencing policy and academic disciplinary penalties. These issues surrounding knowledge about plagiarism control policy have given rise to students’ perception and attitude towards use of the software.

4.6.2 Form of Plagiarism Policy

Plagiarism policy is a document that spells out such academic integrity issues touching on students' research work giving guidelines of citations, referencing style, writing style, currency of sources used, font used and relevancy of the content to the research topic (Kenyatta University, 2017). Plagiarism policy can exist in many different forms. To establish if the respondents had an idea or hint of the plagiarism policy, this study sought to know from them if they were aware of the form in which the policy existed. Table 4.7 presents the findings.

Table 4.7: Format of Plagiarism Policy

Form of plagiarism policy	JKUAT USIU-A		JKUAT USIU-A	
	Frequency		Percent	
Academic statement	134	38	62.6	57.6
Independent document	47	5	22.0	7.6
Not Aware of Existing policy	33	23	15.4	34.8
Total	214	66	100	100

Source: Field Data (2019)

Data presented in table 4.7 indicates that 62.6% of the respondents in JKUAT and 57.6% of those at USIU-A universities indicated that they were aware of the plagiarism policy as an academic statement. However, slightly 22% of responses at JKUAT acknowledged that plagiarism policy for the university was an independent document. About 8%% of responses from USIU-A stated that the universities plagiarism policy was an independent document. More 35% of the sampled respondents at USIU-A indicated that they were not aware of any existing plagiarism policy, while 15.4% of respondents at JKUAT also stated that they were not aware of existing plagiarism policy. Data presented and analysed on this question clearly depicts a situation calling for a vigorous campaign to enlighten students of the importance of familiarizing themselves with the university plagiarism control policy. The policy document existed yet some of the postgraduate students were not aware of the policy document and their contents.

4.6.3 How Postgraduate Students Came to Know About Plagiarism Control Policy

Conway (2011) noted that graduate Students may need information literacy instruction as much as undergraduates. Universities have different ways of communicating to students on the policies that touches on students' academic life. This study set out to establish the

communication channels that universities use to reach students when it comes to sensitization on plagiarism control through the use of a plagiarism policy. Figure 4.13 presents the field data collected pertaining to this question.

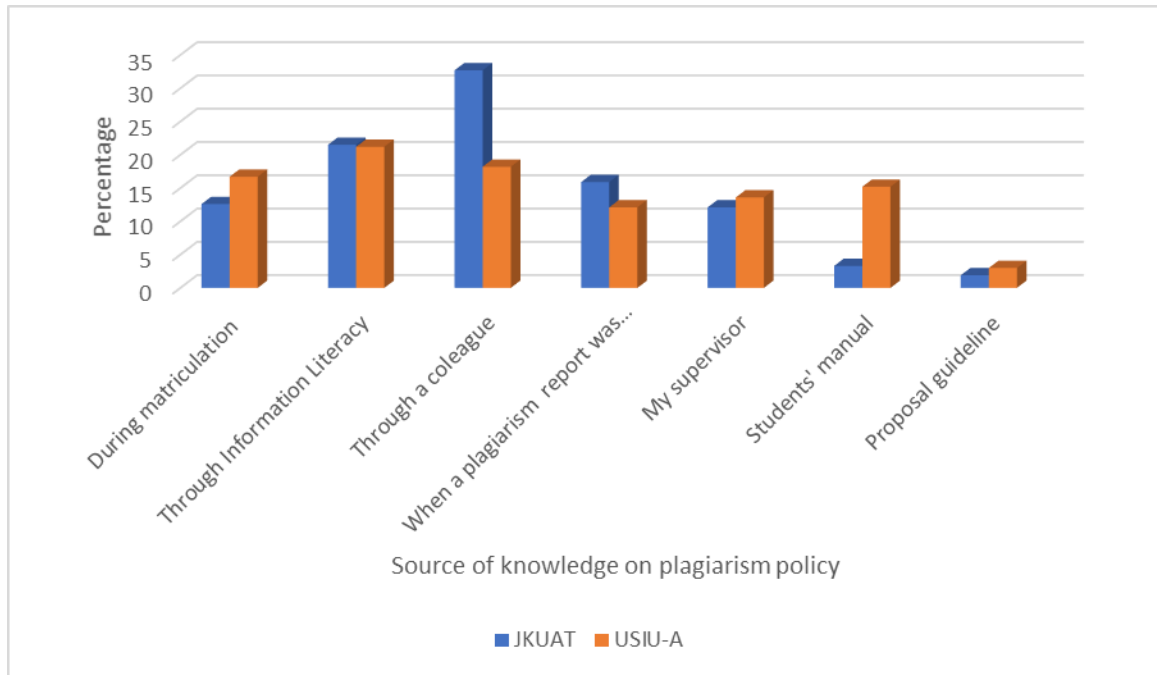


Figure 4.13: How Postgraduate Students Came to Know About Plagiarism Policy

More than 30% of the respondents from JKUAT came to know about the existence of university plagiarism policy through colleagues while information on plagiarism policy gathered from colleagues at USIU-A was slightly less 20% of the responses. Information literacy was the second highest source of knowledge on plagiarism policy for the two sampled universities with slightly more than 20% at both universities. The demand for a plagiarism certificate or report for proposals and theses due for marking or examination also played a role to knowledge on existence of the policy with less than 15% response from both JKUAT and USIU-A. Students manual as a source of information on plagiarism policy at USIU-A got a response rate of close to 15% of the university

sampled responses whereas at JKUAT the manual was a very insignificant source of information on plagiarism. University matriculation events have contributed to students' knowledge of plagiarism policy for the sampled universities by slightly more than 10%. Supervisors contributed to knowledge on existence of the policy by more 10% of responses at JKUAT compared to an index of less than a 5% of the responses at USIU-A. Proposal guideline for postgraduate students provided a minimal information on plagiarism policy for JKUAT and USIU-A with less than 5% of the responses. There is a clear indication that there was no single source of information on policy controlling plagiarism in both universities. The postgraduate boards and graduate school management of both universities needed to ensure that matters touching on plagiarism control policy are integrated within the university academic programmes.

4.6.4 Recommended Text Similarity Index by Plagiarism Policy

University of Bradford (2019) posted that text similarity index does not amount to plagiarism, but any borrowed text found in published materials or student papers that has not been acknowledged amounts to plagiarism. The level of text similarity index usually given in percentage is among the main guidelines included by plagiarism policies. The percentage range from 0-100% and depending on individual university's plagiarism policy, the recommended maximum percentage may vary depending on an individual university plagiarism control policy. This study embarked on a task to find out if the respondents had knowledge of the recommended text similarity index by the individual university plagiarism policy. The data collected on this question is presented in figure 4.14

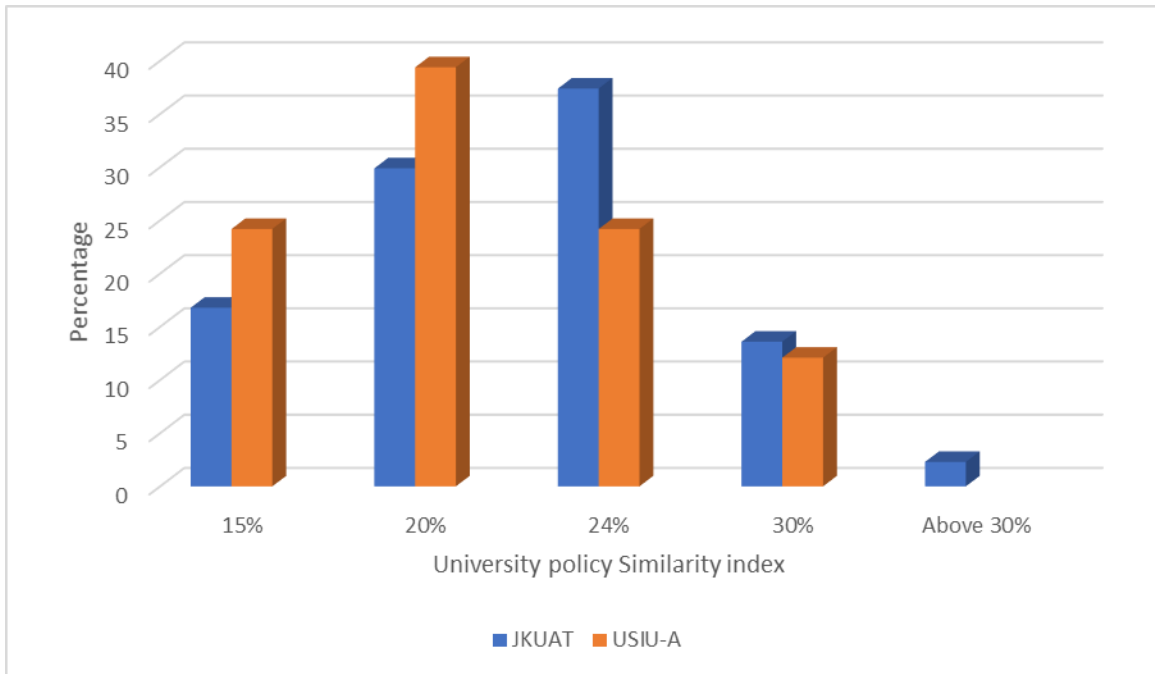


Figure 4.14 Maximum Recommended Similarity Index By Plagiarism Policy

Data presented in figure 4.14 on plagiarism policy recommended similarity index shows that majority of the respondents in JKUAT and USIU-A indicated that the plagiarism policy maximum acceptable similarity score is 24% and 20% respectively for the two universities. However, close to 37% of the respondents at JKUAT indicated 20% as the policy requirement while 15% of the responses at USIU-A proposed 15% and 24% as the policy requirement. At JKUAT 15% and above of the responses were for 15% and 30%. An insignificant number of respondents at JKUAT indicated an index of above 30% for plagiarism policy requirement. The above similarity index scenarios presented a case of students who are not sure of the required index. It is the prerogative of the sampled universities to give clear information pertaining to the policy similarity index score.

4.7 Key Informants (antiplagiarism Software Instructors/Administrators)

The final task of this study was to seek the views of antiplagiarism software instructors. They included supervisors and librarians who interacted with postgraduate students as they sought for text originality reports. Postgraduate students patronized the services offered by these two categories of staff not only to access antiplagiarism reports but also for research supervision and information on how to conduct. These key informants were registered as antiplagiarism software instructors and assisted students to subject work to antiplagiarism software in order to gauge research originality level.

Postgraduate students' perception and attitude towards plagiarism control has been impacted by the way they had interacted with supervisors and librarians/administrators as they teach and enforce adherence to the plagiarism policies of the sampled universities. This study harnessed the key informants views on postgraduate students' perception and attitude to antiplagiarism use to control plagiarism. The findings were presented below for interpretation and discussion.

4.7.1 Role Played by Key Informants in the Management of Antiplagiarism Software

Antiplagiarism software operates in a hierarchy of users. The user profiles include the admin/instructor and the restricted user depending on the plagiarism application software. Njoroge, Kamau and Thuku (2013) observed that Turnitin plagiarism software user interface has three hierarchical order of administrator, instructor and student where each user has specific roles and responsibilities. One can login to most antiplagiarism software as a student, instructor or administrator depending on the model provided. The data collected on this question was used to establish key role played by antiplagiarism

software instructors and administrators in assisting postgraduate students check their research work for originality. The findings are presented in figure 4.15.

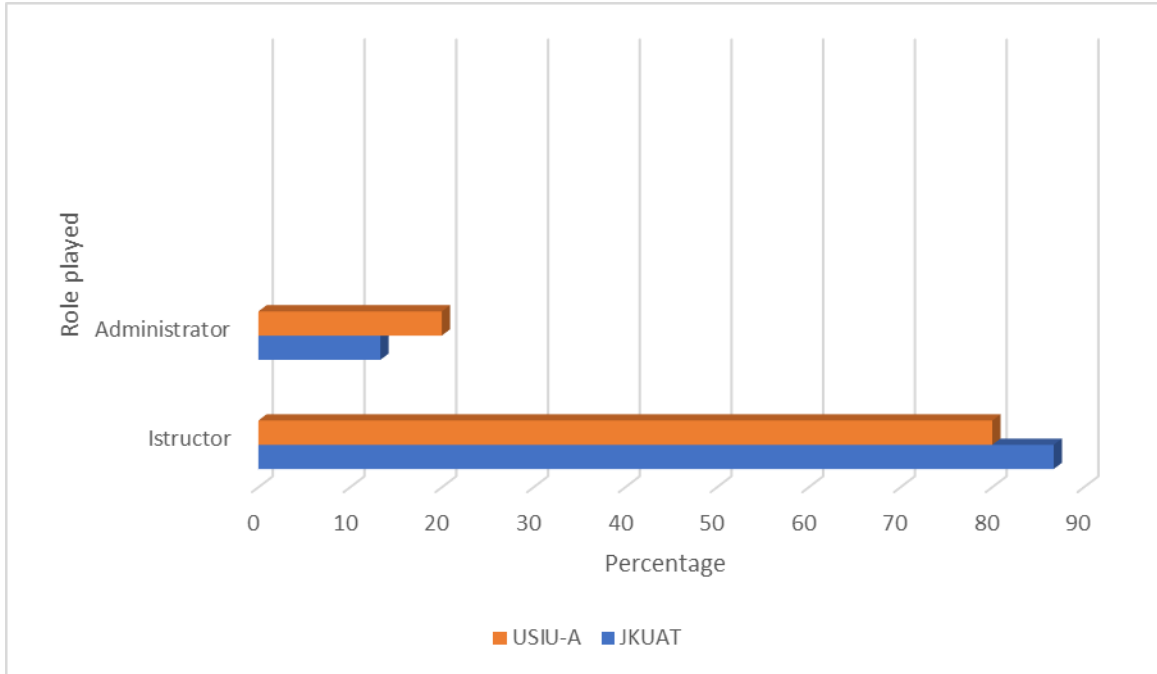


Figure 4.15: Role Played in Antiplagiarism Software by Key Informants

Analysis of data presented in figure 4.15 clearly indicates that antiplagiarism software instructors sampled from the two universities were the key role players in assisting postgraduate students who sought help to check and interpret antiplagiarism software reports of research documents for originality. JKUAT had the highest instructor response rate of 95% sampled while USIU-A had instructor response rate of 79% of the total responses. However, administrators also played a role in the software with minimal responses of less than 20% of the total sampled universities key informants. Data presented in figure 4.15 clearly indicates that the primary role that was played by supervisors and library/administrators (instructors) was that of checking students proposals, projects and theses for plagiarism. There was less interaction of supervisors and instructors with students at USIU-A for plagiarism check. The reason behind this was

that there was an integrated learning platform with SelfAssign plagiarism software for self-check. Information gathered from the key informants' experience was used by this study to balance postgraduate students' expressed perception and attitude on antiplagiarism software use to control plagiarism.

4.7.2 Antiplagiarism Software Tasks Performed Involving Students

Some antiplagiarism software can be subscribed with a standalone feature such as plagiarism check or be integrated with such features as originality checker, grammar checker and feedback studio. These features are used by supervisors and instructors to scan students' documents for myriad of errors. The respondents who were composed of librarians and supervisors of postgraduate students were asked through a structured interview to indicate the specific tasks they perform in the software involving postgraduate students. Their responses were presented in table 4.9.

Table 4.9: Tasks Performed in Antiplagiarism Software Involving Postgraduate Students

Specific Tasks	Frequency		Percent	
	JKUAT	USIU-A	JKUAT	USIU-A
Checking plagiarism level	11	2	73.3	40
Guide students on editing grammar	1	2	6.7	40
Use grading features	2	1	13.3	20
Provide feedback	1		6.7	
Total	15	5	100	100

Source: Field Data (2019)

Responses at Table 4.9 clearly indicates the tasks which were performed with antiplagiarism software at the sampled universities by supervisor, instructors and the software administrators. The heavily used function was to check research originality in terms of plagiarism level was checking plagiarism level at 73.3% of the responses from JKUAT and close to 40% of the responses at USIU-A. At USIU-A, 40% of the responses indicated that the software was equally used for grammar check to guide students where in their documents plagiarism level should be reduced. Grammar check was not a popular feature of the software used at JKUAT where the response rate to this question was 8%. The grading features of antiplagiarism software were used more in USIU-A by a 20% of the responses than at JKUAT where the response rate to this question was 13% of all the responses from the university. Antiplagiarism software was also used to provide feedback at JKUAT where the responses were 7% of all the responses from the university. Findings emanating from the data presented in table 4.9 clearly shows that originality features of the software are utilized than any other feature. Plagiarism check boundaries around originality score where postgraduate students allow documents they have authored to be subjected and archived in plagiarism software databases issues of perception and attitude to plagiarism control using antiplagiarism software.

4.7.3 Postgraduate Students Access to Antiplagiarism Services

There are few opensource or free to use plagiarism software. The most reliable softwares with several interfaces are expensive to subscribe by students. To get document trial originality test or the final report (certificate), supervisors or instructors help may be needed. However, one of the sampled universities permits self-check by students although the interpretation of the results may at times call for some assistance. This study

collected data from the sampled universities on this aspect. The responses are presented in figure 4.16

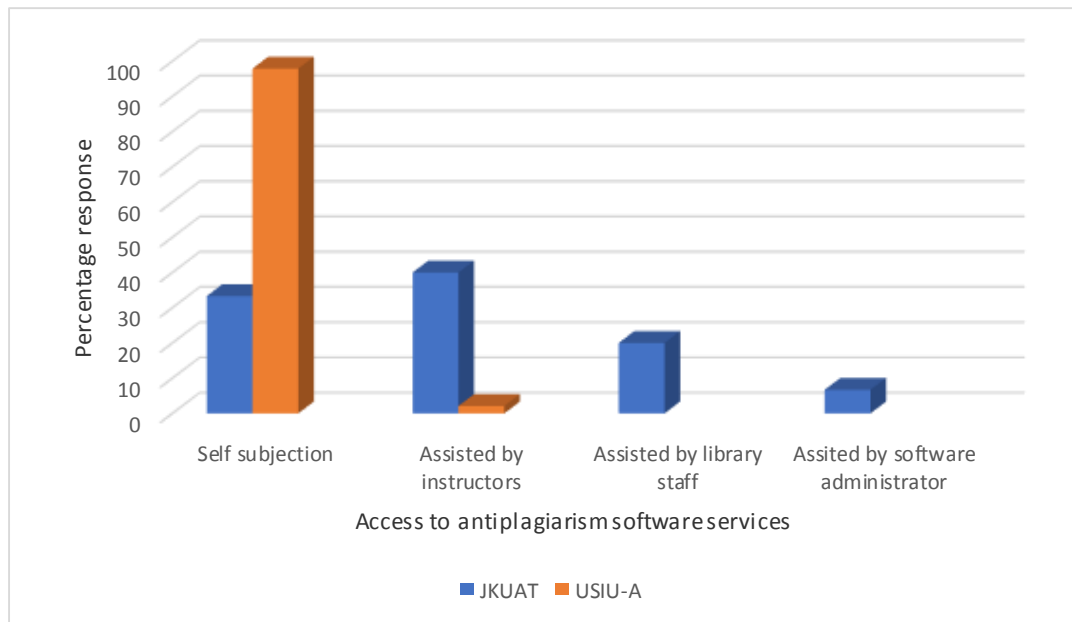


Figure 4.16: How Students Access Antiplagiarism Services

The analysis of data on postgraduate students' access to antiplagiarism software services on self-subjection (self-check) at USIU-A had the highest response rate of more than 90%. At JKUAT managed to access antiplagiarism software self-subjection services was 30% response. Close to 40% of the respondents from JKUAT university were assisted by instructors to access antiplagiarism software services compared to a less than 5% of the respondents at USIU-A on the same question. 15% of the respondents at JKUAT sourced for antiplagiarism software services from library staff while less than 10% of some responses JKUAT sought help from software administrators. Where self-check is not available, postgraduate students seeking assistance to gauge originality score get into a lot of strife. Before submission of proposals and theses for defense or supervision, the documents must be accompanied by a plagiarism report. In addition to that most students

seek trial submission services. Supervisors and instructors may not get time for repeated submissions. With this scenario in mind negative or positive perception and attitude to the requirement for plagiarism control though use of antiplagiarism software may develop among postgraduate students.

4.7.4 Common Issues Found in Students Documents Subjected to Antiplagiarism Software

Antiplagiarism software can be used to check common errors associated with documents including grammar and punctuation. This study collected data on plagiarism level which the key informants generated with antiplagiarism software. The instructors were also in a position to gauge the students' academic competencies as they examined their proposals and theses. The results for the analyzed data are presented in table 4.10

Table 4.10: Common Issues Found in Students Documents

Issues found	Frequency		Percent	
	JKUAT	USIU-A	JKUAT	USIU-A
Inadequate writing skills	4		26.7	20
Poor citation and referencing skills	1			
High plagiarism levels	11	3	73.3	60
Poor skills on antiplagiarism software use	1		20	
Total	15	5	100	100

Source: Field Data (2019)

The data presented in table 4.10 indicated that high plagiarism cases were reported in JKUAT by 73.3% of the responses compared to USIU-A with 60% of the sampled respondents at the university. Similarly, lack of writing skills among the respondents was

reported more at JKUAT by 28% of the university's sampled respondents than at USIU-A with 20% of the responses. Key informants at USIU-A reported a lack of inadequate writing skills among the respondents with 20% of the responses from the university. The data presented and analyzed indicates that the issues bewildering most postgraduate students at the sampled universities was high plagiarism level that was reported higher at JKUAT than at USIU-A. Access to plagiarism software through self-subjection has boosted students at USIU-A to have less problems with high plagiarism level since they were constantly using the software on their own.

4.7.5 Opinion on Students' Attitude Towards the Use of Antiplagiarism Software

The key informants were asked to rate their opinion on postgraduate students' attitude towards antiplagiarism software use. It is mandatory for students undertaking postgraduate research to subject their documents to antiplagiarism software and produce an originality report. Data obtained from the key informants' on this question was presented for analysis in Figure 4.18.

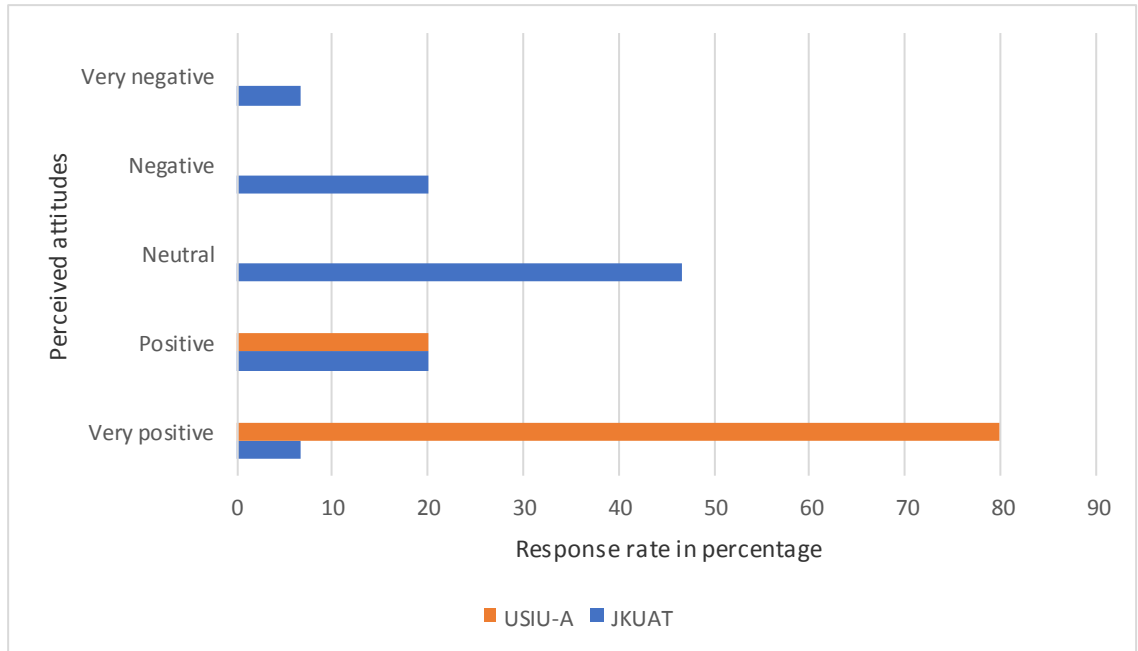


Figure 4.18: Opinion on Postgraduate Students’ Attitude Towards Antiplagiarism Use.

The data presented at figure 4.18 indicates that the overall opinion of the key informants on postgraduate students’ attitude towards antiplagiarism software use at USIU-A is very positive by 80% of the university total responses. Less than 10% of the respondents at JKUAT were very positive towards antiplagiarism software use. However, 20% of the respondents at both universities indicated that students were positive towards the software use. At JKUAT, 47% of the respondents indicated that postgraduate students were neutral towards antiplagiarism software while 20% of the key informants in the same university reported that students were negative towards application of the software to control plagiarism. Worse still from JKUAT, there were reported indications of less than 10% of the respondents who were very negative about using antiplagiarism software. Views gathered from the key respondents showed that students access to antiplagiarism software had boosted their positive attitude towards its use to control

plagiarism. On the other hand, indirect access to plagiarism software services contributed to a negative attitude towards antiplagiarism software by postgraduate students at JKUAT.

4.7.6 Average Similarity Score Attained on Document First Subjection to Antiplagiarism Software

The text similarity score of postgraduate students' proposals and theses can be high on the first check. The percentage level is usually scaled down to the acceptable level through paraphrasing the identical similar texts and the originality checked again. However common research language as found in university proposal structure is repeatedly identified as many times as students have used the same words. This can be overcome by setting up the software being used to ignore such common phrases. Students doing law have to make long quotes and those in pure sciences where vocabulary control is very limited to specific formulas and symbols that have been repeatedly used in online documents over the internet. This study sought to confirm from instructors the average similarity score attained when students first scanned documents for plagiarism. The results of the survey of antiplagiarism software supervisors and instructors/administrators experiences are presented in figure 4.19.

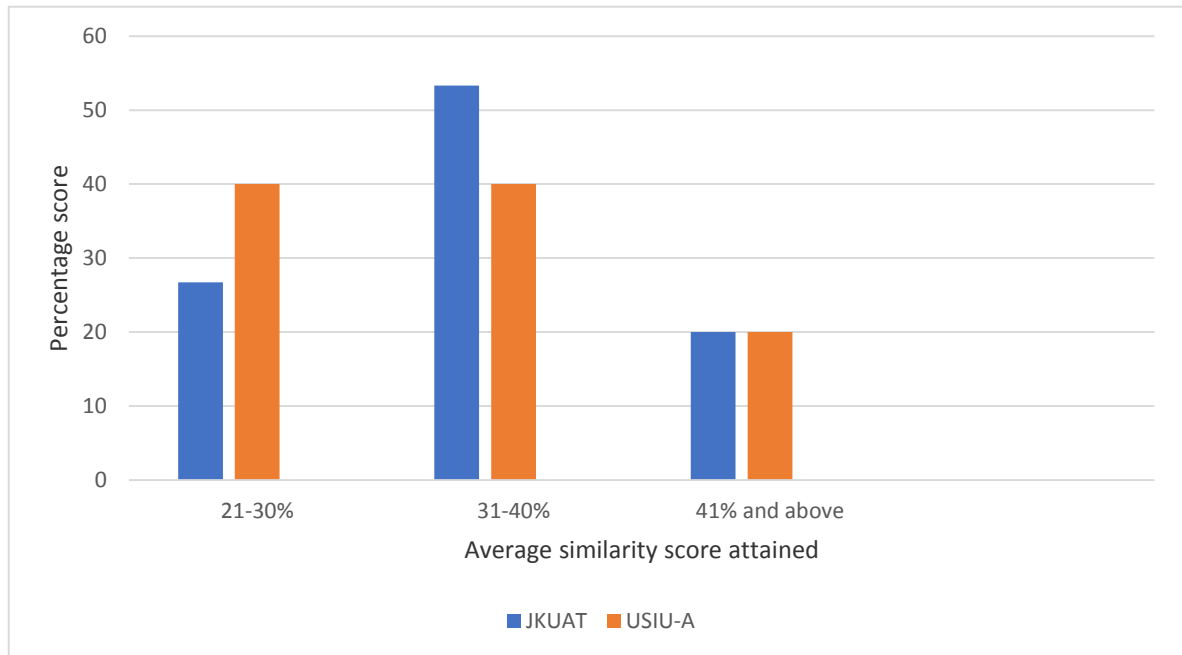


Figure 4.19: Similarity Score Attained After First Subjection of Research to Antiplagiarism Software

The data presented in table 4.19 shows that at JKUAT over 50% of students' documents that were subjected to antiplagiarism check by instructors had a similarity index of 31-40%. At USIU-A, 40% of the postgraduate students' research documents that were subjected to antiplagiarism software check had a text similarity score of 31-40% and 21-30% on equal footing. At JKUAT, 27% of the documents subjected for check by instructors attained a similarity index of 21-30%. At both sampled universities, 20% of the documents subjected to antiplagiarism check were reported to attain a similarity score of 41% and above. The data presented and analyzed in table 4.19 indicates that few students documents were able to low similarity index and that there was still a need for resubmission after sanitizing them. In a situation where re-submission services are easily accessible, negative perception and attitude towards plagiarism control using a software are likely to arise.

4.7.7 Opinion on the Effectiveness of Antiplagiarism Software to Abate Plagiarism

As the key stakeholders in the control of plagiarism at universities The supervisors and instructors/administrators were asked to rate the effectiveness of antiplagiarism software to abate plagiarism. They had a wide knowledge and experience while marking and grading postgraduate students' research documents. Their sampled opinions are presented in figure 4.20.

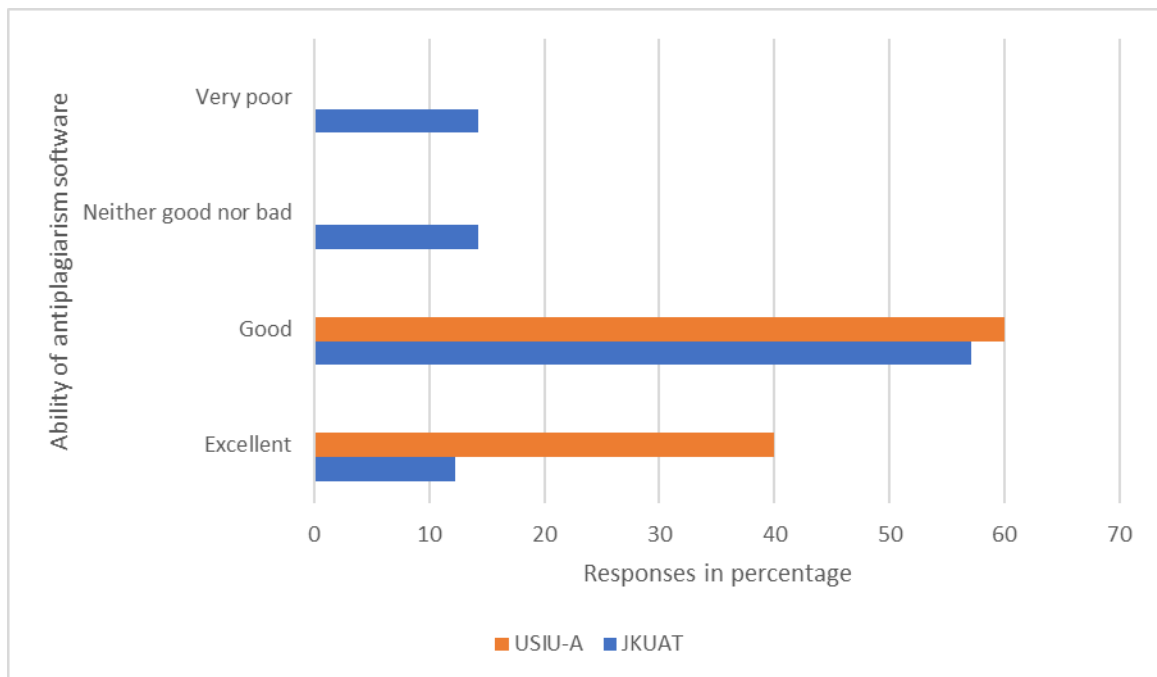


Figure 4.20: Opinion Of Supervisors and Instructors/Administrators n The Effectiveness of Antiplagiarism Software to Abate Plagiarism.

Data presented in figure 4.20 gives antiplagiarism software a clear lead of being good in abating acts of plagiarism by 60% of the sampled instructors at USIU-A and 58% at JKUAT. However, there was a marginal difference between the two sampled universities on the excellence rank where USIU-A was in the lead with 40% of the respondents and 13% at JKUAT giving it an excellent rank in detecting plagiarism. However, more than 10% of the respondents at JKUAT indicated that antiplagiarism software was neither

good nor poor in abating plagiarism among postgraduate students. This study was about perception and attitude towards antiplagiarism software use to control plagiarism. The experience of supervisors and instructors/administrators was analyzed from data presented in figure 4.20. It is clear that their expressions are based on life experiences while subjecting students' proposals and theses to the software. At USIU-A, there was a more positive attitude towards the software use than at JKUAT which is a public university. Data collected and analyzed shows that accessibility of the software to supervisors and instructors has contributed a positive perception and attitude at USIU-A and a bit of negative perception and attitude towards its use to control acts of plagiarism among postgraduate students at JKUAT.

4.7.8 Instructors and Administrators' Observations on Postgraduate Students Use of Antiplagiarism Software.

The following thematic areas were identified by instructors as they patronized antiplagiarism software services:

Fear and uncertainty when approaching supervisors for originality check:

Students were reported to become nervous as they approached supervisors for originality check of proposals and theses. JKUAT 1 reported:

"I noticed that there has been a general tenseness among most students who were fearing to be caught with documents with high plagiarism".

An antiplagiarism software in one of the sampled universities does not provide for trial submission, and so it meant "sudden death" for the students to do any plagiarism check.

USIU-A 1 summarized:

“Our students seemed to have some reservations about submitting their documents for plagiarism check because there was no provision for trial submission”

High preference of trial submissions:

Postgraduate students preferred to perform trial submissions using other software accounts holders whom they trusted with the results so as to give room for trial submissions and document sanitation before checking text similarity with supervisors.

JKUAT 2 remarked:

“students preferred to use another software to scan for plagiarism elsewhere until they were sure that once checked by supervisors, the documents would meet the prescribed threshold of the antiplagiarism policy”.

The presence of high similarity on submitted documents by supervisors signified that students were not using supervisor’s software account to sanitize research documents.

USIU-A 2 observed:

“There was high inconsistency in that similarity index continued to increase among students’ documents submitted to antiplagiarism software signifying that different accounts were used to do trial submissions before submission for marking”.

JKUAT 3 stated:

“students should be trained on how to use antiplagiarism software so that they can scan documents on trial basis for plagiarism independently until they are ready to be shared with supervisors”

On the same thematic area, USIU-A 3 pointed out that:

“students are continuously trained and given antiplagiarism software accounts so that they can do self-submission of their documents through blackboard that is integrated with the subscribed SafeAssign antiplagiarism software”

Poor citation and reference management skills:

In addition to high plagiarism challenges, majority of the sampled instructors agreed that many students lacked adequate academic skills. This according to them was evident of high plagiarism seen after the software results were downloaded.

JKUAT 4 remarked:

“There was evidence of proposals and theses lacking proper text attribution of works used. This resulted to numerous cases of documents lacking proper adherence to the recommended citation and reference management style and lack of author attribution to cited text”.

One of the concerns of instructors is that, antiplagiarism software had been used as the “third supervisor”. Once documents attained the approved citation percentage, according to some key informants they were not thoroughly scrutinized for other errors. USIU-A 4 reiterated that:

“Although documents may attain originality requirement, some of the students research write up were not academically to the standard because antiplagiarism software does not guarantee feasibility, authenticity and impact”.

Poor academic writing skills:

JKUAT 5 argued that:

“Students research manuscripts had cases of grammatical errors and inconsistent flow of ideas confirming that text was lifted from sources not acknowledged and that there was a need for supervisors to understand their students’ academic competency”.

On the same thematic topic, USIU-A 5 concluded that:

“antiplagiarism software does not guarantee feasibility, authenticity and impact of research work being done by students and therefore supervisors ought to ensure that students have adequate knowledge on what they are researching on”.

Universities possess postgraduate guideline for students on how to undertake research from concept paper, proposal to full theses or dissertation. However, there was a growing concern that antiplagiarism software still highlight commonly used proposal vocabularies for which students cannot paraphrase. On this thematic area end JKUAT 6 noted:

“The antiplagiarism software in use tends to highlight common research language which has become a concern to the students because they cannot change the common research language that is unique to the university which appears as plagiarism owing to repeated use by previous student researchers”

USIU-A 6 on the same breadth remarked:

” Antiplagiarism software should be authored in a way that common words that one expects to see in research works are automatically filtered or excluded.

Researchers who are doing pure sciences face many related challenges because the web is full of common words, formulae and symbols that have been used by other scholars and hosted online”.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter provides a summary of the findings and the conclusions that have been adduced from the objectives. It further offers recommendations based on review of literature and field study findings related to use of antiplagiarism software by postgraduate students within the sampled universities and beyond. The chapter specifically offers a summary of the conclusions and recommendations regarding postgraduate students' perception and attitude to use of antiplagiarism software to control plagiarism.

5.2 Summary

The study interrogated and established the pertinent issues surrounding postgraduate students' perception and attitude towards the use of antiplagiarism software. There were some differences and similarities of information that was gathered from JKUAT and USIU-A which are public and private universities respectively. Below is the summary, conclusions and recommendations that were guided by objectives of the study.

5.2.1 Postgraduate Students' Awareness of Various Types of Plagiarism

Literature reviewed indicated that there was some glaring evidence of plagiarism among postgraduate students despite an overwhelming awareness of the university plagiarism policy. Data collected from the field had also showed that there is a general acknowledgement of plagiarism being practiced among postgraduate students. Postgraduate students sampled from the two universities proved that indeed students were

aware of minimal word switch as well as full or blatant plagiarism. Consequently, it emerged that the application of antiplagiarism software by universities to abate plagiarism was a good idea. Plagiarism at proposal stage took the center stage. The study concluded that at this stage the students did not possess adequate writing skills resulting to engaging more on copy and paste plagiarism. Consequently, due to high levels of plagiarism this triggered the adopting of document “sanitation’ or paraphrasing strategy. This fact was supported by the number of times same documents were subjected to plagiarism check. The study established that, majority of postgraduate students subjected their documents for antiplagiarism check twice. Documents had very high levels of text similarity during the first subjection. Most of the postgraduate students in the two sampled universities agreed that plagiarism software are accurate in showing text similarity.

The following was the summary of findings on postgraduate students’ awareness of various types of plagiarism:

There was more help given among student colleagues at USIU-A compared to JKUAT on sources of antiplagiarism software. Supervisors played an equal role in sensitizing students on the availability of plagiarism software. At both universities, the respondents were aware of full (blatant) plagiarism. Minimal word switch was practiced more in JKUAT compared to USIU-A.

Proposals were checked more than theses and projects, however, there was more checking of proposals at USIU-A compared to JKUAT. At JKUAT, documents were checked more than once compared to USIU-A where majority of respondents agreed that they did it only once. However, documents were checked for plagiarism once or twice in

both universities. More plagiarism was reported in JKUAT than in USIU-A at the first subjection. In both universities, students agreed to have gone through a rigorous coursework which endowed them with skills to avoid engaging in plagiarism, however, the plagiarism results during the first instance subjection were very high.

5.2.2 Postgraduate Students' Perceptions of Antiplagiarism Software Use to control plagiarism

The study reached at a conclusion that postgraduate students' perception of antiplagiarism software in use was positive as the software was termed as accurate in text matching. Similarly, its ability to curb plagiarism was rated as good. On the other hand, antiplagiarism software ability to check plagiarism was perceived positively. As a result, the antiplagiarism software in use was perceived as good by students and at times excellent in curbing plagiarism. Due to the antiplagiarism software ability to match similar text online, the software was considered a useful learning tool and less of punitive measure. This research concluded that antiplagiarism software alone cannot be used as a tool to deter plagiarism giving a clear indicator for supervisors to scrutinize further proposals and theses for possible plagiarism. This research further discovered that supervisors and library staff who were categorized by this study as instructors played a key role in assisting postgraduate students to scan their documents for plagiarism. Thereby helping students to observe academic ethics.

5.2.3 Postgraduate Students' Attitudes on Antiplagiarism Software Use to control plagiarism

Literature reviewed established the process of attitude formation as a result of a positive or negative perception. Three variables were used to rate postgraduate students'

perception and attitude to antiplagiarism use; that antiplagiarism software use was introduced as a useful learning tool which was a positive attitude, that the software was used as a tool to deter plagiarism which was a negative attitude and that the software was introduced as a punitive tool which again was a negative attitude. This study concluded that antiplagiarism software was regarded as useful learning tool by students from both universities because it aided them in highlighting text similarity when conducting plagiarism tests. The study further concluded that, antiplagiarism software was regarded by students at both sampled universities as very important tool for checking research originality score. There was a very strong support for continued use of antiplagiarism software by the universities as a measure to curb plagiarism. This research further established that although there was a remarkable adoption of antiplagiarism software by universities to curb plagiarism, there was a very strong case for supervisors to scan through students' work to confirm originality. The study established that antiplagiarism software alone cannot be used to stop students from engaging in plagiarism. Consequently, this research concluded that there was a high dependence of antiplagiarism software by universities to ensure research originality. Respondents from both universities agreed that self-subjection of documents to antiplagiarism software was the best option as was the case in one of the universities sampled.

5.2.4 Postgraduate Students' Level of Awareness of Plagiarism Policy

The university Plagiarism Policy is among the key documents or guidelines that postgraduate students should be aware of. This study concluded that majority postgraduate students got to know about the existence of plagiarism policies when they started carrying out research. The study further concluded that this knowledge is not immediately acquired by the students until such a times when they start embarking on

research and asked to produce a plagiarism report. The findings of the study showed that some students were not sure of the existence of plagiarism policy while others did not know about its existence at all. Findings at the time of this study indicated that the universities sampled did not possess independent Plagiarism policy documents. This was evidenced by the availability of scanty information hosted online on the university websites warning students of engaging in plagiarism. The students' knowledge of plagiarism policy was acquired through colleagues or during library instructions by librarians. Further, it was not clear to the respondents the maximum acceptable plagiarism level.

5.2.5 Information Gathered From Instructors (Supervisors and Librarians/Software Administrators)

Students were allocated accounts to perform independent document subjection at USIU-A and assisted to use standalone antiplagiarism software as the case for JKUAT. They also used librarians or software administrators to check text originality for them. Librarians and software administrator's played a key role to use of antiplagiarism software since they were a major stakeholder to use of information and plagiarism control. The study findings show that supervisors were well suited to assist students in accessing plagiarism software services as they marked their proposals and theses. Postgraduate students' attitude to antiplagiarism software was rated neutral by supervisors, librarians and software administrators.

5.3 Conclusion

Students' do possess some perception and attitudes on use of antiplagiarism software to control plagiarism. The enforcement of antiplagiarism software use has created diverse perception and attitude among postgraduate students. Both public and private university students inhibit perception and attitude towards the introduction of antiplagiarism software use to control plagiarism.

This study concluded that there are some convergencies from students and key informants at both sampled universities in access to antiplagiarism software services. Similarly, there was some divergencies at the sampled universities that are public and private in terms of the type of antiplagiarism software in use. This study on postgraduate students' perception and attitude to plagiarism control by use of a software was well deserving.

5.4 Recommendations

Information ethics needs to be entrenched into the curriculum and taught to all university students. University plagiarism policy makers other hand needs to consider students views before implementing the use of software to control plagiarism. Similarly, the archiving of university students' manuscripts in electronic databases by software owners for comparison use by institutions without their written consent amounts to a copyright violation.

So as to demonstrate clearly the results of plagiarism, instructors can give students essay writing assignments during coursework and ask them to copy as much as possible before subjecting their documents to antiplagiarism software check.

Universities and colleges should introduce the use of text matching software from diploma and undergraduate level.

Paraphrasing plagiarized text without proper acknowledgement of authors work should still be considered as plagiarism This study postulates that document sanitation amounts to word switch plagiarism. This leaves room for one-time submission termed as “sudden death” as a decisive plagiarism control measure.

5.5 Recommendation for Further Research

Due to time constraints, this study would not comprehensively cover the topics below and recommends a comprehensive research to be undertaken:

- i) To establish the level of awareness of academic integrity among students in universities using antiplagiarism software versus those whose universities have not yet introduced the software use.
- ii) To carry out a study to establish the extent to which paraphrasing practices among antiplagiarism users in academic cycles may be considered as a form of plagiarism owing to the alteration of the original text borrowed.
- iii) To carry out a further study on unreported plagiarism cases involving style plagiarism, idea plagiarism, metaphor plagiarism and cross-lingual plagiarisms.

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APPENDICES

APPENDIX I: POSTGRADUATE STUDENTS QUESTIONNAIRE ON PERCEPTION AND ATTITUDE ON ANTIPLAGIARISM SOFTWARE USE TO CONTROL PLAGIARISM

PREAMBLE: The respondents to this questionnaire should be postgraduate students who have used antiplagiarism software to check their proposals/thesis for plagiarism.

SECTION A: GENDER AND PROGRAMME OF STUDY

1. Gender

Male

Female

2. Level of Postgraduate study

Masters

PhD

SECTION B: POSTGRADUATE STUDENTS' LEVEL OF AWARENESS OF TYPES OF PLAGIARISM

1. Antiplagiarism software is used to check documents for plagiarism, how did you come to learn about the software?

i) Through a colleague

ii) During Library induction

iii) Through my Supervisor/lecturer

iv) Online on university website

v) During the university matriculation

2. Plagiarism software is used to gauge originality level of research documents.
Please identify in the list below the highly practiced plagiarism you are aware of.

- i. Full or blatant plagiarism
- ii. Partial or potluck paper plagiarism
- iii. Minimal or word switch plagiarism
- iv. Mosaic (labour of laziness)
- v. Self-stealing
- vi. Ghost writer
- vii. Any other(s) _____

3. How did you get your awareness information on plagiarism?

4. An antiplagiarism software is used for text matching to establish the percentage of text similarity against those documents already online. Which of the choice(s) below have you used the software to check?

- i) Proposal
- ii) Thesis/project
- iii) Project

5. How many times did you subject your document to antiplagiarism software for screening?

before you attained the recommended similarity index?

- i) Once
- ii) Twice
- iii) Thrice
- iv) More than thrice
- vi) Never

6. What was the level of similarity percentage during your first submission?

- i) 0- 24%
- ii) 25-49%
- iii) 50-74%
- iv) 75-100%

7. Tick the most appropriate choice about this statement. I have gained enough academic writing skills to help me avoid engaging in plagiarism.

Response	Rate (√)
Strongly Agree	
Agree	
Don't Know	
Disagree	
Strongly Disagree	

SECTION C: POSTGRADUATE STUDENTS' PERCEPTION OF ANTI- PLAGIARISM SOFTWARE USE

1. Please rate (√) the accuracy of antiplagiarism software in use for checking plagiarism on a scale of 1 to 5 where 1 is very inaccurate and 5 is very accurate

1	2	3	4	5
Very Inaccurate	Inaccurate	Less Accurate	Accurate	Very Accurate

2. Based on the choices below, how would you rate (√) the ability of antiplagiarism software to curb plagiarism?

No.	Response	Rate (√)
1.	Excellent	
2.	Good	
3.	Neither good nor poor	
4.	Poor	
5.	Very poor	

3. For each of the following statements, please rate (√) the response that best describes the extent to which you agree or disagree with the statement.

Statements	Strongly Agree	Somewhat Agree	Neither Agree NorDisagree	Somewhat Disagree	Strongly Disagree
Antiplagiarism software is a useful learning tool					
Antiplagiarism software is used as a tool to deterrent plagiarism					
Antiplagiarism software is used as an academic punitive tool					

4. There is no need for supervisors to scrutinize students' documents after attaining the required antiplagiarism software originality index. Please rate (√) the response that best describes the extent to which you agree or disagree with this statement.

Response	Rate (√)	%
Strongly Agree		
Somewhat Agree		
Neither Agree Nor Disagree		
Somewhat Disagree		
Strongly Disagree		

5. Please explain your response to question 4 above.

6. Checking of proposals/thesis requires constant use of the antiplagiarism software, who assisted you to do trial submission(s)?

Response	Rate (√)
My supervisor	
Antiplagiarism Software administrator	
Librarians	
Self	
Used other software	

SECTION D: POSTGRADUATE STUDENTS' ATTITUDES ON ANTIPLAGIARISM SOFTWARE USE

1. The university antiplagiarism software is important to research.

Usefulness of antiplagiarism software to research	Rate (√)
Strongly Agree	
Agree	
Undecided	
Disagree	
Strongly Disagree	

2. Do you think it is important to check originality of research through use of antiplagiarism software?

Importance of antiplagiarism software in checking research originality score	Rate (√)
Very Important	
Important	
Moderately Important	
Of Little Importance	
Unimportant	

3. The use of antiplagiarism software by universities is an effective measure to curb student plagiarism.

Reason for subscribing to antiplagiarism software to use it solely as a deterrent for plagiarism	Rate (√)
Strongly Agree	
Agree	
Undecided	
Disagree	
Strongly Disagree	

4. Use of antiplagiarism software alone cannot stop students from committing acts of plagiarism?

Antiplagiarism software alone cannot stop acts of plagiarism	Rate (√)
Almost always True	
Usually True	
Occasionally True	
Usually Not True	
Almost Never True	

5. I am not sure if my research is original but I have to frequently depend on antiplagiarism software to measure its originality.

Antiplagiarism software dependence for originality score	Rate (√)
Very frequently	
Frequently	
Occasionally	
Rarely	
Never	

6. If your results are higher than the recommended similarity index, what measures are you likely to take?

- i) Engage in paraphrasing exercise
- ii) Change topic
- iv) Seek an editor's help
- v) Any other option _____

7. What would be your concern(s) if any about the use of antiplagiarism software to check students' work that needs to be addressed?

SECTION E: 4 POSTGRADUATE STUDENTS AWARENESS OF UNIVERSITY PLAGIARISM POLICY

1. Are you aware of the existence of the University's plagiarism policy?

- i) Yes
- ii) No
- iii) Not sure

2. If your response to question 1 is yes, is the plagiarism policy a statement within the academic code of conduct of the university or a separate document?

- i) Academic statement
- ii) Independent document
- iii) Not Aware of Existing policy

3. If your response to question 1 is 'yes', how did you get to know about the existence of the plagiarism policy?

- i) During matriculation
- ii) Through Information Literacy (IL) programme
- iii) Through a colleague
- iv) When I was told to bring a plagiarism report
- i) Any other way _____

4. What is the maximum recommended similarity index in the University plagiarism policy?

- i. 15%
- ii. 20%
- iii. 24%
- iv. 30%
- v. Above 30%

**APPENDIX II: KEY INFORMANTS: ANTIPLAGIARISM SOFTWARE
INSTRUCTORS (SUPERVISORS, LIBRARIANS /ADMINISTRATORS)**

1. What role do you play in the management of antiplagiarism software?
 - i) Supervisor
 - ii) Instructor
 - iii) Software Administrator

2. Depending on your choice in question 1 above, what specific tasks do you perform involving students that require use of antiplagiarism software?
 - i. Checking plagiarism level
 - ii. Guide students on editing grammar
 - iii. Use Grading features
 - iv. Provide feedback

3. Students need access to antiplagiarism software to check originality of their research. How do they access the software services?
 - i. Self-subjection
 - ii. Assisted by instructors
 - iii. Assisted by library staff
 - iv. Assisted by software administrators
 - v. Any other option _____

4. According to your experience, what common issues can be found in students documents subjected to the antiplagiarism software?
 - i) Inadequate writing skills
 - ii) Poor citation and Referencing skills
 - iii) High plagiarism levels
 - iv) Poor skills on antiplagiarism software use

5. Please rate (√) below your opinion on students' attitudes towards the application of antiplagiarism software to check originality of their research

Perceived Students attitudes	Rate (√)
Very positive	
Positive	
Neutral	
Negative	
Very negative	

6. On average, what is the similarity score attained by students on their first subsection of research works to antiplagiarism software?

- i. 0%-10%
- ii. 11%-20%
- iii. 21%-30%
- iv. 31%-40%
- v. 41% and above

7. What is your overall opinion of the effectiveness the use of antiplagiarism software to abate plagiarism among postgraduate students?

Ability of antiplagiarism software to detect plagiarism	Rate (√)
Excellent	
Good	
Neither good nor poor	
Poor	
Very poor	

8. What other observations/reservations if any have you noted while offering antiplagiarism software services to postgraduate students?

**APPENDIX III: CURRENT ANTIPLAGIARISM SOFTWARE IN USE TODAY
WITH CORRESPONDING PLACE OF ORIGIN AND COMMERCIAL STATUS**

No.	Name of Software	Origin	Commercial/Open source
1.	Docoloc	Germany	Commercial
2.	iThenticate	California	Commercial
3.	PlagTracker	Ukrainian	Commercial
4.	PlagAware	Germany	Commercial
5.	Plagiarism Checker	New York	Open Source
6.	PlagScan	Germany	Free
7	SafeAssign	US	Commercial
8.	StrikePlagiarism.com	UK	Commercial
10.	Turnitin	California	Commercial
11.	Urkund	Sweden	Commercial
12.	Viper	England	Open source
13.	WriteCheck	California	Open Source

Source: Shankar & Ramasesh, (2015). Antiplagiarism Software: a tool to ensure quality research output.

APPENDIX IV: CONSENT LETTER FOR RESPONDENTS

Dear Participant,

My name is David Mutiso. I am a Postgraduate student at Kenyatta University conducting a research on “use of antiplagiarism software on research work: a perception and attitude among postgraduate students”. The information that you give in this questionnaire will be used by the Universities under study to improve on their institutional policies on plagiarism.

The Participation in this study will require your consent to fill in the questionnaire on the above topic. You also have the right to refuse to participate in this study because your participation in the study is voluntary. You may ask questions related to the study at any time. You may also refuse to respond to any of questions or an interview at any time.

The questionnaire on your perceptions and attitudes to the antiplagiarism software will be administered by its administrators (Supervisors or Library staff) and will not be embarrassing or make you feel uncomfortable.

If you participate in this study you will help us assess the current postgraduate students’ perceptions and attitudes on subjection of their work to antiplagiarism software and the findings will help the university improve on the software implementation procedure and address your concerns.

Your name will not be recorded on the questionnaire and everything will be kept private and confidential and the data destroyed at the most appropriate time when the research is successfully completed.

APPENDIX V: BUDGET FOR THE STUDY

Item	Item per Unit Cost	Total Cost
Printing paper	600 @ realm	4,000
Printing	10 copies	4,000
Photocopying	8 copies	10,000
Binding	300 @ copy	2, 000
Storage medium, (CD/DVDs, Diskettes)	3 pcs	2,000
Proposal writing	1 copy	50, 000
Data collection	3 Assistants	20, 000
Data analysis	2 consultants	50, 000
Report writing	2 -Editor & Proof reader	30, 000
Contingency funds	Various	20, 000
Total Cost (Ksh)		192, 000

APPENDIX VI: RESEARCH AUTHORIZATION FROM GRADUATE SCHOOL



KENYATTA UNIVERSITY
GRADUATE SCHOOL

E-mail: dean-graduate@ku.ac.ke

Website: www.ku.ac.ke

P.O. Box 43844, 00100
NAIROBI, KENYA
Tel. 8710901 Ext. 57530

Our Ref: E65/OL/CTY/26111/2015

DATE: 28th November, 2018

Director General,
National Commission for Science, Technology
and Innovation
P.O. Box 30623-00100
NAIROBI

Dear Sir/Madam,

RE: RESEARCH AUTHORIZATION FOR DAVID KYALO MUTISO – REG. NO. E65/OL/CTY/26111/2015.

I write to introduce David Kyalo Mutiso who is a Postgraduate Student of this University. The student is registered for MLIS degree programme in the Department of Library and Information Science.

David intends to conduct research for a MLIS Project Proposal entitled, “Perception and Attitude of Postgraduate Students towards Anti-plagiarism Software use on Research Work in JKUAT and USIU-Africa Universities in Kenya”.

Any assistance given will be highly appreciated.

Yours faithfully,

A handwritten signature in black ink, appearing to be 'E. Kimani', written over a horizontal line.

PROF. ELISHIBA KIMANI
AG. DEAN, GRADUATE SCHOOL

EM/Inn

APPENDIX VII: RESEARCH AUTHORIZATION FROM NACOSTI



NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

Telephone +254-20-2213471,
2241349,3310571,2219420
Fax: +254-20-318245,318249
Email: dg@nacosti.go.ke
Website : www.nacosti.go.ke
When replying please quote

NACOSTI, Upper Kabete
Off Waiyaki Way
P.O. Box 30623-00100
NAIROBI-KENYA

Ref. No. **NACOSTI/P/18/79158/27229**

Date: **19th December, 2018**

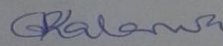
David Kyalo Mutiso
Kenyatta University,
P. O. Box 43844-00100
NAIROBI.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on *“Perception and attitude of postgraduate students towards anti-plagiarism software use on research work in JKUAT and Usiu-Africa Universities in Kenya”* I am pleased to inform you that you have been authorized to undertake research in **Nairobi and Kiambu Counties** for the period ending **19th December, 2019.**

You are advised to report to **the County Commissioners and the County Directors of Education, Nairobi and Kiambu Counties** before embarking on the research project.

Kindly note that, as an applicant who has been licensed under the Science, Technology and Innovation Act, 2013 to conduct research in Kenya, you shall deposit **a copy** of the final research report to the Commission within **one year** of completion. The soft copy of the same should be submitted through the Online Research Information System.


GODFREY P. KALERWA MSc., MBA, MKIM
FOR: DIRECTOR-GENERAL/CEO

Copy to:

The County Commissioner
Nairobi County.

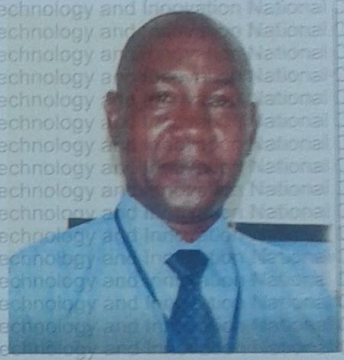
The County Director of Education
Nairobi County.

National Commission for Science, Technology and Innovation is ISO9001:2015 Certified

APPENDIX VIII: PERMIT LETTER FROM NACOSTI

THIS IS TO CERTIFY THAT:
MR. DAVID KYALO MUTISO
of KENYATTA UNIVERSITY, 0-100
Nairobi, has been permitted to conduct
research in Kiambu , Nairobi Counties
on the topic: PERCEPTION AND
ATTITUDE OF POSTGRADUATE
STUDENTS TOWARDS ANTI-PLAGIARISM
SOFTWARE USE ON RESEARCH WORK IN
JKUAT AND USIU-AFRICA UNIVERSITIES
IN KENYA,
for the period ending:
19th December,2019

Permit No : NACOSTI/P/18/79158/27229
Date Of Issue : 19th December,2018
Fee Recieved :Ksh 1000



David Mutiso
Applicant's
Signature

Galeno
Director General
National Commission for Science
Technology & Innovation

**APPENDIX IX: MAP OF KENYA SHOWING LOCATION OF THE SAMPLED
UNIVERSITIES**



KEY:

- USIU: United States International University
- JKUAT: Jomo Kenyatta University of Science and Technology