

**INSTITUTIONAL-BASED FACTORS INFLUENCING THE MANAGEMENT OF
KCSE EXAMINATION IRREGULARITIES IN NAIROBI COUNTY, KENYA**

MUGAMBI SAMUEL KINOTI

**A Thesis Submitted in the School of Education and Social Sciences in Partial
Fulfilment of the Requirements for the Conferment of Master of Education in
Leadership and Education Management of Kenya Methodist University**

JULY 2022

DECLARATION AND RECOMMENDATION

Declaration

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

Sign.....Date.....

Mugambi Samuel Kinoti

EDU-3-6502 -1/2014

Recommendation

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

.....Date.....

Dr. Tarsilla Kibaara, Ph.D

Kenya Methodist University

.....Date.....

Prof Paul Maku Gichohi, Ph.D

Kenya Methodist University

COPYRIGHT

© 2022 Mugambi Samuel Kinoti

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

DEDICATION

To my family for their love and moral support during this research.

.

ACKNOWLEDGEMENT

I give thanks to the Lord for the strength He has given me through the entire process of my thesis research. My gratitude to my family for the support offered. I also express my sincere appreciation to my supervisors Dr. Tarsilla Kibaara and Prof. Paul Gichohi for their guidance and dedication. My close family members who include my parents and siblings also feel appreciated and acknowledged. They have been there for me giving me all that was required to successfully complete my master's course. I would also wish to express my sincere gratitude to every secondary school in Nairobi County, Kenya. Thank you for availing yourselves to undertake and give feedback to the study. The principals, teachers, and students who took part in the study, are also appreciated. I would also wish to thank KeMU institution for always taking note and helping me thorough the research process. The input from facilitators of various presentations, seminars and defenses has also helped me develop my thesis document to an international standard. I am forever indebted of you. I cannot forget to acknowledge the library staffs who took their time to look at my thesis to ensure that it had satisfied the APA 7th edition guide. Last but not the least is appreciation to NACOSTI institution for issuing me with research permit that made this thesis a success. Thank you all.

ABSTRACT

National Examination are expected to be credible as attested by none irregularities. The increase in examination malpractices in Kenya over the years forced KNEC to put measures in place to curb the problem. Despite the strict measures, several incidences of KCSE examination irregularities have continued to be reported. This shows that none of the established measures have been able to completely eradicate examination malpractices, in particular context, the secondary schools in Nairobi County. This study assessed the institutional-based factors that influence the management of KCSE examination irregularities in Nairobi County, Kenya. It had four objectives which aimed to determine the extent to which regulatory framework, availability of learning resources, school culture, and human resources influenced the management of KCSE examination irregularities in Nairobi County. The study was guided by self-efficacy, regulation theory, agency theory and Vygotsky's socio-cultural theory. It applied the descriptive survey design. It targeted 99 public and private secondary schools in Nairobi County, out of which, 80 were sampled. The units of observations were the 99 principals, 99 dean of students, and 99 students' leaders, and the County Director of Education. The schools were first stratified into categories, then simple random sampling technique was used to select individual schools from each stratum. Information was gathered using questionnaires and interview guide. Collected data was checked for reliability, content, construct and face validity. A response rate of 83% was noted. The study computed mean and standard deviation using SPSS. Pearson correlation and regression analysis were used to determine the underlying relationship of variables. Information was presented using tables, narratives and thematic categories. The study noted that KCSE examination irregularities was a real challenge in secondary schools in Nairobi county despite the measures established to promote academic integrity and credibility of results. This was attributed to incomprehensive regulatory framework, inadequate learning resources, such as laboratory equipment, instructional aids, text books, revision books and school libraries. The school culture moderately influenced KCSE examination malpractices. However, the human resources were found being deeply involved in perpetrating examination malpractices. The study observed that regulatory framework, availability of learning resources, school culture, and human resources were all statistically significant in influencing the management of KCSE examination irregularities in Nairobi County It recommended need for the Ministry of Education to adopt e-invigilation through CCTVs and invest in biometric technology in all schools to deter impersonation. It should allocate sufficient funds to schools for purchasing learning resources and initiate periodic in-service training of officers who are involved in the examination invigilating and supervisions. The KNEC should ensure adequate invigilators are hired and well remunerated, and that appropriate and comprehensive legislations and policy are developed and sanctioned. The principals should put supervisory measures in schools to ensure adequate preparedness of learners, sufficient learning resources such as reagents, computers, microscopes, lab equipment and revision materials; and further institutionalize values that nurture transparency, integrity and honesty staff and students. The findings of this study are valuable. They contribute to new insights for addressing examination irregularities. They impact on learners' preparation, regulatory needs, invigilation practices and managerial approaches.

TABLE OF CONTENTS

DECLARATION AND RECOMMENDATION	ii
COPYRIGHT	iii
DEDICATION	iv
ACKNOWLEDGEMENT	v
ABSTRACT	vi
ABBREVIATION AND ACRONYMS	xiii
TABLE OF CONTENTS.....	vii
CHAPTER ONE	1
INTRODUCTION.....	1
1.1 Background of the study	1
1.2 Statement of the Problem	9
1.3 Purpose of the study	10
1.4 Research Objectives	10
1.5 Research hypotheses	11
1.6 Significance of the study	11
1.7 Scope of the study	12
1.8 Limitations of the study.....	12
1.9 Assumptions of the study	13
1.10 Definition of Terms.....	14

CHAPTER TWO	15
LITERATURE REVIEW	15
2.1 Introduction	15
2.2 Management of National Examination Irregularities.....	15
2.3 Regulatory Framework and Management of National Examination Irregularities.....	23
2.4 Availability of Learning resources and Management of Examination Irregularities.....	27
2.5 School Culture and Management of National Examination Irregularities	34
2.6 Human Resource and Management of National Examination Irregularities	40
2.7 Theoretical Framework	45
2.8 Conceptual Framework	53
CHAPTER THREE	57
RESEARCH METHODOLOGY	57
3.1 Introduction	57
3.2 Research Design.....	57
3.3 Location of the Study	58
3.4 Target Population	59
3.5 Sampling Procedure and Sample Size.....	60
3.6 Research Instruments	62
3.7 Piloting of Research Instruments	63
3.8 Validity of the Research Instruments	63
3.9 Reliability of the Research Instruments	64

3.10 Data Collection Procedure	64
3.11 Data Analysis Techniques and Presentations.....	65
3.12 Ethical Considerations.....	66
CHAPTER FOUR.....	68
RESULTS AND DISCUSSION	68
4.1 Introduction	68
4.2 Reliability Test Results	68
4.3 Response Rate	69
4.4 Demographic Characteristics of Respondents.....	70
4.5 Management of KCSE Examination Irregularities in Nairobi County	73
4.6 Regulatory Framework and Management of KCSE Examination Irregularities	79
4.7 Availability of Learning Resources and Management of KCSE Examination Irregularities	84
4.8 The School Culture and KCSE examination irregularities	88
4.9 Human Resources and KCSE Examination Irregularities	91
4.10 Relationship between Institutional-based Factors and Management of KCSE Examination Irregularities.....	96
4.11 Overall Model on Institutional-based Factors and Management of KCSE Examination Irregularities	107

CHAPTER FIVE	114
SUMMARY, CONCLUSIONS AND RECOMMENDATIONS	114
5.1 Introduction	114
5.2 Summary on Findings of the Study.....	114
5.3 Conclusions	118
5.4 Recommendations	120
5.5 Recommendations for Further Studies	123
REFERENCES.....	125
APPENDICES	134

LIST OF TABLES

Table 3. 1 Target Population	59
Table 3. 2 Summary of Sample Size	61
Table 4. 1 Reliability Results	69
Table 4. 2 Response Rate	70
Table 4. 3 Highest qualification of secondary school teachers in Nairobi County	71
Table 4. 4 Teaching experience of secondary school teachers in Nairobi County	72
Table 4. 5 Measures for addressing KCSE examination irregularities	74
Table 4. 6 Regulatory framework and management of KCSE examination irregularities	80
Table 4. 7 Descriptive results on availability of learning resources	85
Table 4. 8 Descriptive results on school culture	89
Table 4. 9 Descriptive results on human resources	93
Table 4. 10 Tests of normality on main variables of the study	97
Table 4. 11 Autocorrelation and multicollinearity results on the predictor variables.....	101
Table 4. 12 Correlations analysis on dependent and independent variables	103
Table 4. 13 Model summary results on the institutional-based factors.....	108
Table 4. 14 ANOVA results on the institutional-based factors.....	109
Table 4. 15 Regression weights results on the institutional-based factors.....	110

LIST OF FIGURES

Figure 2. 1 Conceptual Framework.....	54
Figure 4. 1 Histograms showing normality of data.....	98
Figure 4. 2 Q-Q showing normality of data	99
Figure 4. 3 Box plot on management of KCSE examination irregularities	100
Figure 4. 4 The residual and standardized predicted value of outcome variable.....	102

ABBREVIATION AND ACRONYMS

GPA	Grade Point Average
KCPE	Kenya Certificate of Primary Education
KCSE	Kenya Certificate of Secondary Education
KNEC	Kenya National Examinations Council
SPSS	Statistical Package for Social Sciences
USA	United States of America
WAEC	West African Examinations Council
WASSCE	West African Senior School Certificate Examination

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

Education equips one with necessary knowledge and skills hence it is a necessity for social, political and economic development of any nation (Kagete, 2008). Any system and type of education has its objectives and achievement evaluated differently. One way of evaluating knowledge acquisition and mastery of concepts in secondary schools is through an examination (Oyieko, 2017; Suleman, Gul, Ambrin & Kamran, 2015). According to Adams and Esther (2011), examinations help in the awarding of certificates of education achievement and can also be used to inform the improvement needed in teaching and learning in institutions. Despite its importance, the credibility and validity of examinations continues to be jeopardised by the alarming increase in examination irregularities across all levels and systems of education globally (Frempong, Arloo & Amissah, 2016).

Examination irregularity which is also referred to as examination malpractice involves violation of academic integrity. It is described as being an oblivious act of engaging in deceitful activity or behaviour when undertaking a test or an examination in order to be in an advantage over the others (Ushie & Ishanga, 2016; Tas & Tekkaya, 2010). Asinya (2012), terms malpractice as a breach of the rules and regulations provided during the undertaking of examinations. When these malpractices go undetected or are overlooked, they have great implications to the job industry as those employed having cheated to get in that position will tend to do shoddy work. Makaula (2018) as cited in Petters and Okon

(2014) argues that regardless of the measures put in place to regulate the menace of cheating in examinations, the methods of cheating continue to advance and become sophisticated.

Acts of examination malpractices ranges from impersonation, allowing students to be in possession of unauthorised materials in the exam room. The materials include mobile phones and calculators with answers. Other acts of examination malpractices include copying from other students, forgery of certificates, swapping of scripts, verbally or physically assaulting the examination administrators, allowing students to discuss the examination among themselves, girraffing, bribery, leakage, inscription among others (Shaibu et al., 2019; Onyibe et al., 2015).

A lot of measures have been put in place to eliminate the problem of examination irregularities in the management of KCSE examinations. To some extent those found trying or having cheated in examinations face the wrath of the law including facing serious consequences such as cancellation of results of the candidate involved, serving a jail sentence, paying fines or being banned from doing another examination for a period not exceeding three years (KNEC 2012). Deterring exam malpractices is a collective responsibility of all stakeholders (Ndege, 2012).

1.1.1 Overview of Examination Irregularities in Schools

Examination irregularities is one of global challenge that needs remedy before it destroys the whole structure and meaning of education. In UK, times newspaper revealed a case of approximately 50, 000 university students who were found engaging in exam malpractices

in just three years. In Australia university students were reported engaging in examination malpractices via internet. The students would send their assignments to be done by other people at a price (contract cheating) (Bretag et al., 2018). In attempt to reduce examination malpractices in Indonesia, the hand written examinations were replaced with computer based examinations but all these efforts bore no fruits in eradicating the vice (Iriani & Manongga, 2018).

In Ohio, a study by Strom and Strom (2007) shows that teachers sign a contract before they are allowed to practice. One outright clause in the contract is that in case one violates the rules and regulations governing the whole examination process, the teaching licences will be withdrawn. This was done to ensure teachers restrain from all sorts of examination irregularities.

The West African countries, Nigeria, Ghana, Liberia, Sierra Leone and Gambia all undertake similar public examinations WASSCE under a board of examinations called West African Examination Council (WAEC). However, according to Joshua et. al. (n.d), the WAEC has continued to report increased cases of examination irregularities in Nigeria. There are even cases of denial of schools as being centres of examinations due to exam irregularities. A study by Onyibe et al (2015) confirms frequent exam irregularities in Nigeria whose prevalence is contributed greatly by failure of the government to punish the law breakers.

In Nigeria, the Unified Tertiary Matriculation Examination (UTME) 2013 edition conducted by the Joint Admission and Matriculation Board (JAMB) with three test options

that is paper pencil test computer based test and dual based test. Computer based test and dual based test were successful in conducting the UTME with infrastructure as the only weakness. According to Abubakar & Adebayo (2014), JAMB adopted the use of computer based test in all UTME tests.

In Kenya, the ministry of education (MOE) is responsible for ensuring that the Kenyans get quality and affordable education. It works closely with Kenya National Examination Council (KNEC) to ensure the goals for examinations in education are achieved. KNEC has tried in its best way possible to eradicate the behaviour of examination cheating which is slowly being absorbed by the society as a short cut to success. This behaviour continues to take root in the society and poses a threat of destroying the whole meaning of education hence the need for this study.

Notably, KNEC usually reports cases of examination malpractices every year during the release of national examinations, that is, Kenya Certificate of Primary Education and Kenya Certificate of Secondary Education. The KNEC Act (2012), outlines measures to deter and manage the malpractices which ought to be adhered by all candidates, that is, prior, during and after the examinations. It further states the consequences in case of one breaking the rules which includes jail imprisonment, cancellation of results and a three-year ban from taking another examination. The act further describes how invigilators, supervisors and all persons within the school premises are expected to handle themselves before, during and after undertaking of examinations. Steps to be followed in case of exam malpractices occurring or one behaves in a suspicious manner are also well stipulated

(Mwonga, 2019). Despite all these measures the cheating in examinations still happens as noted in the examples that follows.

In 2017, the then Cabinet Secretary (CS) in charge of education Dr. Fred Matiang'i during the release of the KCSE commented on the issue of 40 teachers including school principals facing disciplinary action having collaborated in the cheating by opening the examinations before the scheduled time. During the same year, a private school was deregistered having engaged in examination malpractice. In 2018, KCSE results released by CS Amina Mohammed stated that out of the 663,811 candidates who sat for the form four examinations, results of 100 candidates were cancelled due to impersonation, possession of unauthorised materials and collusion. During the examination process 191 people including candidates were arrested. In 2019, the CS for education (Prof. Magoha) in his speech during the release of KCSE commented on 100 cell phones that were confiscated before they were used in cheating. The speech indicated that 1,309 results of candidates were cancelled out of the 667,222 candidates who sat for the examinations. Out of the 1,309, the 1158 had engaged in collusion abetting to cheat in examination, 101 brought with them unauthorised materials in the examination room and 47 possessed mobile phones. Two other candidates missed their results due to impersonation and another one missed as a result of causing disturbance.

It was also clear that in some counties such as Migori, Kisii and Homa Bay, parents were involved in the malpractices by collecting a lot of money for supervisors, invigilators, and security officers to aide in cheating (Nyawira, 2019; Muiruri & Kinogu, 2021). In 2020,

the results of 287 candidates were cancelled due to examination irregularities. Out of these, 211 had unauthorised material in the examination room while 45 were found in possession of mobile phones (Cheruiyot 2021). The evidence of mobile phones discovered in an examination room is an exhibit of technological means of cheating.

1.1.2 The Antecedents for Examination Irregularities

Examination irregularities makes the validity of examination be questionable and decisions cannot be made with certainty (Thinguri et al., 2015), hence, the hardworking students are disadvantaged by this. Some reasons noted by Njiru et al. (2020) for the prevalence of this menace is the ranking of schools and students which results into unhealthy competition. Asinya (2012) attributes reasons why students engage in examination irregularities to the emphasis on certificate qualifications, fear of failure and cultism among the students. In addition, the importance attached to the test undertaken and the long term effect of the corresponding results tend to play a major determinant role (Kellaghan & Greaney, 2020). Example of determinant role is in deciding whether and where one proceeds with further studies or is fit in a certain job.

Kellaghan and Greaney (2020) further argued that parents play a bigger percentage in influencing the results obtained by the child. Some go to the extent of paying for extra classes for the child so see to it that they pass their examinations. Kellaghan and Greaney (2020), and Omwenga (2020) argue that parents play a bigger percentage in influencing the results obtained by their children, considering the nature of upbringing, family values and exposure. Omwenga (2020) specifically noted that some parents collude with their children in examination malpractices either directly or indirectly which results to student engaging

in deceptive ways to please the family because of fear of failure. The proliferation of technology has also made exam irregularities escalate at an alarming rate (Curran, Middleton & Doherty, 2011). Key technological gadgets used exam irregularities are the mobile phones, calculators, wireless receivers, mp3 players and advanced methods like invisible ink pens, Personal Digital Assistant (PDAs), wrist watches that serve like PDAs and printed labels. School administrators also play a role in students cheating in examinations (Bifwoli & Momanyi, 2020).

According to Wambugu (2015) national or public examinations eliminate the teachers in the assessing of student's final performance and this make the teachers to collude with the students in cheating in order to be appraised and benefit from it as the best teachers in every subject are awarded a token of appreciation for good work. School culture is said to have an influence on exam irregularities. Odongo (2013) describe a school culture as the way of doing things in a school and it varies from one school to another. Schools with weak cultures tend to have negative attitude towards the whole learning process, and this tends to attract poor results. Consequently, students tend to engage in examination malpractices. Nonetheless, schools with good have a tendency of posting good results as the teachers regularly encourage the students and teach them in order for them to be successful.

Anzene (2014) described other factors that influence examination malpractices to include inadequate teaching-learning resources like libraries, laboratories and classrooms which in return greatly affect effective learning. Anzene further argues that inadequacy of teachers

(human resources) could also lead to examination malpractice as teaching-learning process will be ineffective as well as invigilation process.

In addressing the menace of examination malpractices, a study by Mwonga (2019) shows that the Kenya National Examination Council has attempted to control examination irregularities in the last few years. Some actions taken include frisking of students before entering the exam room, the pick-up stations of examinations being at the containers where county commissioners are always present to open them and close them at the end of the day to reduce chances of leakage and reducing the duration of KCSE from six weeks to four weeks. Mwonga notes that, at the pick –up stations, principals avail themselves early enough to collect the examinations after which they are taken to schools under the custody of police officers and other senior officers who provide surveillance (Barus et al., 2017).

As part of the efforts to manage irregularities, school principals are supposed to be within the school premises at all times and help in the supervision of exams and at the end of each paper the principal takes the papers back to the pick-up station under the security of police officers. Moreover, in attempts to reduce contact between students and parents or outsiders before the examination period, during the third term, the Ministry of Education banned all social events such as prayer days in schools. However, this proved more effective in boarding schools than in day schools. Mwonga (2019) argues that in case of any leakages, KNEC ensures that it has about 15 non-titled examinations for every subject. Another outstanding measure taken by KNEC is to ensure that all examinations are printed overseas for security and confidentiality reasons.

Nairobi is the capital city of Kenya. It has a population of about 4,354,580 (2019 census). Majority of schools in Nairobi follow the Kenya curriculum while the rest follow foreign curriculum be it British, Swedish, American or German. The examination malpractices in Nairobi County. Numerous cases of examination irregularities have been recorded in secondary schools within Nairobi County (Nyawira, 2019; Muiruri & Kinogu, 2021). The information reported by Nyawira (2019) indicate that during the 2019 KCSE, at least 100 phones used in cheating were confiscated across the country, out of which 35 were from examination centres in Nairobi County. A case in example of massive KCSE examination malpractices in Nairobi County was the St. Teresa Boys Primary School which had 154 private candidates in 2019 many of who were found hiding phones in their panties. The phones were receiving real-time answers during the examination. Consequently, a total of 26 candidates were arrested for being involved in examination irregularities (Nyawira, 2019).

1.2 Statement of the Problem

Examination irregularities is a global challenge that runs across all races, genders and ages. The ministry of education (MOE) is charged with the responsibility of ensuring quality and affordable education is accessible to all (MOE). The quality of education offered is measured through examinations which are set, issued, invigilated, marked, and results released by Kenya National Examination Council (KNEC).

The increase in examination malpractices over the years made KNEC to put measures in place to curb the problem of cheating in examinations which reduces the credibility and reliability of examinations. Measures put in place include cancellation of results, imprisonment and fines (KNEC Act 2012) but none of these have been able to completely

eradicate examination malpractices. The problem of examination irregularities needs to be addressed since examinations play a very critical role in the education sector. The problem of examination malpractices if not addressed, it will continue to reduce the credibility of examinations.

Studies have been conducted to investigate home based factors, competency of security officers and also the attitude of teachers toward examination malpractices (Owenga, 2020; Muthaa et al., 2014; Musyoka, 2012) and no study has been conducted to investigate institutional based factors. Students spend a lot of time in school than at home with their parents and guardians, hence the need to investigate factors within the institution that influence management of examination malpractices. Within the school factors such as human resource, availability of learning resources and school culture are greatly influenced by the institution. If school factors are not looked into closely the management of KCSE examination irregularities may be difficult to manage as the examination process and preparation revolves around the school and its environs.

1.3 Purpose of the study

The purpose of this study was to assess the institutional based factors that influence the management of KCSE examination irregularities in Nairobi County, Kenya.

1.4 Research Objectives

- i. To determine how regulatory framework influence the management of KCSE examination irregularities in Nairobi county, Kenya
- ii. To determine how availability of learning resources influence the management of KCSE irregularities in Nairobi county, Kenya

- iii. To determine how the school culture influence the management of KCSE examination irregularities in Nairobi county, Kenya
- iv. To determine how the human resources influence the management of KCSE examination irregularities in Nairobi county, Kenya

1.5 Research hypotheses

Four research questions were raised to guide the study:

- Ho1: The regulatory framework does not influence the management of KCSE examination irregularities in Nairobi County, Kenya.
- H02: The availability of learning resources does not influence the management of KCSE examination irregularities in Nairobi County, Kenya.
- H03: The school culture does not influence the management of KCSE examination irregularities in Nairobi County, Kenya.
- H04: The human resources do not influence the management of KCSE examination irregularities in Nairobi County, Kenya.

1.6 Significance of the study

The findings from this study would be of benefit to the ministry of education, KNEC, the society students and also the school administrators. The findings would help KNEC to come up with measures that will help to eradicate or to a large extent minimize examination malpractices in Kenya that are brought about by the school. Results of the public examinations would not be questionable when cases of examination irregularities are negligible hence, making the government the beneficiary of this research project. The

teachers service commission (TSC) under the ministry of education can implement the findings of this study to help in the allocation of teachers to schools that have a low teacher student ratio. The study will investigate on the role of the school, its administration and all the stakeholders on the management of KCSE examination irregularities. This will in turn help them come up with solutions to providing a conducive and a cheating free environment. In the process of eradicating the menace students will also benefit as they will have high self-efficacy, confidence and the high performing students will be motivated which influences students' performance. Society would benefit from this study as it will benefit from the students whose results match their efforts and such students would be able to give back to the society. This research project will be used as a reference material to aid in further research on exam malpractices.

1.7 Scope of the study

The study involved both public and private secondary schools was conducted in Nairobi County. Data was collected from the school administrators, teachers, and students. The constructs of interest were regulatory framework, availability of learning resources, school culture, human resources and management of KCSE irregularities. However, the study did not involve other factors from external stakeholders such as home-based.

1.8 Limitations of the study

The targeted group in Nairobi County had some reservations in disclosing information on examination irregularities in their school due to fear of implications and upholding the integrity of the school. To curb this problem a letter from Kenya Methodist University (KeMU) to request for disclosure and assistance in the research project was provided and this gave them some confidence. By use of questionnaires, the researcher was not able to

seek clarification regarding the choices made by respondents. However, the administration of interview helped to connect issues during the analysis. This helped to minimize gaps left by the questionnaire tool. This was a cross-sectional study that collected data once. A longitudinal approach would require more time which was outside the stipulated timeline for finishing a master degree.

1.9 Assumptions of the study

The study assumed that all the responses given were honest. The sampled schools were operating within the regulatory framework put in place by the Ministry of Education in curbing examination irregularities.

1.10 Definition of Terms

- Collusion** Collusion according to dictionary definition refers to secret agreement or understanding for a wrong purpose. Collusion in examinations refers to candidates being assisted by external agents (third party) to perform tasks during the examination. Collusion could also mean candidates copying from each other. Collusion in the context of examination could also take the form of smuggling question papers out of the examination rooms for other people to work out the answers then circulating the worked out answers among the candidates.
- Examination Irregularities** It is a violation of academic integrity that involves act of engaging in deceitful activity or behaviour when undertaking a test or an examination in order to be in an advantage over the others (Ushie & Ishanga, 2016).
- Impersonation** This is the act of one person masquerading as the real person (the registered candidate) who is expected to sit for examination.
- Leakage** Leakage in examination refers to a situation where the content of the question paper is secretly known to the candidates (having prior knowledge of the content of the examination) before the examination is administered.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter provides a discussion on related literature which was reviewed regarding the main constructs of the study in general and drawing examples and experiences from various studies done globally, regionally and locally. The discussion is organized according to the identified constructs starting with the management of examination irregularities, regulatory framework, and availability of learning resources, school culture, and human resources. The chapter concludes by a discussion on theories that informed this study and presentation on the conceptual framework which helped to operationalize the study.

2.2 Management of National Examination Irregularities

Examinations are used to assess the students' mastery ability of the content taught in class, (Muchemwa & Dhliwayo, 2017). Basically, the quality of education is determined by many factors to which examination takes a central stage. A learner can be examined by assessing intellectual, emotional and practical development of an individual that has gone through a form of education and not the development of one aspect at the expense of the other (Tina, 2009). Examination malpractices therefore derails the whole process of examinations hence the need for proper management of the processes of preparation and administration to curb irregularity and promote its integrity. In the context of this study, the examination irregularities can be termed as any irregular action taken by examiners, examinees or any other person charged with the conduct of examination that contravenes the rules and regulation governing the examination and puts some individual candidates in undue

advantage over the others (Nnekwu & Odochukwu, 2016). The aspects of management, refers to the steps taken to curb or minimize the occurrence of examination malpractice. It also comprise measures put in place to handle the situation when an examination irregularities has taken place. The measures taken to address the situation are believed to have a bearing on the cheating behaviour throughout the entire process.

Examination irregularities can be classified into those taking place before, during and after the examination (Nnekwu & Odochukwu, 2016). For those taking place before the examination, the candidates involve themselves in malpractices by buying the examination prior to the set date of the examination. It usually take place in different forms. These include impersonation, giraffing, inscription, which is, writing small notes on body parts or papers and harassing the examination officials. The after activities associated with examination irregularities include bribing the persons charged with marking of examinations by sex or monetary bribes, tampering with certificates issued or delaying of examination officials to collect answer scripts from students to buy them time to bring other answers from outside the examination hall.

Hamma and Hassa (2019) reported that there are many different forms in which one can participate in examinations irregularities. This form includes copying from one another during exams, but this method has been easily managed in Nigeria during national exams where invigilators and supervisors ensure there is enough space from one student to another. Another form of irregularities is where some invigilators are paid by the principals of a school in order for them to have a blind eye when students are copying from one another in the examination hall. Students can sometimes bring in foreign materials such as

a textbook or an exercise book in the exam hall and consult them during the examination. Many students have been caught carrying small summary notes while others have been caught having written answers of some questions on their body parts. Principals and head of schools may sometimes get the exam paper for their students before its release which make students to consult widely for answers (Anzene, 2014).

The problem of examination irregularities is experienced globally; it affect even the developed countries. In china civil service examination was issued in small rooms and penalty of death issued on any one found copying from another person but despite this cheating still occurred (Wambugu, 2015). Cheating in examinations may be an individual effort or aided by other persons be it the teachers, parents or other examination stakeholders. Examination irregularities put individuals at an advantage over the other students. However, Wambugu (2015) states that a teacher may victimise a student by awarding the candidate lower grade than what he/she attained. This is also a form of examination irregularity.

In order to manage examination irregularities, a lot of measures have been put in place by KNEC including cancellation of results, banning of students from taking another examination for a period not exceeding 3 years and imprisonment of the culprit with or without the option of fines (KNEC Act, 2012). Managing of examination malpractices at primary, secondary and tertiary levels is mandated on school administrators, security officers, invigilators and supervisors. Technology is also applied in managing examination irregularities (Wambugu, 2015; Muthaa et al., 2014; Ndege, 2012; Onyema et al., 2019).

The greatest examination scandal among teachers, principals and school administrators in Atlanta Public School system (APS) in the United States is said to have taken place in 2011 as reported by Georgia Bureau of Investigation (GBI). In 2011, 278 teachers including principals out of who, 82 confessed of engaging in examinations malpractices (Aronson et al., 2016).

In West Africa, Anzene (2014) noted the first ever examination malpractice occurred in 1914 where the exam papers leaked before the scheduled date of release. The malpractice became more advanced in 1970s; this time involving other people other than the students. Due to this reasons certificates that were issued by West Africa Examination Council (WAEC); an examination body in Nigeria to students, were raising questions on their validity and credibility. This matter became a very worrying factor to the whole nation and even caught the attention of the Judicial Commission which was tasked to investigate the menace. The Commission realized that WAEC was being overloaded with work and it recommended formation of other examinations bodies (Maduemezia, 1998). Consequently, the Nigerian government gave direction towards managing examination malpractice. One of the decrees was to punish those caught purchasing information materials that have answers and questions for a national examination; that upon conviction of the offence, one was liable for 21 years imprisonment (Anzene, 2014). However this decree was too harsh and it was revised by the Examination Malpractice Act 33 of 1999 which stated that any offending person caught should be fined between N50, 000 to N100, 000 or jail term of 3 to 4 years.

In Malawi, Makaula (2018) conducted a study on perceived causes and methods of cheating in the Malawian education system. The study sampled a total of 200 respondents including 140 students and 60 teachers selected from 10 schools in the division in secondary schools. Only participants who were 18 years of age and above were allowed to participate in the study. However, the study did not highlight on what happened if majority of the candidates were below the age of 18 years. Makaula (2018) limited the study to only the seniors in the school yet examination malpractices were experienced across all ages. The proposed study did not discriminate participants based on age.

In West Africa, a study was conducted on the role of technology in mitigating examination malpractices (Onyema et al., 2019). The use of technology in cheating, for example, the use of mobile phones led to introduction of an intervention measure where technology was deployed to manage examination misconduct. According to JAMB report (a body charged with the role of administering examinations in tertiary institutions), the use of mobile phones in cheating in examinations had increased drastically over the years. Nigeria and Ghana are said to be the most affected West African countries with examination malpractices. The study showed some of technologies means of curbing the menace to include using e-invigilation by use of CCTVs, using facial recognition technology to reduce impersonation, and use of biometrics. However, the deployment of technology in mitigating the menace of cheating had some challenges that included poor funding, resistance to change, low power supply and IT security issues just to mention a few. Onyema et al. (2019) concluded that technology on its own, is not sufficient to eradicate examination irregularities; hence, the need to investigate other methods of curbing examination malpractices.

Anzene (2014) reported that examination irregularity is not a new thing in the Nigerian education system. A study conducted by Nnekwu and Odochukwu (2016) in Nigeria sampled 560 teachers including principals. The study looked at the management strategies for curbing examination malpractices both before, during and after the examinations. The findings of the study showed that all the five strategies put in place before the examination were proven effective (such as appropriate allocation of examination officers), during the undertaking of examinations, orderly leaving of the examination hall by examinees, engaging honest supervisors after the examinations; where 6 out of 7 strategies were effective. However, the study did not take into account how students approached the strategies put in place and how they helped in achieving the objectives of the pre-set strategies. This provided an opportunity of the current study an advantage of involving students to investigate effectiveness of the set rules in managing irregularities in KCSE examination.

Another study carried out in Nigeria on causes and possible solutions to examination malpractices in secondary schools in Nigeria (Jajua, 2019) and identified causes of examination malpractices which included; fear of being named as a failure, parental pressure and teachers influence on students. To curb the menace, Jajua (2019) categorised the methods of curbing the cankerworm of examination irregularities as punitive, preventive and deterrent. Other measures noted were jail imprisonment, mandatory guidance and counselling and reducing unnecessary emphasis on certificates.

Locally, in Kisii County, a study was conducted by Opiyo (2015) to investigate on factors that influence recurrence of examination irregularities in public secondary schools. The sample size included 100 principals, 400 teachers, 1000 students, 9 sub county education officers and the county director of education. The findings from the study stated that ranking of schools at the county and district levels contributed greatly to the recurrence of examination irregularities and also the lack of adequate preparation before the examinations. Opiyo (2015) suggested among others, that stakeholders in schools should be involved in evaluating students' performance to reduce the collusion of students and the school administrators. However, the study only engaged public secondary schools in Kisii County hence giving this study an opportunity to engage both public and private secondary schools in evaluating the institutional-based factors influencing management of KCSE examinations in Nairobi County.

A study by Oyieko (2017), focused on examination rules and regulations and irregularities. The respondents of the study comprised of 640 students from eight (8) secondary schools out of of which, 2 schools were private schools and 25 teachers in Bondo sub-county. The study sought to assess effectiveness of the rules and regulations in eliminating examination malpractices. Oyieko (2017) also outlined some modes of examination irregularities and also analysed the causes of examination malpractices which included inadequate preparation in examinations, lack of confidence, pressure from the society and the need to get good grades. The study by Oyieko (2017) did not carry pre-testing on the schools before the actual study.

In Eastern province Kenya, Njue et al (2014) conducted a study on effectiveness of handling and distributing KCSE examinations. The targeted respondents of the study were 511. Among them were 360 teachers, 120 examination personnel and 30 district examination officers. Njue et al (2014) observed that cases of examination malpractices were evident when handling and distributing KCSE examinations by officials lacking integrity, poor handling of record scripts collected by the administrators and inadequate security at the distribution centres. The number of male's culprits in the handling of KCSE examination was also found to be higher than the female ones. The study recommended on the need to increase the number of females handling the examination.

Nairobi County was conducted on a sample size of 435 respondents from 31 schools both public and private and the county education director. Wambugu (2015) found out that school administrators play a very critical role in the management of examination irregularities in KCSE examinations. The identified roles included ensuring the environment is free of any unauthorised materials by frisking the students, and assisting in the supervision process. Schools administrators are also charged with the responsibility of reporting any case of examination malpractices to the Kenya National Examination Council among many others. However, Wambugu (2015) noted that many cases of examination irregularities in institutions go unreported. The adverse effects of examination irregularities include killing the teaching spirit and demoralizing the teachers and learners; hence, leading to truancy among the teachers. The study however did not mention on what would happen if the school administrators were involved in examination malpractices; a gap that has been addressed in this study.

The government of Kenya recently introduced stringent rules to curb examination irregularities. They include leaving the school gate being wide open during the day when the examination is in progress. This was meant to allow the officers monitoring the administering to access the school with ease. The rules was introduced requiring all security personnel to be strategically located to be able to provide surveillance as examination materials are loaded and offloaded from the vehicle, and during the transportation. The ministry also banned taking off days by supervisors and invigilators throughout the examination period. In addition, the ministry prohibited teachers and staff from the school compound during the examination season except the ones handling the practical subjects. The ministry also banned the use of mobile phones at the examination center. The only officer allowed to be in the possession of phone was the center manager (Cheruiyot, 2022).

2.3 Regulatory Framework and Management of National Examination Irregularities

Examination irregularities leads loss of integrity in academic performance (Dukes, 2012). Regulatory framework here refers to policy and legislation put in place to minimize occurrence of examination irregularities. The guidance further outlines actions the need to be taken upon the occurrence of irregularities in national examination. Several studies that have been done show that many students in high school have been involved in cheating in homework and tests. Cheating in examinations has consequences, it makes a validity of certificate issued to a student to raise a lot of questions. Anzene (2014) lamented that many medical surgeons who forget surgical tools inside the stomach of their patients, used illegal

means to pass their exams. Also consequence of cheating in exams is that students have the necessary qualifications but neither the skills nor the ability to do a certain task.

Examination cheating is a global issues many students and schools globally have taken part in examination malpractice either directly or indirectly. Taderera et al (2014), and Fremer and Olson (2015) noted examination malpractice in United States of America. To manage the situation, Taderera et al (2014) suggested need for strict rules during examination setting and administering to avoid leakage of the exams. The students who participated in the study suggested the national examinations to comprise three set to overcome leakage. Teachers and principals were urged to be vigilant in suppressing the vice among students by suspending learners who are caught engaging in irregularities even during school examinations. Ikwueke (2011) further suggests that teachers should change their attitude towards examination malpractices and encourage students to follow all the rules that governs examinations. The study did not show how the rules and regulations deterred teachers and others stakeholders in the school from engaging in examination malpractices.

The educational system in Nigeria has been highly affected by examination malpractices for a period of time. In 2006, examination malpractice caused 324 secondary schools in the country to be banned from conducting secondary schools examination for period of three years between 2007 and 2010 (Anzene, 2014). Part of the control measures recommended by Ugbong et al. (2016) was the need for school administrators to ensure only registered candidates do the exams to reduce the cases of impersonation during the exams. Odo (2015) suggested need to introduce a policy on that use of closed circuit television (CCTV) to curb

cheating in the examination hall. Odo (2015) recommended the establishment of a special body with a mandate to handle cases of examination malpractices in secondary schools. Muchemwa and Alice (2017) also supported the idea of institutionalizing the fight against examination malpractices by enacting legislation and developing policy to address the matter since the issue was a national crisis which called for different approaches. Odo (2015) suggested the 21 years imprisonment for culprits who compromise the integrity of examinations. Odo further suggested a tough rule on the schools that do not have enough learning and teaching facilities saying that they should not be given a license to operate. The study didn't however highlight the rules and regulations that should be considered to deter teachers and the whole school administration from engaging in examination malpractices. The study didn't also highlight rules and regulations in which the examination body of Nigeria would use in curbing examination malpractices through leakage before the release date.

The study by Muchemwa and Alice (2017) urges that the Zimbabwe School Examination Council (ZIMSEC) to gazette rules and regulation governing transportation of examinations during administration to ensure safety of examination centers and exam itself. Moreover, they urged the government to use social media to educate the citizens the effects of examination malpractices and how they should handle it. Although the study provided insights to inform regulatory framework, it failed to address the consequences that await students who engage in examination. It also didn't highlight rules and regulations that ZIMSEC used to help in managing examination leakage and curb examination malpractices from teachers and the school administrators.

Rules, regulations and policies governing the national examinations in Ethiopia are not profound. Tawiah (2015) suggested punitive rules where the schools that participate in examination malpractice should be banned from conducting examinations, while the students caught in the vice be imprisoned. Ayemeni (2010) had similar feeling and suggested formulation of strict examination policies to deter all sorts of examination irregularities. Maheka (2015) emphasized the importance of integrity in the education systems and pointed the need to teach students the importance of working hard and being honesty when doing the examinations. Strict supervision was also recommended to officers from the Ministry of Education who were urged to establish mechanisms for monitoring the quality of lessons that are delivered to students. Yahaya et al (2017) too opined that students should be taught on how to employ good learning habits which will boost their confidence when preparing to do their examinations. They noted a need to regularize the working relationship between the Ethiopian examination system and the school administrators to ensure proper supervision of the national exams. Udoh (2011) argued that schools without proper learning resources and poor study habits are likely to be involved in examination malpractices. Udoh suggested need for rules in all schools regarding minimum facilities required before a secondary school is approved as a learning center.

Oyieko (2017) argued that to curb examination malpractices in Kenya the government through the Ministry of Education should set tough rules and regulations against examination malpractices by ensuring the establishment of legislations on the same. Indeed, studies have been conducted in Kenya trying to find ways of curbing examination malpractices in KCSE examinations. The current law stipulate that any person caught

leaking examination papers or involved in the malpractices is liable for an imprisonment term not more than 10 years or a fine of 2 million shillings as prescribed in the KNEC Act of 2013 (Shibo et al, 2017; Oyieko, 2017). In addition to imprisonment, the students are banned from doing examinations conducted by KNEC for a period of not more than three years. Nyamoita and Otieno (2016), and Shibo et al, 2017) noted the appropriateness of the rules and penalty but underlined the need to educate students and teachers on the consequences and implications of examination irregularities, and how to deter involvement in the practice. Other measures introduced by the Ministry of Education is to hold principals accountable for the picking of examinations from the containers and ensure they are returned after they have been done (Advance-African, 2016). Despite these tough measures, cases of irregularities were being reported. A recent example is where a total of 441 KCSE 2021 candidates had their cancelled due to exam irregularities (Tarus, 2022).

2.4 Availability of Learning resources and Management of Examination Irregularities

Examination systems all over the world have been highly affected with increase of cases of irregularities (Yazici et al., 2011). Examination malpractice is like a growing disease that's digging its way into the academics of students (Ihechukwu et al., 2017), hence creating doubt on the validity of the certificates issued to students.

This study wanted to understand how learning resources helps in the management of examination irregularities. According to Hamma and Hassa (2019), inadequate learning resources affect the effectiveness and teaching in a school. David and Emunemu (2018) stated that the availability of physical learning resources creates a good learning

environment for students. The study further stated that the school should focus all the available resources and time to ensure it has good learning resources in order to get the desired results and further ensure proper functioning of the school before and during the examinations. The study further suggested that availability of physical learning resources are themselves motivation factors to not only students but also teachers. Basically, learning physical facilities define a school, and help in the proper functioning and management of an organization. Hamma and Hassa (2019) identified some of the physical learning resources in a school that included classrooms, chairs school buildings, sports centers, canteen, medical facilities, toilet facilities, libraries, laboratories, and other instructional facilities such as computers, projectors, writing boards, textbooks, and chalks among others—all of which are usually compared to the number of students.

From international perspectives, effective management of examination irregularities can be determined by several factors as noted by previous studies. For example, Yazici et al. (2011) studied the Turkish students who identified the lack of proper invigilation and inadequate teaching facilities such as laboratories as leading causes for examination malpractices. To curb the malpractices the study recommended that the Turkey government needed to ensure allocation of sufficient money to school to cater for learning resources and equipment. It also identified need to revise the regulations and policy to address various forms of examination irregularities. In North America, the schools' obsessions with good performance caused students to cheat in examinations (Anderman & Midgley, 2004). When students were asked the reason why they cheat, they said that they feared to fail the main examination. According to Hamma and Hassa (2019), some teachers want to make a

good name for their school, hence; they end up helping their students by giving out some aiding handouts that have questions and the answers and others write answers on the board. Other teachers hire students to do exams for the weak ones. Studies done by Yazici et al (2011), Anderman and Midgley (2004) and Hamma and Hassa (2019) do not show what ought to be done to manage the examination malpractices with respect to learning resources.

Hopland (2013) conducted a research in Norway on whether availability of physical facilities affects the performance. The research reported that unavailability of good learning resources affects the performance of exams and hence, many learners will result to malpractices in order to pass the exams just like others who have all the learning resources. To address this problem, the government of Norway allocated funds for improvement of the available learning resources and introduced new learning resources. This helped to boost the learners' confidence in preparing for exams and prevented them from engaging in examination irregularities. Earthman (2012) reported that the availability good classes boosts the confidence of student in preparation for the exams and discourage absenteeism among students and teachers. However, Hopland (2013) did not cover other learning resources such as libraries to demonstrate how they help in the management of examination irregularities. Both Hopland (2013) and Earthman (2012) focused on classrooms and laboratories learning resources that are critical in suppressing the examination irregularities. The current study has covered all learning resources and demonstrated their role in managing examination irregularities.

Another study conducted Hopland (2013) in five developed countries which include Japan, Netherlands and Australia on the effect of availability of learning resources on the management of examination irregularities. The study noted that unavailability of learning resources such as classrooms and libraries as essential learning resources and had substantial effects on learners' performance in examinations. This implies that, the two learning resources ought to be well maintained as a strategy to deter examination irregularities. Cecilini et al (2018) conducted a research in California, United States of America and noted that the students who study in schools that do not have enough learning resources are likely to cheat in exams for them to pass. The study reported that the government allocated extra funds to improve the learning resources that were available and introduced new ones to address the examination malpractices. The study also reported that the government of Japan, Netherlands and Australia came up with dummy learning resources while the construction of the learning resources were under way (Hopland, 2013). The research conducted by Cecilini et al. (2018), Hopland (2013) and Earthman (2012) all focused on classes and libraries as the learning resources that affect examination irregularities and leaving others such as laboratories, chairs, dormitories for boarding schools. The current study included the omitted facilities considering that their lack in a school environment are likely to trigger student to engage in examination malpractices.

David and Emunemu (2018) reported that the government of Nigeria ensured that all the learning resources are available in all public schools. However, they did not point out the role played by a school library and classrooms during national examinations. Along the same vein, Dejene (2021) conducted a research in Ethiopia and concluded that paper and

pencils exams contribute to 90% of cheating in national examinations in Ethiopian secondary schools. The study further noted that cheating using technology was on the rise. Hamma and Hassa (2019) stated that high respect of the certificate is one of the reasons as to why students in Ethiopia participate in examination irregularities. The society at large values people who have good qualifications in terms of papers. This is dangerous because, even if one has the papers but lacks competencies and skills, would not secure a job in the market. This shows the adverse effect of cheating in an examination. It is important to note that emphasis for papers as opposed to demonstration of skills can prompt students to cheat in the exams just to get the academic qualifications (Hamma & Hassa, 2019).

Inadequate learning resources, equipment and resources such books, science laboratory, library, classes and even teachers are also another leading cause for examination irregularities (Asiabaka, 2008). According to Owoeye and Yara (2011), these facilities, equipment and resources play a very vital role in helping the schools achieve its goals and objectives. Their inadequacy may largely affect the nature of preparation needed before sitting for a national examination. Lack of proper preparation usually causes students to engage in examination irregularities (Anzene, 2014). Anzene argued that proper preparation is strongly linked to adequate facilities. It is however clear that the studies by Asiabaka, (2008), Owoeye and Yara (2011) and Anzene (2014) didn't mention that for student who are in boarding schools have a lot of time and hence lack of adequate facilities may cause many to cheat in examinations. They also didn't cover computer lab as a critical learning resources which helps to address the examination irregularities. This pointed out a gap which was addressed by current study.

Students' good performance does not just come out of thin air, there must be good learning environment created by the school (David & Emunemu, 2018). Good learning environment with requisite facilities has been identified essential in deterring examination malpractices. David and Emunemu underscored the need for a school administration to ensure adequate and well-equipped learning resources and equipment. They stressed that the principal of a school should ensure that specific learning resources such as science laboratories are spacious enough to accommodate all the students during internal exams and national examinations. If a school has enough learning resources it will enable student to have enough courage to face national examination without having to indulge in examination malpractice (Idialu 2007; Ngware & Nafukho, 2002). In these studies the authors didn't point out the roles played by principals in coordinating school equipment and facilities in the management of examination irregularities.

An examination malpractice is not a new thing in the Kenya educational systems (Naliaka et al., 2015). Ojwan'g (2019) reported that many students who are in campus have ever cheated in exams either directly or indirectly so that they can undertake the career in the University of their Choice. The study furthers highlights measure that should be put in place to curb examination cheating. These methods include preparing students well in advance for the exams, ensuring adequate learning resources, and installing closed-circuit television (CCTV) in the examination hall to discourage students from cheating. A study conducted by Getange et al. (2015) in Kenya shows that 77% of teachers in secondary schools in Kisii County agree that lack of enough teaching facilities contribute to examination malpractice among students. According to Nyamoita and Otieno (2016), the

total number of students that were involved in examination malpractices were 2880, majority of them were from Kisii County which was originally from the Nyanza Province. Out of the 100 registered centers, 21 were involved in malpractices. In this study the authors did not mention the role played by classrooms, a library, and a laboratory towards management of examination malpractices. The study was biased to students' performance and consequences.

The effective ways for managing irregularities is to put up systems to deter the malpractices. The current study regarded learning resources critical in addressing the menace. To manage this menace, the study by Bifwoli and Momanyi (2020) based in Makueni Sub County underscored the role of school administrators in ensuring that students are thoroughly prepared before sitting for national examination was instrumental in managing examination malpractices. Nevertheless, the study Bifwoli and Momanyi didn't mention learning resources such as classrooms, laboratories, libraries as measures for managing examination malpractices. According to Aullo (2014), inadequate learning resources such as textbooks, enough teachers, absenteeism by teachers and lack of enough teachers per subject can cause students to liaise with their parents and teachers to participate in exam irregularities as means to ensure they get the desire results. In this study Aullo never mentioned that good classes play a vital role in examination malpractice management.

Wambugu (2015) conducted a study in Nairobi County and identified competition and ranking of schools based on their performance in national examinations as key contributors to the malpractices noting that many secondary schools from Nairobi are usually ranked

the best as compared to others. The study further noted that practical examination had the highest number in irregularities; hence the study recommended need for trainers to ensure practical examinations more often done in the schools prior to the examination to boost confidence. The same can be blamed on facilities in the laboratories. The solution is to ensure that laboratories are well-equipped, plenty of reagents, adequate apparatus, and presence of qualified laboratory technicians. These aspects stood out in the current study and justified the need for the current study.

Literature reviewed shows that there are very few studies in Kenya that have focused on learning resources and equipment for curbing examination malpractices. Most studies have focused on the causes for the practices. A few have attempted to compare cheating practices across gender. For example in Kenya Joshua (2019) reported that female students tend to think that cheating in exams is unethical and unlawful as compared to male students; however, they also engage in cheating as much as male students. Other studies have attempted to compare examination malpractices in urban and rural secondary schools and concluded that the more irregularities in secondary schools that are in the urban areas as than those in the rural areas (Bifwoli & Momanyi, 2020).

2.5 School Culture and Management of National Examination Irregularities

Culture refers to peoples' beliefs, way of doing things and perceptions at the place of interest (Le Clear, 2005). In a school set-up, school culture refers to the norms and traditions of the school. According to Kurniawati and Surnarso (2019), school culture is about the atmosphere in the school in which peers interact with teaching, and non-teaching staff. A school can be termed as an organization. The organizational culture, which is a

critical construct in the current study refers to patterns of values that in turn leads to behavioral attributes that are in turn adopted by individuals in that organization. School culture is usually characterized by a set of deep patterns of values and traditions which have been formed over time. They are historically rooted and socially transmitted values, beliefs and norms from one generation to another (Atasoy, 2020; Kurniawati & Surnaso, 2019).

School culture has not been explored in the past as compared to school climate. Still, in recent years, it has become an area of interest to researchers on various issues such as examination malpractices. It comprises of key aspects that cut across learning, teaching processes, curriculum and leadership, to mention a few. In Indonesia, a study was carried out by Kurniawati and Surnarso (2019) on character development through school culture. It was carried out in Taruna Nusantara Magelang senior high school, a national boarding school in Indonesia. From the study, it was noted that a school culture plays a very influential role in cultivating positive character in students. Character development results to holistic, responsible, and patriotic individual who is productive and has a positive mindset for global benefit. The study argues that character development is formed by mental knowledge and setting an example. Supporting this view, Kurniawati and Surnarso (2019) emphasized the need for character development in schools. Kurniawati and Surnarso specifically examined both scheduled and independent routine activities and assessed their influence on character development. They concluded that boarding schools are better in cultivating sound character in individuals; hence, eradicating any form of irregularities than day schools. The study pointed out a critical aspect that the current study

ill observed in determining the impact of school culture on examination irregularities among boarding and day school secondary schools in Nairobi County.

The relationship between school principals' leadership styles, school culture and organizational change was investigated by Atasoy (2020) in Turkey. The study sample consisted of 382 teachers in North Cyprus. It assessed the two types of leadership styles which are said to be totally different. According to Atasoy, a transactional leader works within the restraints of the organization, and the success of the leadership depends on reinforcements of the subordinates. At the same time, a transformational leader is more oriented towards the organization's common goals and works to achieve the pre-set objectives for organizational change. Atasoy (2020) argues that school culture plays a full mediator's role between transformational leadership and organizational change, although the influence is moderate. The study by Atasoy treated the school culture as a moderator, while the current study examined it as a predictor variable in determining how examination irregularities are managed.

Dejene (2021) investigated academic cheating in secondary schools in Ethiopia. The specific aspects investigated included prevalence, severity and justifications. The sample size comprised of 1246 students distributed among the private and public secondary schools. The sample was drawn from two regions. The study found that pen and paper examinations accounted for 90% mode of evaluation. It observed that prevalence of examination malpractices was on the rise in Ethiopia. This indicated that examination

malpractices had been absorbed into the student way of life and regarded as a victimless crime (Dejene, 2021).

In Ghana, a study was conducted to investigate the relationship between cheating behaviour and moral reasoning among senior secondary school students (Kyei, 2019). The target population comprised 2,520 students from the four senior high schools in Ghana. The senior high school students sat for WASSCE examinations. The findings indicated that moral reasoning differed with gender, while the school environment played a role in influencing how students viewed cheating behaviours. This had adverse effects on the school reputation and the credibility of examinations. Furthermore, the data obtained in this study showed a negative correlation between moral reasoning and cheating behaviours and WASSCE results. The study also noted that the school culture played a critical role in inculcating good morals in students, hence, eventually suppressing examination malpractices that were on the rise in the West African countries. That notwithstanding, it was not clear on the method used to sample the subjects. The current study adopted both stratified and simple random sampling techniques to develop a sample population in secondary schools in Nairobi County.

Locally, Nabiswa (2018) conducted a study in Bungoma County to establish how school organizational culture influences students' deviant behaviour in secondary schools. The sample size was 384 respondents. Data were collected from 60 schools; 276 students, 59 guidance and counselling department heads, 59 principals, and 55 deputy principals. Among the deviant behaviours that were under the study was the examination malpractices. The study established that school culture among the secondary schools in Bungoma county

ranges from moderate to solid cultures. The results further indicated that school culture was weak in eliminating deviant behaviours in schools. Although the school culture was termed by Nabiswa (2018) as a weak predictor of deviant behaviour among secondary schools in Bungoma County, the current study wanted to establish whether urban school culture had a role in the management of KCSE examination malpractices in Nairobi County.

There are several study that have investigated school culture with reference to academic achievement. For example, Odongo (2013) assessed how positive culture influenced the performance of KCSE in secondary schools in Rongo district. In selecting the sample population, a stratified random sampling technique was carried out, where 20 public secondary schools were selected. The study sought to find out to what extent some cultures would influence the development of positive culture in the school. The study assessed issues relating to effective delivery of the curriculum, the involvement of teachers in decision making by the administrators, emphasis on honour and recognition. The study noted a need to involve teachers in the decision making by the administrators to give them some sense of ownership in the school. This was termed a strong fiber in developing positive culture in the school, and significant in reducing irregularities in schools. The study by Odongo (2013) was based on public secondary schools in Rongo district and negated the private ones. The issue of examination irregularities is a vice that cut across all types of schools; hence, the current study involved both public and private secondary schools in Nairobi County.

A culture can reinstate attitude which is developed in a given environment. However, studies linking attitude with culture and examination malpractices are scarce. An important one is by Musyoka (2012) which investigated the attitude of secondary school teachers and students towards cheating on national examinations in Machakos County. The study sample comprised of 362 students and 30 teachers and adopted a stratified sampling method where schools were categorized into boys national, girls national, boys provincial boarding, girls provincial boarding, and district mixed schools. In one of the questions in the questionnaire, students were asked on the probability of them engaging in examination malpractices and the results were computed against their schools' location. The results obtained showed that students in the municipality who did not mind cheating was higher as compared to those in the rural set-up. Musyoka (2012) also found out that the attitude of students and teachers engaging in examination malpractices increased positively from national to provisional all the way to the district schools. This shows that district schools have high tendencies of cheating in examinations than national schools. The study recommended strict measures to be enforced, educating students on the importance of hard work and integrity. These essential virtues should be inculcated and institutionalized in the entire school as part of school culture. However, the study did not look at how school culture shaped students' and teachers' views on cheating in the examinations.

The school governance plays an essential role in shaping a culture. Shibo et al. (2017) examined the effect of school governance on the prevalence of examination malpractices in KCSE examination in Kisii County. The study adopted a comparative and survey research design. A sample size of 109 principals, 218 invigilators and 10 examination officials to part in the study. In this study, invigilators were interviewed on how the school

assisted learners in examination malpractices, and their response indicated that schools were rarely involved in cheating activities. According to Shibo et al. (2017), school governance did not create an enabling environment for cheating; instead, it encouraged the culture of reading among the students. The study was found very relevant in informing the category of respondents that was considered in the current study.

Poor investment in human capital is viewed as the main cause for the widespread of examination malpractices in Nigeria (Ojonemi et al., 2013).

2.6 Human Resource and Management of National Examination Irregularities

Education plays a very important role in the development of human resource. According to Chukwunonye (2013), the development of human resource is greatly dependent on the environment in which they work in. A conducive environment encourages optimization of human resource by motivating staff to work towards achieving the organization goals. Some of the discouraging environments that tend to demotivate the staff include discrimination in the performance appraisal and in the selection and placement process, and the lack of adequate infrastructure among others (Chukwunonye, 2013).

In Pakistan, a study was conducted by Suleman et al. (2015) to investigate factors contributing to examination malpractices at secondary school level in Kohat division. The study sample comprised of 840 respondents selected through random sampling technique. Among the factors contributing to examination malpractices discussed by Suleman et al. (2015) was the inadequate preparation for the examinations which was found to be correlated with inadequate teaching staff. This concurs with the study by Makaula (2018)

which found that, among the perceived teacher-related causes of teaching were the lack of proper preparation of teachers and failure of teachers to cover the syllabus. These were greatly influenced by the availability of human resource and supervision of the same. This implies that adequacy, preparedness of teachers as significant aspects towards addressing examination irregularities. The study by Suleman et al. (2015) was conducted in Pakistan, hence a great need for local solutions.

A case study in West Arsi and Bale zones in Ethiopia was conducted to investigate the magnitude and perceived determinants of examination misconduct by Badasa et al. (2019). The study sample comprised of 488 teachers who were involved with the conduct of examinations in Ethiopia. Some of the perceived determinants of national examination malpractices identified in Ethiopia included presence of examinations leakages, poor invigilation, unconducive examination rooms and parental influence among others. Badasa et al. (2019) argues that in cases of poor invigilation, students are likely to engage in cheating 6.8 times more than when there is good invigilation. However, Badasa et al. (2019) argues that poor teaching, students giving more value for paper qualifications, poor teaching, corruption and shortage of qualified teachers, were less significantly related to national examination malpractices in Ethiopia. The current study needed to valid this and hence investigated the magnitude to which shortage of qualified personnel affected the management of national examinations in Nairobi secondary schools, Kenya.

Ojonemi et al. (2013) conducted a study in Nigeria on management of examination malpractices to inform the human resource development programs. Ojonemi et al. (2013)

noted that in Nigeria, all the examination bodies usually report cases of examination malpractices every year links that to inadequacy in human resource development. Human resource development is aimed at improving an individual view of things for the benefit of the organisation at large. The results indicated that the increase in examination irregularities in Nigeria led to professional inefficiencies and tainted the image of teachers and exam invigilators. The study argued that the incompetency in carrying out professional works was attributed to the emphasis on paper qualifications. Thus the study recommends that examinations should not be the sole determinant of success of an education system. It also recommended need for training the examination invigilators to ensure unity of purpose and familiarity with emerging tactics for deterring irregularities in national examinations.

The study by Naliaka et al. (2015) investigated the perceived psycho-social and school factors contributing to malpractices in internal examinations in Kakamega central sub-county. The study also investigated the effectiveness of guidance and counselling department in eradicating internal examination malpractices. The units of analysis in this study were 12 schools, from where a total of 359 students were randomly selected for the study for self-administered questionnaires were used. Naliaka et al. (2015). The study noted that examination cheating was still rampant despite relatively active guidance and counselling department in schools. It was clear that poor invigilation, congested examination rooms and inadequate preparation for exams among others were key school factors that influenced examination malpractices. This indicates the importance of staffing factor in the management of examination malpractices; for example, in the guidance and counselling department. The department should be mandated to offer counselling services

to students and staff to discourage involvement in the examination irregularities. The department of guidance and counselling could also be engaged to effectively address the examination cheating by providing psychosocial support. According to Naliaka et al. (2015), the problem of poor invigilation and congested examination rooms could be addressed by staffing the schools and examination invigilation team well. However, the study by Naliaka et al. (2015) only looked into internal examination and this gave this study a chance to look into the influence of human resource in the management of malpractices in national examinations.

Oyieko (2017) conducted a study in Bondo, Kenya on the effectiveness of the rules and regulations set by KNEC. Among other things the study conducted an investigation on forms of examination irregularities, causes of examination malpractices and ways in which the menace can be reduced. The sampled group comprised of 640 students and 25 teachers drawn from 8 schools from both public and private schools. The study found out that the common means of cheating ranged from bringing foreign materials to the examination rooms to impersonation. The reasons for engaging in examination irregularities as highlighted by Oyieko (2017) included inadequate preparation for the examination, pressure from the teachers and parents and the high stakes for paper qualifications among others. To address the examination irregularities, the study suggested need for teachers and principals to ensure adequate preparation for examinations and reducing societal pressure on the students. The study concluded that the rules and regulations set by KNEC were not effective in eradicating examination irregularities. The study by Oyieko (2017) relied on data collected from form 3 students only. This negated crucial information from teachers

and principals, hence not possible to infer human resources issues. The current study collected data from principals and teachers which helped to understand human factor in the management of examination irregularities in secondary schools in Nairobi County.

The role of school administrators in curbing national examination malpractices was investigated by Wambugu in 2015 in secondary schools in Nairobi County. The study sample comprised of 435 respondents drawn from both private and public secondary schools together with County Director of Education. The study sought to look at causes, forms and methods to reduce examination malpractices other than the role of administrators in reducing examination malpractices. The study attributed the malpractice to poor preparation for the examinations by both the teachers and students. The findings concurred with those reported by Suleman et al. (2015) and Makaula (2018) in Pakistan. Wambugu (2015) states that inadequate preparation for the examinations increases the chances of cheating in examinations by 36.4%. The study singled out collusion between teachers and students as key contributor to examination irregularities. The study argues that the main method of eradicating examination irregularities is ensuring adequate preparation for examinations. However, it was not in the study whether the poor preparation for examination had positive correlation with the adequacy of human resources. This gave this study a chance to look into the relationship between human resource, poor preparation for examinations and management of examination irregularities in Nairobi secondary schools.

2.7 Theoretical Framework

The study was guided by five theories, that is, self-efficacy, regulation theory, agency theory and Vygotsky's socio-cultural theory. Each theory and its relevance in this study is discussed here below.

2.7.1 The Self-Efficacy Theory

The self-efficacy theory was developed by Bandura in 1997. It describes how beliefs possessed by an individual subject, mingled with their ability to complete allocated task or attain specified goals in life as an influence of how they behave, react or act upon the tasks. Bandura hypothesized that the level of self-efficacy determines the amount of energy, persistence and devotion channeled towards a task initiated, the amount of effort that would be expended and the level of persistence to complete the task when faced with obstacles.

Bandura further noted that self-efficacy among individuals emanate from a variety of sources; mastery experiences, vicarious, social persuasion and emotional states of the individual. Logically, the theory articulate that the combination of the four attributes enable individuals to belief in their own capacity to achieve the set goals and obligations set for them. This self-believe was also backed up with self-motivation to sacrificially undertake the task unattended by them.

Conceptually, the self-efficacy theory by Bandura bears tremendous strengths which are significant to this study. It helped to underpin the aspects surrounding academic environments of learners in secondary schools. The constructs of managing examination irregularities, learning resources, school culture influence and human resources and adequate preparedness of students were addressed. This is because KCSE examinations

must be undertaken in Nairobi County in Kenya and any ill behavior among students, which in this case, is, examination malpractices bred up as a result of negative self-belief implanted among students which may be as a result of inadequate learner preparations and limited supervision of candidates. Poor self-efficacy of learners, therefore, explain why candidates might decide to engage in fraudulent ways in order to pass examinations.

The theory helps to illustrate the importance of secondary school stakeholders in undertaking salient roles in order to ensure learners are adequately prepared for examinations. Notably, examination malpractices recur as a result of candidate's self-efficacy in the aspects of mastery of experiences, vicarious, social persuasion and emotional which can be attributed to inadequate preparedness, inadequacy of learning and consulting resources and poor enactment of institutionalizing measures that discourage cheating in examinations. Teachers are also in the forefront in influencing learners behavior during examination, in that, their adequate guidance and devotion towards preparing the candidates also transfer aspects of confidence.

The theory is however critiqued for missing to elucidate the specific practices that ought to be practiced by learners in order to boost their mastery experiences, vicarious, social persuasion and emotional states in order to build self-efficacy and confidence to face examinations. Nevertheless, this did not demean its application in this study since it has great potential in explaining the cases for continued examination malpractices among secondary schools in Nairobi County.

2.7.2 Regulation Theory

The regulation theory was founded by Brenner and Glick in 1991. The theory is concerned with the best way to allocate scarce public resources, services, products and final goods. Brenner and Glick argued that for effective allocation of resources, a significant extent of market mechanisms was necessary to enable equity and even distribution of final products. Brenner and Glick (1991) further postulated that in some circumstances, the methodology of utilizing market mechanism technique bore some optimal results on resources allocation. However, market changes are volatile, and are frequently changing, and this usually interfere with optimal and equilibrium allocation of resources.

The perpetual disequilibrium for markets prompt these scholars to go an extra mile and identify potential remedial mechanisms to address the market situation in the production of good and final products. The theorists noted that an effective and efficient methodology capable of addressing the business field challenges was the introduction and enactment of a government regulation framework. This is because a comprehensive government regulation strategic approach that has the potency of overcoming the disadvantages of imperfect competition, unbalanced market operations, missing markets and undesirable market results.

In this study, regulation theory is applicable in defining the management of KCSE examination irregularities in Nairobi County by imposing comprehensive regulatory framework. This also has a stake in the culture and norms of the school environmental premises having known that a school culture is incomplete without a common belief

systems and a way of doing things spiced up with clear rules and regulation governing each school activity. This gave the theory the foundational basis for schools to premise on strong policy from KNEC regarding handling examinations, for code of ethics with clear consequences where there is lack of adherence, school rules and regulations, policy, legislations, ACTs, penalties, directives and guidelines for handling secondary school examination irregularity occasions in order to restore academic integrity. Regulation of KCSE examinations offers a firm foundation stem from the fact that it will stop unduly advantage of the coping candidates over the transparent ones.

2.7.3 The Agency Theory

Agency theory was developed by Jensen and Meckling in 1976 who were expounding a concept of organizational governance based on the conflict of interest of the immediate stakeholders. Jensen and Meckling conceptualized that organizational stakeholders seem to exhibit differences and variations during group decision-making. The agents who may be delegated to some work by the principal, may exhibit a lot of differences in behavior, goals, attitudes and objectives and this may be a source of potential conflicts and risks due to imbalances. The theorists' argument noted that, risk sharing is an important aspect which was worth embracing in order for agents, subjects and subordinates to encounter minimal costs of being overruled by the direction and interests of the principals (Mitnick, 1975).

Jensen and Meckling (1976) also acknowledged that the parties although they had a common vision and mission, the motives were differing and even some of the stakeholders' motives were atelior. Due to these range of differences, they explained that stakeholders ought to undergo partial goal conflict among parties, hindering efficiency and

effectiveness, due to principal and agent asymmetric behavior. In order for the benevolent purpose of the organization to be met, the theory recommended the development and enactment of favorable and workable standards, structures and government policy regulating the interests of both agents and the principal was necessary. Other expedient mechanisms towards addressing the agency problem and gap is to devise remuneration strategies to make principals act in best interest of shareholders, having a board of directors that monitors the compliance of the organization strategic and long-term plans and setting accountability agents.

Conceptually, this theory anchors how school principals, examination invigilators, teachers, examination supervisors and security officers as agents of the ministry of education and; hence, they ought to act in the best interest of the government by ensuring appropriate management of examination irregularities. Therefore, the theory conceptualizes on the role of human resources in managing KCSE examinations in Nairobi County. It underpins how deployed human resources ought to help the Ministry of Education manage examinations by offering teaching, adequate learner preparation, setting examinations, collecting, marking, grading, invigilation, administration, security services and guarding the adherence to examination code of conduct and ethics. The principal which is the Ministry of Education ought to fairly remunerate the agents in order to allay any atelier motives and temptations coming with demotivation of staff.

2.7.4 Vygotsky's Socio-cultural Theory

This theoretical contribution is a work is attributed to a Russian psychologist; Lev Vygotsky who is believed to have conceived the idea between 1896 and 1934. The theorist

major ideology was to lay the foundations of constructivism. Vygotsky's assertion was built on three major themes which were: social interaction, the place of culture in learning and social learning and communication aspects which play a fundamental role in the process of cognitive development.

Later on, the theorist premised that More Knowledgeable Other (MKO) as fundamental aspect which contributed to child cognitive learning behavior within a given contextual environment. The effectiveness of MKO was dependent on teachers, parents, peers, technology, adults and elderly who we deemed better in understanding or possess higher knowledge ability on a subject matter compared to the learners. Moreover, later on, a Zone of Proximal Development (ZPD) was also deemed profound to address learner grasping of the learned tasks. This was indicated by the distance between a student's ability to perform a task under adult guidance and/or with peer collaboration and the student's ability solve the problem independently.

According to Vygotsky, efficient learning occur in the social cultural zone (ZPD), where the learner- elder interaction and sharing of experiences relationships between the learner and the teacher, which, in this case is the knowledgeable fellow. The theorist further explained that communication tools in the culture learning zone, such as speech and writing were developed through internalization, social interaction with symbols on beliefs, values, customs and traditions. This implied a shift in the intended role of a teacher from offering pedagogy to collaborate with students in order to help facilitate meaningful instructions to students. The meaningful instructions would ensure that are well prepared to face examinations, hence, less irregularities.

The second premise on the “More Knowledgeable Others” underpin the fundamental role of school administration including the principals, teachers, invigilators and supervisors in creating a conducive atmosphere for learning through shared vision and missions. Through these interactive processes, the Zone of Proximal Development (ZPD) is then achieved when students post transparent and true results in national exams.

In this study, Vygotsky’s theory address the constructs of human resources and school culture in addressing the management of KCSE examination irregularities in Nairobi County. The study held that a conducive positive culture goes on a long way to influence candidate’s integrity and academic transparency during examinations. The role of the professionals in offering adequate preparation during learning, teaching and conducting practical subjects also contribute to better culture of deterring examination malpractices. Effective learning ought to be stipulated with adequate learning and teaching materials, adequate teachers who have requisite professionalisms and high level of pedagogy and instructional delivery strategies. These ought to grow a culture of learning and confidence which leads to increased academic integrity, hence less examination irregularities.

Vygotsky’s theory may however be criticized for lack of experimental tests and failing to define social interaction best methods to engage with learners. Despite this, the theory exhibit a lot of strengths in underpinning the role of school culture in managing KCSE examination irregularities in Nairobi County.

2.7.5 Socio-learning theory

This theory was developed by Albert Bandura in 1977. He argues that the behaviour of a person can be formed by observing and learning from one another, he referred to this as observational learning. Observational learning happens when an individual observes the reward or penalty given for certain actions. In our case examination irregularities. If an individual engages in examination malpractices and is rewarded with good grades instead of cancelled results, this is likely to influence many more students to engage in the same. Observational learning is totally dependent on the mental state of the observer and his attitude towards the model being observed as Bandura observed that one can learn new information without stipulating any change in behaviour.

Observational learning takes place when an individual observes a model. The model could be a live, verbal or a symbolic model. A live model is somebody or something they can easily relate to in this case the teacher or fellow student. A verbal model happens when a behaviour is demonstrated by word of mouth and they picture it in their minds. In symbolic model the character being observed may be in fiction or television programs and they relate them in real life situations.

Factors that influence observational learning were listed to include, attention, retention, motor reproduction and motivation. Attention in itself involves showing interest to the model being observed. Retention refers to the ability of remembering what was observed and retaining that information in the memory. On the other hand, the ability to translate what is stored in memory into action refers to motor reproduction and for observational

learning to be complete there must be a driving force towards imitating the behaviour observed in the model.

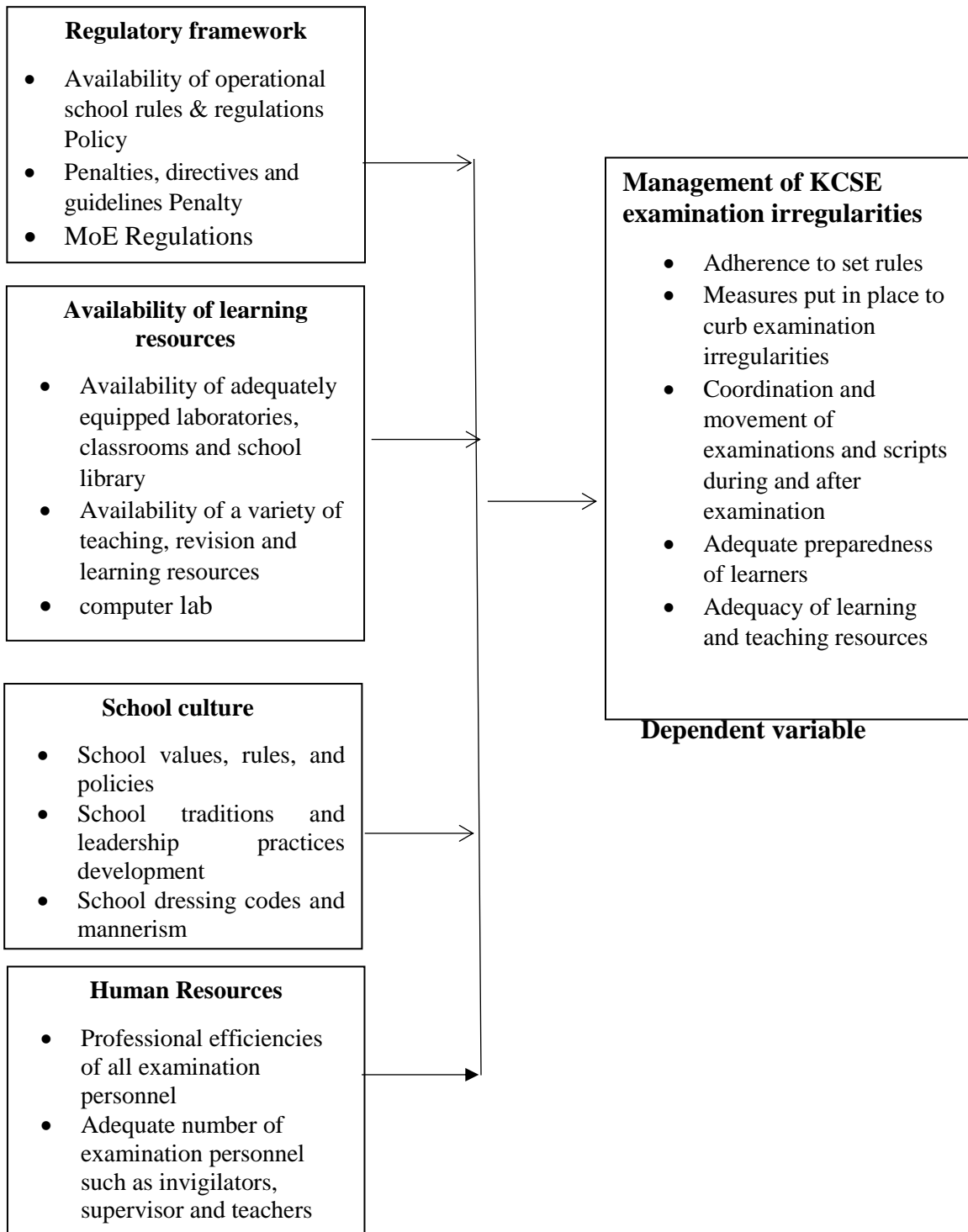
Under socio-learning, Bandura studied an aspect of reciprocal determinism. In this he argues that the behaviour of an individual is directly determined by three aspects that is, the environment, the person and the action itself. According to Bandura, the environment consists of tangible things and affects the behaviour of an individual as the behaviour itself affects the environment. The environment in school comprises of every individual present in the school set up and also those in absentia but greatly influence the behaviour of individuals within the school. Bandura's theorem could be used to study the school culture as behaviour of students in the school is influenced by the school culture and the availability of leaning facilities which directly or indirectly influenced school culture.

2.8 Conceptual Framework

The conceptual framework which is presented in Figure 2.1 has provided a visual relationship between the study variables. On the left side of the figure are the independent variables which were based on the objectives of the study. The variables included regulatory framework availability of learning resources, school culture, and human resource. On the right side is the dependent variable; the management of KCSE examination irregularities.

Figure 2. 1

Conceptual Framework



2.8.1 Description of Variables in the Conceptual Framework

The management of KCSE examination irregularities is the dependent variable of the study. Regulatory framework, availability of learning resources, the school culture and human resources are the independent institutional-based factors which are postulated to influence the management of KCSE examination irregularities in Nairobi County.

Regulatory framework was found to play a critical role in managing examination malpractices. It was characterized by policy, penalty, regulations & guidelines from the Ministry of Education, the availability of operational school rules & regulations and the availability of education ACTs penalties, directives and guidelines.

The learning resources formed the second objective of the study and the assessed resources were: laboratories, classrooms, computer rooms and workshops. This variable was evidenced by the availability of adequately equipped laboratories, a well-equipped computer lab, classrooms and school library with a variety of revision, syllabus and other learning and teaching materials in a variety of formats.

On the school culture variable, indicators such as school ethical values, school rules, regulations and policies, school traditions, leadership practices and development, school dressing codes and mannerism for character development aspects were examined. The correlation between the human resources and the aspects of examination irregularities were determined. The human resources aspects on syllabus coverage and adequate preparation were among the areas of interest. Moreover, the professional efficiencies and adequacy in number of the examination personnel such as the invigilators, supervisor and teachers was determined.

Under the dependent variable, the adherence to set rules, measures put in place to curb examination irregularities, and coordination and movement of examinations and scripts during and after examination were assessed to determine their effectiveness in managing the menace. Adequate preparedness of learners and the availability of adequate relevant learning and teaching resources was also an indicator utilized in the study to address the management of KCSE examination irregularities in Nairobi County.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the design and methodology used in gathering data for this study. It describes the research design, location of the study, sample size and sampling design, data collection instruments, procedures used in collection and analysis of data. The chapter concludes by discussing ethical issues observed in this study.

3.2 Research Design

Research design describes the general strategy and structure employed in a study to accomplish identified research objectives (Obwatho, 2014). According to Babbie (2014), a researcher should specify the methods used in detail which entail how data was collected, measured and analyzed within certain limitations. This study utilized the descriptive survey design to obtain information regarding management of KCSE examination irregularities in Nairobi County.

The descriptive survey design was considered appropriate for the study because it is concerned with describing situations, analyzing and reporting conditions and circumstances regarding what, when, and how events or activities are done as they exist or existed. The main constructs of this study were regulatory framework, availability of learning resources, school culture, and human resources – all of which required establishing the state of affairs and practices which helped to infer the appropriate measures needed to improve the management of examination irregularities in secondary schools. The

use of descriptive survey design therefore enabled the application of standardized tools for collecting data such as a questionnaire and interview from the target population. It is flexible, versatile, and inexpensive to apply, and usually enable a researcher to collect broad range of factual data as noted by Creswell (2018). Related studies that have used this design include Nabiswa (2018), Shibo et al. (2017), Oyieko (2017) and Wambugu (2015). Reference to these studies gave research confidence that the design was also suitable for the current study.

3.3 Location of the Study

An ideal setting for any study is one that is directly related to the context of the study and bears characteristic that have interested the researcher's interest. In this study the location refers to a geographical description from where data was collected to enable coming up with solutions that can also be applied in other areas or regions with similar characteristics.

The study was conducted in Nairobi County, Kenya. The Nairobi County had 99 secondary schools (69 public and 30 private) by the time this study was conducted. The major economic activity in Nairobi County is businesses. The County also has presence of established organizations that cut across different sectors of the economy. The choice of the Nairobi County as an area of study was motivated by several cases of examination irregularities reported in KCSE (Nyawira, 2019; Owenga, 2020; Muiruri & Kinogu, 2021).

3.4 Target Population

Obwatho (2014) describes target population as a collection of elements from which the actual sample is selected to participate in the study. Target population constitute the units of analysis. In this study, the units of analysis were public and private secondary schools in Nairobi County. According to the Nairobi County Education Office records, Nairobi County had 99 secondary schools (public and private) by 2019. The public schools were 69 while private ones were 30. The main respondents (units of observation) were the school administrators, that is, the 99 principals, 99 dean of students, and 99 students' leaders and one County Director of Education, Nairobi County. Table 3.1 shows the summary of target population from secondary schools in Nairobi County.

Table 3. 1

Target Population

Target Population	Number of schools	Principals	Heads of department for compulsory subjects	Student President	Sub-total
Sub-county secondary schools	19	19	133	19	190
County secondary schools	25	25	175	25	250
Extra-county secondary schools	19	19	133	19	190
National secondary school	6	6	42	6	60
Private secondary schools	30	30	210	30	300
Total	99	99	693	99	990

Source: Nairobi County Education Office (2019)

Since this study addressed the management issues regarding KCSE irregularities, then principals of secondary schools (both public and private) were the main respondents. This

is because, principals are the chief accounting officers for KSCE and are held responsible for mishandling of examinations (Advance-African, 2016). The dean of students were very central in this study. This was because, apart from teaching, they were involved in preparing and sensitizing students before seating for internal and national examinations. Specifically, the dean students in a secondary school deals with any case of examination malpractice discovered while conducting internal exams. The officer is also expected to arrange students in the class room during internal and external examinations to ensure sufficient spacing; usually, 1.5 meters apart. During the national examination, the dean of students usually issue out stickers to the students and ensures that the students stick them on their desks for ease of identification by the invigilators. The dean further ensures that the sitting arrangement issued out by KNEC is adhered and that students are arranged according to their index numbers. Their views were therefore very significant in informing the areas of improvement. The students' presidents were also considered resourceful in providing information regarding control measures needed to curb malpractices before and during national examinations. The County Director of Education provided information on policy issues to curb examination irregularities in KCSE.

3.5 Sampling Procedure and Sample Size

Sampling procedure provides details on the way subjects are selected from target population. The procedure is usually systematic and orderly to ensure appropriate representation of elements (Kamau et al., 2014). In this study, stratified random sampling technique was adopted where secondary schools were first classified into two categories; public and private. Second, the public secondary schools were further categorized into

county, sub-county, extra-county, and national schools. The simple random sampling technique was, hence applied in selecting schools from each stratum (category).

The census sampling technique was further applied in selecting one dean of students the principal and one student’s president from each sampled school. These three categories of population was purposively sampled to participate in the study. There was only one County Director of Education who was also purposively selected.

In determining the sample size for the schools, a sample size determination table developed by Krejcie & Morgan (1970) was applied which gave a sample size of 80 from 99 schools. The actual number of schools that took place from each stratum was hence computed proportionally. The sample size is summarized in Table 3.2.

Table 3. 2

Summary of Sample Size

Target Population	Number of schools	Principals	Dean of Students	Student President
Sub-county secondary schools	15	15	15	15
County secondary schools	20	20	20	20
Extra-county secondary schools	15	15	15	15
National secondary school	5	5	5	5
Private secondary schools	24	24	24	24
Total	80	80	80	80

3.6 Research Instruments

In this study, data was gathered using questionnaires and interview schedule. The questionnaires were administered to principals and dean of students while interview schedules was used on students' presidents and County Director of Education. The questionnaire tool had been sectioned to ensure exhaustive coverage of all constructs. Section A, had questions on background of respondents. The other sections were organized according to the main variables of the study and labelled section B to F. The sections were on regulatory framework, availability of learning resources, school culture, human resources and management of KCSE examination irregularities. Most questions were closed-ended and a few open-ended questions. The closed-ended questions were in 5-level Likert scale which enabled measuring of a latent variable. The questionnaire was preferred because to enable the study to collect a lot of information, hence, economizing on time and cost. It also enabled standardizing the question elements across all respondents who filled the questionnaire.

The interview schedule was also organized according to the main variables of the study, and was semi-structured. Section A, had questions on background of respondents. The other sections were organized according to the main variables of the study and were labelled section B up to F. The sections were on regulatory framework, availability of learning resources, school culture, human resources and management of KCSE examination irregularities and interview schedule.

3.7 Piloting of Research Instruments

The instruments of collecting data were first pre-tested before the actual ones were administered. The pre-testing was done in Kiambu County, where, five secondary schools were randomly selected to participate in the pretesting. The Kiambu County was selected as a site of pre-testing because of its close proximity to Nairobi County. The characteristics of schools in Kiambu County largely similar to those of schools in Nairobi County. The five schools were selected as follows: one sub-county secondary schools, one county secondary schools, one extra-county secondary schools, one national secondary school, and one private secondary schools.

The participants were selected using simple random sampling technique. The piloting of instruments helped the researcher to assess the completeness of the questions to avoid ambiguity. The pretesting exercise was carried out by the researcher after which data was scrutinized to detect errors and areas of improvement. Data collected helped to determine reliability and validity of the research instruments.

3.8 Validity of the Research Instruments

Validity is a determination on whether the data truly represent the phenomena that are investigated. This helps to check and inform the integrity of the decisions made out of the data. In this study, content, construct and face validity were checked. Content validity involved consultations with the supervisors and research experts to ensure all aspects were exhaustive in coverage. The face validity involved checking for clarity of the questions and general organization with a view to enhance the face of research instruments. The construct validity was ensured by checking theoretical concepts and how they were represented in

the questionnaire and interview guide. The specific indicators for each variable helped to ensure that every sentiments actually measured what it was meant to assess.

3.9 Reliability of the Research Instruments

Consistency in achieving similar results is very critical in a study. The more the results show consistency, the more the data is regarded reliable (Bryman & Bell, 2011). The reliability of instruments was determined by checking for internal consistency using Cronbach alpha test in SPSS. This entailed computing the inter-item internal consistency using the Cronbach's coefficient alpha. A threshold of 0.7% Cronbach's coefficient was regarded acceptable as noted by Bryman and Bell (2011).

3.10 Data Collection Procedure

As already mentioned, for the study a self-completion questionnaire will be issued to members of faculty and librarians. As per Ghauri and Gronhaug (2010); Bryman and Bell (2011) in presenting the questionnaire, The procedure for administering research instruments started with getting approval and research permit. A cover letter explaining the purpose of the study was also prepared. In administering questionnaires, 5 research assistants were engaged. The 5 research assistants were first trained and given information on what was expected of them in the field. The aim of the training is to ensure that all research assistants understood the research instruments thoroughly and briefed on what to explain issues that may be raised by respondents. The sampled respondents were approached and asked to complete the questionnaire. They were given around thirty minutes to do so. Those who had busy schedule had their questionnaires picked at a later date as agreed. The filled questionnaires were serialized accordingly to promote accountability.

In administering interview, the researcher booked appointment for interview session with the selected respondents. This was administered by the researcher but was assisted to record by one research assistant. The interview session started by a warm welcome and a brief on the purpose of the study. The respondent was asked for permission to allow digital recording of the conversation. During the interviewing process, the researcher observed respect and engaged the respondent to clarify issues that did not sound clear. The probing was done carefully to enable detailed responses to the key questions. At the end of the session, the researcher appreciated the respondents for their time and responses.

3.11 Data Analysis Techniques and Presentations

The data collected was analysed qualitatively and quantitatively. The descriptive statistics was applied in analysing the quantitative data, where mean and standard deviation were computed. The quantitative data were analysed with the aid of percentage and the Statistical Package for the Social Sciences (SPSS). The Pearson correlation and regression analysis were done to determine the underlying relationship and test the overall purpose of the study. The following multiple linear regression was used.

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \hat{\epsilon}$$

Where: Y = Management of KCSE examination irregularities

β_i = Coefficients to be estimated

X1 = Regulatory framework

X2 = Availability of learning resources

X3 = School culture

X4 = Human resources

$\hat{\epsilon}$ = Error term

Before the inferential statistics were applied, diagnostic tests were carried out to determine the suitability of the applicable analysis. The diagnostic test done were normality, linearity, heteroscedasticity, autocorrelation and multicollinearity. The results were presented using tables and figures.

The study also had data collected using interview and few open-ended questions. These resulted to qualitative data which was analysed deductively using content analysis. This helped to identify themes from the contents which were later categorized to meaningful concepts. The derived concepts were used to explain the observations in the findings and also informed the conclusions and the recommendations made in this study. In presenting qualitative data, excerpts and themes and narrative were used.

3.12 Ethical Considerations

The study followed ethical procedures as recommend by Kamau et al. (2014). Ethics are important in research because they spell out the norms that guide any research activity, particularly the way researchers gained authorization to collect data and the behaviour expected from them in the field (Obwatho, 2014). In the first instance, a researcher obtained research permit from National Commission for Science, Technology & Innovation (NACOSTI) after getting an introduction letter from KeMU. During the process of data collection, informed consent was the mainstream criteria of each respondent participating in the study. This was requested through a cover letter.

To ensure anonymity, respondents were not required to write their names on the questionnaire. In addition, the researcher assured the respondents confidentiality in handling all the information that was gathered during data collection. More ethics were observed during the interviewing moment to avoid intrusion. Thank you notes/statements were made to appreciate all people who offered help in the field. The researcher also ensured data was analysed ethically with no fabrication. The study further ensured that all the information sources consulted were cited and referenced according to the 7th edition of the APA manual.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Introduction

This chapter provides a presentation of the findings and discussion based on the analysed data. The findings are presented in accordance with the variables of the study. In each case, the findings on descriptive analysis based quantitative data are presented first. The same is integrated with the qualitative data from interviews. The findings on diagnostic tests are then presented before the results of correlation analysis and regression analysis to ascertain the choice of the statistical technique. Both the correlation and regression analysis were used to test the research hypothesis and the overall model of the study. The findings reported in this chapter were discussed and integrated appropriately. The empirical literature and theories that guided this study were consulted as well to provide a reflection of the findings. In this chapter, the findings on reliability and response rates are presented first. Second, are the findings on background information regarding the respondents and finally findings on each variable of the study.

4.2 Reliability Test Results

The dependability of research instruments was ascertained by computing the Cronbach's Alpha level of significance before carrying out the main analysis. The results are summarized in Table 4.1.

Table 4. 1

Reliability Results

Constructs	Cronbach's Alpha
Regulatory framework (X1)	0.785
Availability of learning resources (X2)	0.919
School culture (X3)	0.801
Human resources (X4)	0.832
Management of KCSE examination irregularities (Y)	0.889

According to results in Table 4.1, the Cronbach's coefficient alpha value was noted to be more than 0.7 in each case; hence, data was regarded reliable as recommended by Bryan (2014).

4.3 Response Rate

In this study, a total of 80 secondary schools in Nairobi County had been sampled to participate in the study. However, out the 80, only 66 confirmed and participated in the study which represented 83% response rate. The principal, dean of student and student president from each of the 66 schools participated in the study. Table 4.2 provides a summary of response rates from each category of schools.

Table 4. 2***Response Rate***

Target Population	Number of sampled schools	Number of sampled schools that responded	Percentage response rate
National secondary	5	4	80%
Extra-county	15	11	73%
County secondary	20	17	85%
Sub-county secondary schools	15	13	87%
Private secondary schools	24	21	88%
Total	80	66	83%

The good overall response rate was attributed to good prior planning and cooperation from the sampled public secondary schools.

4.4 Demographic Characteristics of Respondents

The particular background information gathered from respondents included gender, qualifications, and teaching experience. On gender issue, the analysed information indicated that female teachers were 36 (55%) male teachers were 30 (45%). This implied that responses were secured from both gender in the study. The fact that the number of participating respondents did not overlap with a big range confirms a balanced representativeness of both genders in the study hence gave the study a balanced gender perspective in assessing the institutional based factors that influence the management of KCSE examination irregularities in Nairobi County hence disagreeing with Mwonga (2019) who found that in Makueni County, the dominant gender of teachers were male gender. Wambugu (2017) also noted that female secondary school teachers were slightly more compared to the male gender although the gap was not huge enough; hence, a

balanced representation. In contrast, Opiyo (2015) findings noted that secondary schools were predominantly dominated by women teachers other than male.

A question on the highest qualifications of teacher was posed to the respondents to help in understanding gender composition of secondary school teachers. The findings are shown in Table 4.3.

Table 4. 3

Highest qualification of secondary school teachers in Nairobi County

Highest qualification	Frequency	Percent
Masters	24	35.8
B. Ed	42	62.7
Total	66	98.5

The results show that 42 (62.7%) teachers in secondary schools in Nairobi County had a bachelor of education degree while the rest, 24 (35.8%) had master’s degree. This indicates that all secondary schools teachers in Nairobi County were qualified for the job; hence, they had the knowledge to teach students and guide them on how to handle examinations. Relevant teaching knowledge is critical in preparing learners for education achievement. This also illustrate that these teachers were in a better position to provide credible responses regarding the institutional based factors that influence the management of KCSE examination irregularities. The findings contrast with those of Opiyo (2015) who noted that secondary school teachers in Kisii County had certificates, diplomas and majority of them possessing degree with only 20% in leadership positions having master’s degree academic qualifications. In agreement were the findings of Mwonga (2019) who noted that secondary school teachers in Makueni County had bachelors and masters’ degree highest levels of academic qualifications.

The study further sought to establish the length of teaching experience of teachers. This was significant in determining the relevance and objectivity of responses regarding the institutional determinants for addressing irregularities in KCSE. The findings are presented in Table 4.4.

Table 4. 4

Teaching experience of secondary school teachers in Nairobi County

<i>Length of service in the teaching profession</i>	Frequency	Percent
Less than one year	5	7.6
4 – 6 years	14	21.2
1 – 3 years	8	12.1
7 – 9 years	23	34.8
Over 10 years	16	24.2
Total	66	100.0

According to the results in Table 4.4, most teachers in secondary schools in Nairobi County, 23 (34.8%) had worked between 7-9 years, while 16 (24.2%) had over 10 years 30.2%); 14 (21.2%) had over 4 – 6 years. Only 5 (7.6%) had less than one year.

The findings show that the secondary teachers in Nairobi County had sufficient teaching experience. This indicate that the teachers had experience in teaching and assessing learners. It also meant that they had relevant experience in handling examinations hence were endowed with requisite skills and knowledge that could best suit the study constructs. Their experience was critical in informing strategies and measures that can help in addressing KCSE irregularities. Results were agreeing with the findings of Mwonga (2019) who noted that 63% of teachers in Makueni County had work experience of between six and ten years and very few individuals had worked in their current station of employment

for a period of less than five years. This further informed that long appointed teachers were very effective in manning examinations. Opiyo (2015) also noted that 52.2 % of teachers in Kisii County had worked in their current station between 6 -10 years, which was considered adequate for allaying relevant insights on exam irregularities.

4.5 Management of KCSE Examination Irregularities in Nairobi County

This study focused on institutional-based factors for addressing KCSE examination irregularities in secondary schools in Nairobi County. The management of KCSE examination irregularities in secondary school was therefore the dependent variable in this study. In assessing this variable, various sentiments regarding KCSE examination irregularities were posed to respondents with an aim to establish the extent to which each was influencing the management of irregularities. The findings are presented in Table 4.5.

Table 4. 5***Measures for addressing KCSE examination irregularities***

Statements on measures for addressing KCSE examination irregularities (n = 66)	VSE(1)	SE(2)	ME(3)	LE(4)	VLE(5)	Mean	Std. Deviation	Factor loading
• Adequate preparedness of learners	2(3.0%)	4(6.1%)	2(3.0%)	27(40.9%)	31(47%)	4.23	.989	.702
• Cancellation of results	11(16.7%)	7(10.6%)	4(6.1%)	20(30.3%)	24(36.4%)	3.59	1.488	.767
• Banning of students from taking another examination for a specified period of time	4(6.1%)	16(24.2%)	18(27.3%)	23(34.8%)	5(7.6%)	3.14	1.065	.717
• Adequacy of learning and teaching resources	16(24.2%)	7(10.6%)	11(16.7%)	23(34.8%)	9(13.6%)	3.03	1.414	.722
• Institutionalizing measures that discourage cheating in examinations	14(21.2%)	13(19.7%)	5(7.6%)	28(42.4%)	6(9.1%)	2.98	1.364	.707
• Embracing e-invigilation by use of CCTVs	14(21.2%)	12(18.2%)	21(31.8%)	16(24.2%)	3(4.5%)	2.73	1.184	.663
• Embracing biometric to deter impersonation	20(30.3%)	11(16.7%)	13(19.7%)	19(28.8%)	3(4.5%)	2.61	1.311	.602
• Banning the use of mobile phones at the examination center	19(28.8%)	11(16.7%)	17(25.8%)	17(25.8%)	2(3.0%)	2.58	1.241	.575
• Holding school principal responsible for leaking of examination in the school	17(25.8%)	15(22.7%)	16(24.2%)	17(25.8%)	1(1.5%)	2.55	1.179	.807
• Adequate KNEC officers during examination administration	19(28.8%)	11(16.7%)	21(31.8%)	14(21.2%)	1(1.5%)	2.50	1.167	.790

Statements on measures for addressing KCSE examination irregularities (n = 66)	VSE(1)	SE(2)	ME(3)	LE(4)	VLE(5)	Mean	Std. Deviation	Factor loading
• Ensuring that security personnel are strategically positioned during examination administration	22(33.3%)	11(16.7%)	13(19.7%)	19(28.8%)	1(1.5%)	2.48	1.268	.649
• Number of security officers during examination administration	25(37.9%)	12(18.2%)	10(15.2%)	12(18.2%)	7(10.6%)	2.45	1.427	.520
• Mandatory guidance and counselling for students who have been noticed with the vice	28(42.4%)	8(12.1%)	12(18.2%)	18(27.3%)	0(0%)	2.30	1.277	.638
• Strict rules during and after a national examination	29(43.9%)	24(36.4%)	7(10.6%)	4(6.1%)	2(3.0%)	1.88	1.031	.669
• Imprisonment of culprits	42(63.6%)	16(24.2%)	2(3%)	2(3.0%)	6(9.1%)	1.70	1.228	.506
Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy = .792								

The results in Table 4.5 show the extent to which various measures would be helpful in addressing examination irregularities. It is clear that all the suggested measures loaded very well with Eigen value that is above 0.45. The Kaiser-Meyer-Olkin (KMO) is .792; which, further confirms that all the suggested measures were adequate in addressing KCSE examination irregularities. The five top most measures which are helpful in addressing the KCSE examination irregularities to a large extent were adequate preparedness of learners (mean =4.23), cancellation of results (mean =3.59), banning of students from taking another examination for a specified period of time (mean =3.14), adequacy of learning and teaching resources (mean =3.03), and institutionalizing measures that discourage cheating in examinations (mean =2.98) and a standard deviation that is around 1.

Adequate preparedness of learners, adequacy of learning & teaching resources and institutionalization of measures that discourage cheating in examinations are 3 effective measures that ought to be taken way before the examination. These mean that when learning & teaching resources are not enough, it contribute to cheating in examinations. Similarly, when learners are not adequately prepared in terms of syllabus coverage and revision, they would be tempted to engage in examination irregularities. The cancellation of examination results and banning of students from taking another examination for a specified period of time and punitive measures that are meant to discourage students from engaging in examination irregularities. Oyieko (2017) findings to some extent also agreed with some measures found reported herein who found that adequate preparation of learners and posing strict rules for malpractice offence penalties were very effective in alleviating exam cheating malpractices. However, additional opinions surfaced in their findings on

imposing strict invigilation. Duvie and Eluwa (2016) further indicated that effectiveness of malpractice mitigation required the enactment of a comprehensive mitigation policy covering syllabus coverage in time, training examinees and invigilators on exam malpractices, posing very high penalties to culprits found in the wrong, holding invigilators and principals liable if a school cheats and cancellation of results for cheating candidates other than single utilization of adequate learner preparation.

In an open-ended questions, respondents also indicated the need to fire the supervisors and invigilators found helping students to cheat in national examination. Duvie and Eluwa (2016) and Adow et al. (2015) concurred to these findings but however disputed the need to hold the school principal responsible in occurrence of cheating practice in Nigeria. They instead recommended introduction of punishment and accountability mechanisms.

The results are also showing the essence of technology in fighting KCSE examination malpractices. The embracing e-invigilation through use of CCTVs and adopting biometric to deter impersonation during examination would help to address the examination malpractices to a large extent. It is also clear that banning the use of mobile phones at the examination centers is also an important measure because it discourages exposure and sharing of examination content. Other effective measures indicated by respondents are human-based factors that included holding school principal responsible for leaking of examination in the school, adequate KNEC officers during examination administration, and ensuring that security personnel are strategically positioned during examination administration.

Respondents further pointed out the need to address the low payment of personnel involved in examination invigilation. The need to ensure adequate prior training of supervisors and

invigilators was also noted. Findings compare with the views found by Oyieko (2017) who stressed that deploying CCTV cameras and banning of mobile phones in examination premises were effective measures for curbing examination malpractices and non-adherence to stipulated practices. Concerning human-based strategies, Duvie and Eluwa (2016) also seemed to agree with the study findings which informed the need to have adequate invigilators in the examination premises. Getange et al. (2015) also concurred saying that secondary school invigilators ought to be trained prior to the invigilation exercise, sensitized on exam malpractices and subsequent repercussions. It was also agreed that fare remuneration and provision of good working conditions of the deployed invigilators was a good milestone for curbing supervisor involvement in assisting candidates to cheat in exams.

The findings in Table 4.4 further shows some measures which were termed as less effective (very low extent) in addressing the KCSE examination irregularities. These were; imprisonment of culprits 42(63.6%), strict rules during and after a national examination 29(43.9%), mandatory guidance and counselling for students who have been noticed with the vice 28(42.4%), and number of security officers during examination administration 25(37.9%). As much as some of these measures have been embraced in fighting national examination malpractices, the findings of this study show that the extent of their effectiveness in addressing the KCSE examination irregularities was very low. The findings presented in the study did not concur with those presented by Mutinda (2017) and Getange et al. (2015) who reported that imposing of strict rules, deploying of adequate supervisors during examination and student guidance and counselling were very effective methodologies for eradicating fault practices of examination cheating.

When contacted for suggestions for effective management of KCSE examination irregularities, the County Director of education noted need for a legislation and policy that recognize the continuous assessment so that the learner's ability and future is not determined by one sit-in examination. This was described as significant in reducing pressure on students as well as the high regard attached to the KCSE results. The students' presidents said that the act of elevating principals from the performing secondary schools, usually encourages examination malpractices. Therefore, the promotion of principals should be detached from KCSE examination performance.

4.6 Regulatory Framework and Management of KCSE Examination Irregularities

The first objective of this study was to determine how regulatory framework influence the management of KCSE examination irregularities in Nairobi County, Kenya. The specific aspects investigated in this variable included the school rules & regulations, policy, legislations, ACT, penalties, directives and guidelines. The purpose was to understand how the extent to which these aspects were helpful in addressing KCSE examination irregularities in Nairobi County. The sentiments for this variable were measured using 5-level Likert scale whose summation helped to come up with a measure for a latent variable. The 5-level Likert scale were, VSE (1) which represented to a very small extent, SE (2) to a small extent, ME (3) to a moderate extent, LE (4) to large extent, and VLE (5) to a very large extent. The findings were summarized and presented in Table 4.6.

Table 4. 6***Regulatory framework and management of KCSE examination irregularities***

Statements on regulatory framework (n = 66)	VSE(1)	SE(2)	ME(3)	LE(4)	VLE(5)	Mean	Std. Deviation	Factor loading
• Directives from the Cabinet Secretary on handling of national examinations	11(16.7%)	8(12.1%)	12(18.2%)	26(39.4%)	9(13.6%)	3.21	1.307	.586
• Policy and guidelines from Kenya National Examination Council	20(30.3%)	12(18.2%)	11(16.7%)	17(25.8%)	6(9.1%)	2.65	1.387	.761
• Legislations by the Ministry of Education	17(25.8%)	16(24.2%)	15(22.7%)	13(19.7%)	5(7.6%)	2.59	1.277	.772

Statements on regulatory framework (n = 66)	VSE(1)	SE(2)	ME(3)	LE(4)	VLE(5)	Mean	Std. Deviation	Factor loading
• School rules and regulations	22(33.3%)	14(21.2%)	12(18.2%)	13(19.7%)	5(7.6%)	2.47	1.338	.925
• Penalties imposed on culprits for examination irregularities	25(37.9%)	12(18.2%)	9(13.6%)	14(21.2%)	6(9.1%)	2.45	1.416	.591
• The Education ACT	24(36.4%)	12(18.2%)	21(31.8%)	6(9.1%)	3(4.5%)	2.27	1.184	.633

Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy = .714

According to the results in Table 4.6, all the sentiments regarding regulatory framework for supporting management of KCSE examination irregularities loaded very well. They have an Eigen value that is above 0.45. The KMO is .714; which further confirms that all the suggested statements were adequate in helping to address KCSE examination irregularities. More than half of the respondents indicated three aspects which were significant in supporting the effective management of KCSE examination irregularities to a large extent. The three aspects were, the directives from the Cabinet Secretary on handling of national examinations (mean =3.21), policy and guidelines from Kenya National Examination Council (mean =2.65), and legislations by the Ministry of Education (mean =2.59). These show the value of directives, policy and legislations in the management of KCSE examination irregularities. Current findings differ with the reports of Oyieko (2017) who reported that despite the awareness on the various regulations and laws imposed by education and examination governing bodies among students and even teaching staff, they were less effective in admitting exam regulation since laws were available to be broken, as indicated by the high level of awareness of existing legislation despite the high occurrence of exam malpractices in Bondo sub-county. Technology was preferred to incorporate comprehensive formal legislation in eradicating exam cheating issues.

However, the weight of education ACT in addressing the KCSE examination irregularities was to a very low extent; 24(36.4%). Other regulatory aspects which regarded as playing a low role in addressing the KCSE examination irregularities were school rules and regulations, and penalties imposed on culprits for examination irregularities. The mean values in each case as indicated in table 4.6 show that the existing regulatory framework

was playing a moderate role in addressing KCSE examination irregularities. Some aspects of the findings seem to agree with the reiterations of Kemunto (2016) who found that KNEC policies and school rules and regulations did not significantly affect the curbing and managing of secondary school examination irregularities. Instead, comprehensive framework focusing on creating awareness, training, addressing technological aiding mechanisms such as CCTV, syllabus reviewing and employing guidance and counselling were deemed to be featured in policies are strong mitigation mechanisms.

When contacted for comments on the same, the County Director of Education reiterated the need for strong policy from KNEC regarding handling examinations by those who set the examination, supervisors, invigilators, principals and security officers. The students' presidents pointed out a need for code of ethics with clear consequences where there is lack of adherence. Principals number 6 emphasized on integrity of all people involved in handling examination from setting to marking. Oyieko (2017) and Mutinda (2017) somehow agreed with these statements where they stressed on the need for training for stakeholders involved in examination invigilation and posing of heavy penalty for non-adhering candidates and invigilators. This acknowledges the place of embracing comprehensive policies that address the issue of examination malpractices holistically

ranging from management facet of it, mitigation mechanisms, causes and penalties upon infringement of the stipulated policies.

4.7 Availability of Learning Resources and Management of KCSE Examination Irregularities

The second objective in this study was on the availability of learning resources. The researcher wanted to understand the extent to which learning resources impacted the management of KCSE irregularities in Nairobi County. This variable focused on aspects such as availability, adequacy, and variety of learning resources. The learning resources was measured as a latent variable; meaning, several learning resources were provided to measure it. This was because it was difficult to measure learning resources in a single aspect, hence, various aspects of learning resources were posed to respondents who were required to indicate their responses in a 5-level Likert scale where, VSE (1) represented to a very small extent, SE (2) to a small extent, ME (3) to a moderate extent, LE (4) to large extent, and VLE (5) to a very large extent. A summation of the results was done and presented in descending order of the mean values as shown in Table 4.7.

Table 4. 7***Descriptive results on availability of learning resources***

Statements on availability of learning resources (N = 66)	VSE(1)	SE(2)	ME(3)	LE(4)	VLE(5)	Mean	Std. Deviation	Factor loading
a) Laboratory equipment	10(15.2%)	8(12.1%)	17(25.8%)	22(33.3%)	9(13.6%)	3.18	1.264	.816
b) Reagents	14(21.2%)	15(22.7%)	8(12.1%)	20(30.3%)	9(13.6%)	2.92	1.396	.777
c) Instructional /teaching aids	14(21.2%)	16(24.2%)	7(10.6%)	22(33.3%)	7(10.6%)	2.88	1.365	.848
d) Text books	15(22.7%)	12(18.2%)	14(21.2%)	17(25.8%)	8(12.1%)	2.86	1.357	.777
e) Computer lab	12(18.2%)	13(19.7%)	24(36.4%)	16(24.2%)	1(1.5%)	2.71	1.078	.661
f) School library	19(28.8%)	10(15.2%)	14(21.2%)	20(30.3%)	3(4.5%)	2.67	1.305	.659
g) Technological resources e.g. computer hardware and software	15(22.7%)	17(25.8%)	20(30.3%)	8(12.1%)	6(9.1%)	2.59	1.228	.671
h) Land for agriculture	16(24.2%)	16(24.2%)	21(31.8%)	10(15.2%)	3(4.5%)	2.52	1.153	.701
i) Workshops	16(24.2%)	17(25.8%)	24(36.4%)	7(10.6%)	2(3.0%)	2.42	1.068	.580
Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy = .844								

The findings in Table 4.7 are showing that all the aspects regarding availability of learning resources for supporting management of KCSE examination irregularities loaded very well. They indicated a high Eigen value that is above 0.45. The KMO is .844; which further confirms that all the suggested resources were adequate in helping to address KCSE examination irregularities. The first four learning resources which had the highest frequencies on 'large extent' were laboratory equipment 22(33.3%), reagents 20(30.3%), instructional /teaching aids 22(33.3%), and text books 17(25.8%). Another critical learning resource was a school library to which majority of respondents 20(30.3%) said that it affect the management of KCSE examination irregularities to a large extent. These are consistent with the allegations exposed by Getange et al. (2015) who found that inadequacy of spacious school learning facilities and resources outstretched KCSE examination irregularities among learners. Naliaka et al. (2015) also stressed the need for adequately equipped schools in order to prevent borrowing of items and equipment during examination time.

The students' presidents also agreed and emphasized on the need to ensure school laboratory are adequately equipped with facilities and reagents. One student leader said that the laboratory reagents should be sufficient for students to do practices during other times apart from the scheduled sessions. The student leader number three said, "*The government should not only supply text books but should provide revision books.*" The students' leaders further noted the need for adequate revision materials and equipping of the school libraries. Some of the measures taken by government regarding learning resources include supplying free and adequate books reviewing of the syllabus and has

further reduced the teachers teaching workload by employing more teachers in high schools. This was also appreciated in the findings of Naliaka et al. (2016) whose study found that sharing of equipment and examination facilities during examination time was among the most common practice which contributed to candidates cheating through giraffing. Seconding, Getange et al. (2015) also underscored the relevancy of having adequate information and learning materials for adequate learner's revision, preparation and perusal so as to allay lack of confidence built upon by inadequate preparation. Common practices addressed towards curbing the trend were government involvement in supplying free educational books and professional development of teachers so that they deliver adequately to the candidates.

The learning resources that had the lowest mean were technological resources e.g. computer hardware and software (mean = 2.59), land for agriculture (mean = 2.52), and workshops (mean = 2.42). Most schools lack equipment to support technical subjects, hence, responses gotten regarding these learning resources was low. Regarding this, the principals of secondary schools urged the government to fund the establishment of laboratories, and cushion the schools on purchasing of re-agents and other important facilities such as computers, microscopes, among others. Wambugu (2015) also stressed on the need for the government to carry out inspection so as to check adequacy of reagents, facilities and microscopes for use during examinations and take appropriate action plans for schools which are not fully equipped. Policy implications directing failure to register a non-equipped school for national examinations was deemed a practical endeavor for eliminating cheating and student copying when sharing examination materials.

4.8 The School Culture and KCSE examination irregularities

The school culture was the third independent variable which was measured using aspects such as core values, dressing codes, school rules, school policies, special programs, rewards systems, school traditions, and leadership practices. The aim was to understand how components of a school culture would contribute in addressing KCSE examination irregularities in Nairobi County. Various aspects of a school culture were posed to respondents who were required to indicate their responses in a 5-level Likert scale where, VSE (1) represented to a very small extent, SE (2) to a small extent, ME (3) to a moderate extent, LE (4) to large extent, and VLE (5) to a very large extent. A summation of the results was done and presented in descending order of the mean values as shown in Table 4.8.

Table 4. 8***Descriptive results on school culture in addressing KCSE examination irregularities***

Statements on school culture in addressing KCSE examination irregularities (N = 66)	VSE(1)	SE(2)	ME(3)	LE(4)	VLE(5)	Mean	Std. Deviation	Factor loading
a) School rules	20(30.3%)	18(27.3%)	9(13.6%)	12(18.2%)	7(10.6%)	2.52	1.373	.842
b) School policies	21(31.8%)	11(16.7%)	18(27.3%)	12(18.2%)	4(6.1%)	2.50	1.280	.788
c) School core values	24(36.4%)	11(16.7%)	11(16.7%)	18(27.3%)	2(3.0%)	2.44	1.314	.775
d) School traditions	22(33.3%)	16(24.2%)	14(21.2%)	8(12.1%)	6(9.1%)	2.39	1.311	.841
e) Special programs in the school	23(34.8%)	24(36.4%)	4(6.1%)	10(15.2%)	5(7.6%)	2.24	1.290	.731
f) Leadership practices in the school	28(42.4%)	7(10.6%)	21(31.8%)	8(12.1%)	2(3.0%)	2.23	1.213	.713
g) Rewards systems and programs in the school	23(34.8%)	13(19.7%)	25(37.9%)	3(4.5%)	2(3.0%)	2.21	1.074	.843
h) Dressing codes	30(45.5%)	13(19.7%)	15(22.7%)	4(6.1%)	4(6.1%)	2.08	1.219	.726

Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy = .870

The findings in Table 4.8 are showing that all the aspects the school culture for supporting management of KCSE examination irregularities loaded very well. They indicated a high Eigen value that is above 0.45. The KMO is .870; which further confirms that all the suggested aspects of a school culture were adequate in helping to address KCSE examination irregularities. Although the aspects of a school culture loaded very well, only two were indicated by the majority of principals as effective in addressing KCSE examination irregularities. These were; school rules (mean = 2.52) and school policies (mean = 2.50). Nabiswa et al. (2017) findings were in congruence with the reiterated findings which underpinned that organizational cultural aspects particularly which defined the school direction and legislation were key in addressing learner's deviant behavior.

The aspects of a culture that had deemed to having lowest impact towards addressing examination malpractices were leadership practices in the school (mean = 2.23), rewards systems and programs in the school (mean = 2.21), and dressing codes (mean = 2.08). The results are showing that, although the school culture is critical in addressing KCSE examination malpractices, there was weak manifestation of cultural aspects that discourages examination malpractices in secondary schools in Nairobi County. This concurs with the findings reported by Nabiswa et al. (2017) which argued that secondary school culture practices had little moderation on the learners' adherence to ethics, their discipline and academic performance. School culture was found to be a dismal moderator for learners behavior based on the fact that culture was versed by numerous characteristic which most of them did not influence student ability to cheat in exams.

Information gathered from principals through an open-ended questions highlighted schools rules and policies in institutionalizing best practices. The students' presidents said that rules on sitting should be embraced all the times whenever students are doing examinations. Student leader number one said that when learners are socialized to the culture of not cheating examination, it will get deeply entrenched in normal life and hence, one will get used. This mean that school culture and values inculcated in learners in the schools can play a significant role in addressing examination irregularities. In agreement were the findings by Mwonga (2019) which noted that adherence to examination rules and regulations had some potency of regulating examination malpractices. Specific rules and comprehensive framework addressing sitting arrangement and newly developing mechanisms of cheating among students were required to be adopted to combat the illicit behaviours since regulation and legislation had positive impact in eradicating examination inappropriateness.

4.9 Human Resources and KCSE Examination Irregularities

The fourth objective determine how the human resources influence the management of KCSE examination irregularities in Nairobi County, Kenya. It was measured using aspects such as number of various officers involved in teaching, handling the examinations; their qualification, professional efficiencies, preparedness, training and supervision. The aim was to understand how various aspects of a human resources would contribute in addressing KCSE examination irregularities in Nairobi County. Various aspects on human resources were posed to respondents who were required to indicate their responses in a 5-level Likert scale where, VSE (1) represented to a very small extent, SE (2) to a small

extent, ME (3) to a moderate extent, LE (4) to large extent, and VLE (5) to a very large extent. A summation of the results was done and presented in descending order of the mean values as shown in Table 4.8.

Table 4. 9***Descriptive results on human resources in addressing KCSE examination irregularities***

Statements on human resources in addressing KCSE examination irregularities (N = 66)	VSE(1)	SE(2)	ME(3)	LE(4)	VLE(5)	Mean	Std. Deviation	Factor loading
a) Number of teaching staff in the school	7(10.6%)	8(12.1%)	22(33.3%)	24(36.4%)	5(7.6%)	3.18	1.094	.542
b) Professional efficiencies of teachers	11(16.7%)	17(25.8%)	10(15.2%)	23(34.8%)	5(7.6%)	2.91	1.262	.559
c) Preparedness of teachers	16(24.2%)	10(15.2%)	14(21.2%)	24(36.4%)	2(3.0%)	2.79	1.259	.584
d) Training of the examination invigilators	15(24.2%)	14(21.2%)	23(34.8%)	11(16.7%)	2(3.0%)	2.53	1.126	.465
e) Number of KNEC officers during examination administration	15(22.7%)	23(34.8%)	11(16.7%)	16(24.2%)	1(1.5%)	2.47	1.140	.625
f) Supervisory role of school principal	22(33.3%)	16(24.2%)	13(19.7%)	12(18.2%)	3(4.5%)	2.36	1.248	.486
g) Number of laboratory technicians	23(34.8%)	16(24.2%)	11(16.7%)	13(19.7%)	3(4.5%)	2.35	1.271	.670
h) Qualification of teachers	24(36.4%)	12(18.2%)	19(28.8%)	10(15.2%)	1(1.5%)	2.27	1.158	.437
i) Number of security officers during examination administration	26(39.4%)	14(21.2%)	14(21.2%)	10(15.2%)	2(3.0%)	2.21	1.209	.480
j) Number of support staff in the school	23(1.9%)	19(7.5%)	14(24.5%)	8(34%)	2(32.1%)	2.20	1.140	.424
k) Staffing in the department of guidance and counselling in the school	26(39.4%)	19(28.8%)	11(16.7%)	8(12.1%)	2(3.0%)	2.11	1.152	.323
Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy = .870								

The findings in Table 4.9 are showing that some of the human resources aspects for supporting management of KCSE examination irregularities loaded very well while others have a low Eigen value that is less than 0.45. The aspects with Eigen value lower than 0.45 were qualification of teachers, number of security officers during examination administration, number of support staff in the school, and staffing in the department of guidance and counselling in the school. However, the overall KMO is 0.812; which confirms that all the suggested aspects of human resources were adequate in helping to address KCSE examination irregularities. This shows that although some aspects had low loading Eigen factor, they were jointly relevant together with the other aspects of human resources in addressing KCSE examination irregularities. Mwonga (2019) also appreciated the need for having qualified teaching staff for ensuring adequate preparation of candidates, a factor which instilled confidence among learners hence reduced the rate of academic dishonesty. Adequate invigilators, qualified guidance and counselling staff, supervisors and adequate security personnel, were also found very instrumental in curbing academic dishonesty matters (Nyamoita & Otieno, 2016).

Out of the eleven suggested aspects of human resources, only four had been indicated by more than half of the respondents. These were; the number of teaching staff in the school, (mean = 3.18) professional efficiencies of teachers (mean = 2.91), preparedness of teachers (mean = 2.79), and training of the examination invigilators (mean = 2.53). The less effective aspect of human resources in addressing management of KCSE examination irregularities were the number of security officers during examination administration (mean = 2.21), number of support staff in the school (mean = 2.20), and staffing in the department of guidance and counselling in the school (mean = 2.11). The findings here are showing that

although human-based factors play a role in addressing examination irregularities, the weight of the role is much. Probably, it is because, the human factor are deeply involved in perpetrating examination malpractices hence their effectiveness in providing solutions is diminished. Another possible explanation given by County Director of Education was due to the fact that the government gave a directive barring presence of teachers in the school when examinations are in progress. Student leader number one said that the government should ensure that there is no direct contact between the non-teaching staff and students when examinations are on-going.

There was a general agreement from students' leaders that the movement of non-teaching staff round the school should be restricted and that they should not be allowed to get into the school compound with their mobile phones. Mutinda (2017) did not concur exclusively with the current findings. Mutinda argued that school stakeholders perpetrated examination malpractices but rather, addressed both sides of a coin by eliciting the positive impact of having the school principle, teachers and permitted non-teaching staff within the school premises during examination time. However, findings partially agree with the reiterations of Adeniran et al. (2020) whose findings directed that school stakeholders who proved not to uphold integrity to the highest level made candidates conceit through lending them their mobile phones. Mobile phone utilization in examination premises was banned for both supervisors, invigilators and the candidates themselves.

4.10 Relationship between Institutional-based Factors and Management of KCSE Examination Irregularities

The main purpose of the study was to assess the institutional based factors that influence the management of KCSE examination irregularities in Nairobi County, in Kenya. It was, therefore, necessary to first analyze the association between the institutional based factors and the management of KCSE examination irregularities, hence, the use of inferential analysis. In the first instance, diagnostic tests were conducted to inform the appropriate statistical tests. This involved checking assumptions such as normality, linearity, autocorrelation, multicellularity and heteroscedasticity tests. The results of the tests are presented in section 4.10.1 and specifically in Tables 4.10, and 4.11, and in Figures 4.1, 4.2, 4.3, and 4.4.

4.10.1 Diagnostic Tests

The data of the study was first checked whether it was normally distributed. The statistical methods of checking normality of the data using both Kolmogorov-Smirnov and Shapiro-Wilk was adopted. The same was ascertained using graphical method where histograms, Q-Q plots and box plots were used. The results of the P-values based on the Kolmogorov-Smirnov and Shapiro-Wilk tests are presented in Table 4.10.

Table 4. 10***Tests of normality on main variables of the study***

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Y	.100	66	.098	.955	66	.058
X1	.091	66	.200*	.957	66	.163
X2	.122	66	.087	.946	66	.616
X3	.105	66	.098	.961	66	.067
X4	.107	66	.077	.955	66	.061

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

According to the results in Table 4.10, it is clear that the P-value of Shapiro-Wilk for each study variable is insignificant, (Y= .058; X1 = .163; X2 = .616; X3 = .067; and X4 = .061; $P > 0.05$). This shows that the data was drawn from a normally distributed target population. The findings were further confirmed using the graphical methods, especially for the dependent variable. The results are presented in Figure 4.1, 4.2 and 4.3, respectively.

Figure 4. 1

Histograms showing normality of data on management of KCSE examination irregularities

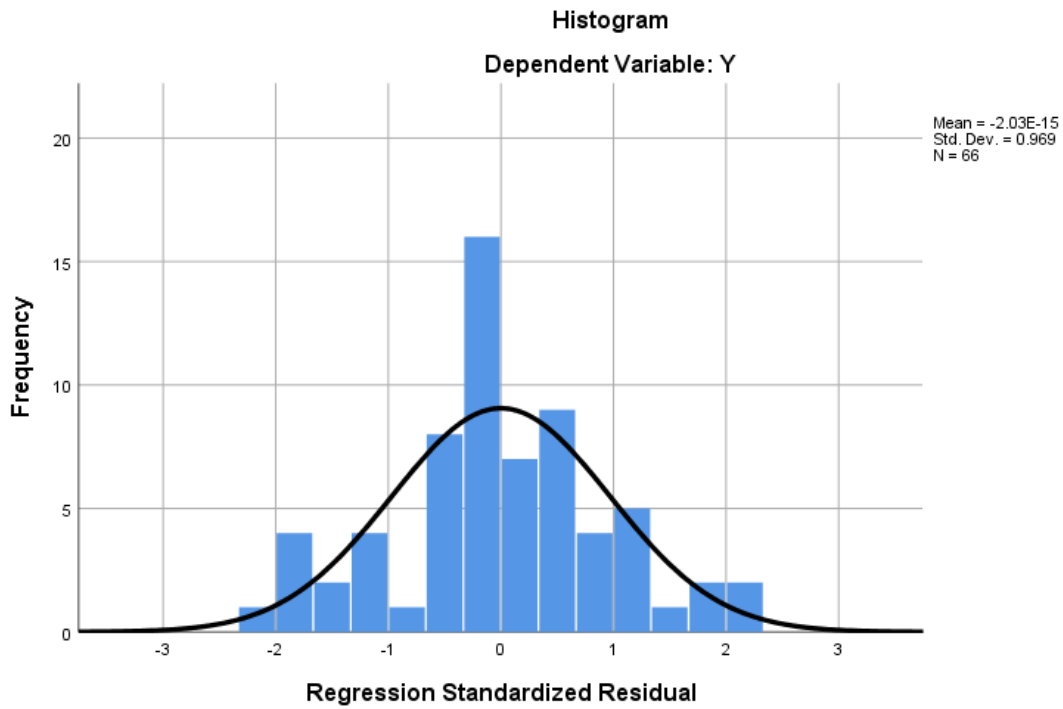
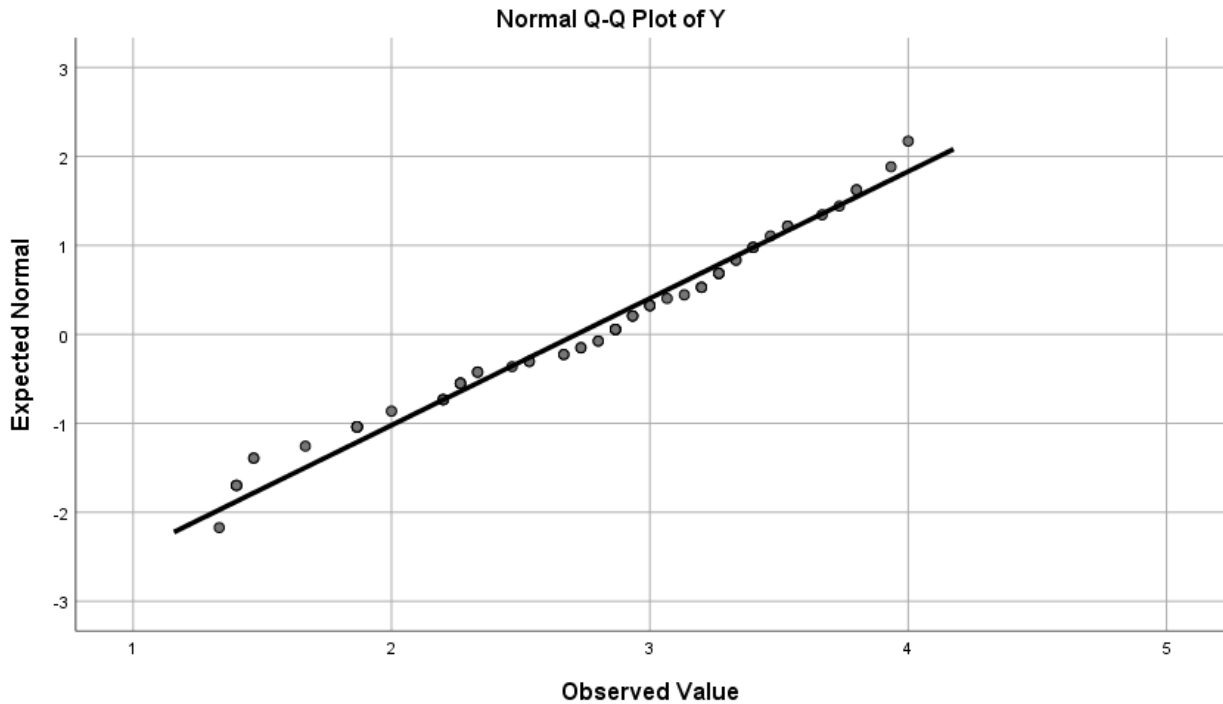


Figure 4.1 confirms that data was normally distributed. The same is demonstrated using the standard Q-Q plots shown in Figure 4.2.

Figure 4. 2

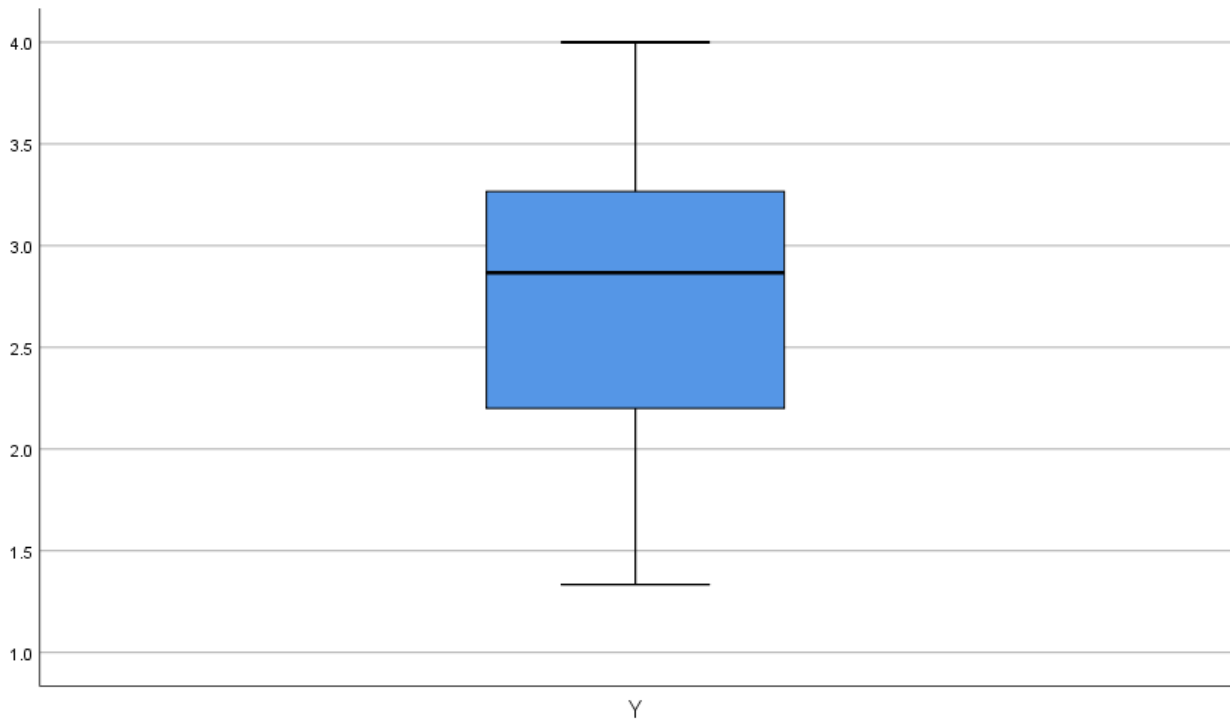
Q-Q showing normality of data on management of KCSE examination irregularities



The results of the Q-Q plot in Figure 4.2 shows the data points that are closely fitted along the line of the best fit. Only few points that are not fitted well, hence, a normal distribution condition. Since most data points are along the line of the best fit, the linearity of the data is also evident. A box plot was further generated to counter-check whether there was any violation of the normality conditions. The box plot output is shown in Figure 4.3.

Figure 4. 3

Box plot on management of KCSE examination irregularities



The whiskers in the box plots in Figure 4.3 are showing a slight inclination, although there is no alarming skewedness in the data. This further confirmed that the data was drawn from a normally distributed population.

The above findings have demonstrated the normality and linearity of the data. Since correlation and multiple linear regression were most suitable inferential analysis, it was necessary to confirm whether there was violation on the other conditions that included autocorrelation, multicollinearity and heteroscedasticity. The autocorrelation and multicollinearity results are presented in Table 4.11.

Table 4. 11***Autocorrelation and multicollinearity results on the predictor variables***

Variables	R square change	Durbin-Watson	VIF
X1	.295	2.040	1.000
X2	.406	1.829	1.000
X3	.411	1.541	1.138
X4	.468	1.617	1.120

Table 4.11 shows the results on autocorrelation and multicollinearity.

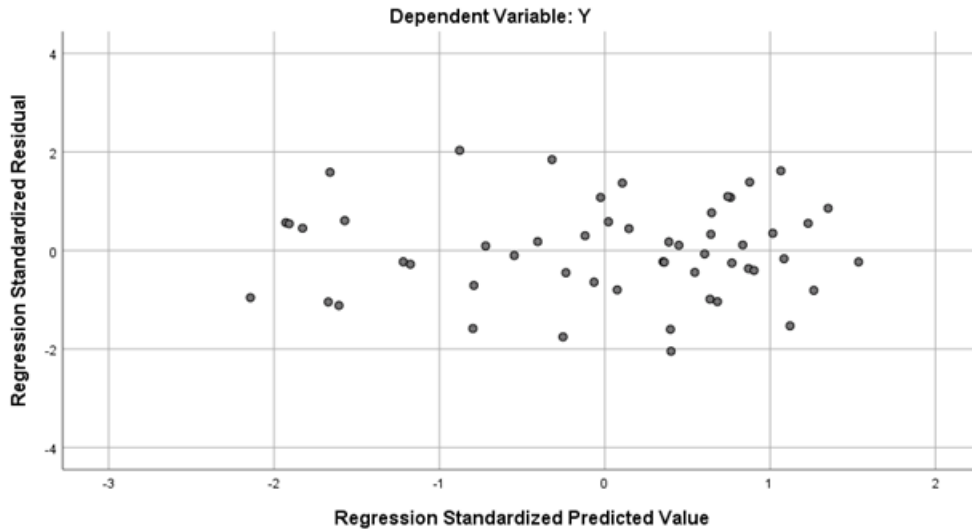
The Durbin-Watson value was used to check the autocorrelation condition. According to Waithima (2020), the Durbin-Watson value should be around two (Singh, 2007). The results in Table 4.11 show Durbin-Watson values where $X_1 = 2.040$; $X_2 = 1.829$; $X_3 = 1.541$; and $X_4 = 1.617$. This indicates that there was no autocorrelation problem in the predictor variables, hence, the data was fit to be used in the analysis.

For multicollinearity test, the Variance Inflation Factor (VIF) among explanatory variables was checked in each case to confirm the adoption of multiple linear regression in the analysis. Whenever, multicollinearity among predictor variables is present, it becomes very difficult to estimate the regression coefficients (Waithima, 2020). The results in Table 4.11 show that all the independent variables had no multicollinearity problem as indicated by a VIF values. The results are showing that the VIF value is more than 0.5 and less than 5 for each predictor variable; hence, there was no multicollinearity problem detected in all the predictor variables of this study.

The heteroscedasticity test was ascertained using a scatter graph where the standardized predicted residuals and mean standardized residuals were plotted as shown in Figure 4.4.

Figure 4. 4

The residual and standardized predicted value of outcome variable



Based on the results of the scatter graph in Figure 4.4, the distance between the points as one move from left to right has no significant variation. The scatter points are largely defused, with no patterns. This means that there is no heteroscedasticity problem in the data. This confirms that there was no heteroscedasticity problem; hence, the data was normally distributed.

The above results support the adoption of parametric inferential statistics in testing the hypothesis and overall purpose of this study. The results of each hypothesis tested is presented in the section that follows.

4.10.2 Testing of Research Hypotheses

This study used a Pearson correlation analysis in testing the relationship between the institutional based factors and management of KCSE examination irregularities in Nairobi County in Kenya. The results are shown in Table 4.12.

4.10.2.1 Correlation between the institutional based factors and management of KCSE examination irregularities

In testing the null hypotheses, a Pearson correlation analysis was conducted and results presented in Table 4.12. The study used 0.05 as the alpha level of significance for correlation coefficients. The first null hypothesis ($H0_1$) stated, the regulatory framework does not influence the management of KCSE examination irregularities in Nairobi County, Kenya. The Pearson correlation results are presented in Table 4.12.

Table 4. 12

Correlations analysis on dependent and independent variables

		X1	X2	X3	X4	Y
X1	Pearson Correlation	1				
	Sig. (2-tailed)					
	N	66				
X2	Pearson Correlation	.474**				
	Sig. (2-tailed)	.000				
	N	66	66			
X3	Pearson Correlation	.591**	.735**			
	Sig. (2-tailed)	.000	.000			
	N	66	66	66		
X4	Pearson Correlation	.488**	.753**	.871**		
	Sig. (2-tailed)	.000	.000	.000		
	N	66	66	66	66	
Y	Pearson Correlation	.544**	.637**	.641**	.684**	
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	66	66	66	66	66

** . Correlation is significant at the 0.01 level (2-tailed).

The results in the correlation analysis Table 4.12 show a P value of X_1 and corresponding coefficient, where, $r = .544^{**}$. The P value is less than 0.05. This indicates a statistically significant positive relationship between the regulatory framework and management of KCSE examination irregularities, ($r = .544$, $p < 0.05$), hence, the study rejected the null hypothesis and concluded that there was a statistically significant positive relationship between the regulatory framework and management of KCSE examination irregularities in Nairobi county, Kenya. The positive association implies that an increase in the regulatory framework, was causing an increased impact on the management of KCSE examination irregularities in Nairobi County, Kenya. These concur with the findings of Shibo et al. (2017) who found out that school governance, rules, regulations and integrity policies enforced in the school possessed positive significant influence in curbing examination malpractices. Keter (2021) also found that the tighter the policies in university institutions, the lesser the examination malpractices hence the significance positive relation existed between university examination policies and learners examination integrity.

The second null hypothesis ($H0_2$) stated that the availability of learning resources does not influence the management of KCSE examination irregularities in Nairobi County. The results in the correlation analysis Table 4.12 show a P value for X_2 and corresponding coefficient, where, $r = .637^{**}$. The P value is less than 0.05. This indicates a statistically significant positive relationship between the availability of learning resources and management of KCSE examination irregularities, ($r = .637$, $p < 0.05$), hence, the study rejected the null hypothesis and concluded that there was a statistically significant positive relationship between the availability of learning resources and management of KCSE examination irregularities in Nairobi county, Kenya. The positive association implies that an

increase in the availability of learning resources, was causing an increased impact on the management of KCSE examination irregularities in Nairobi County, Kenya.

The results have provided a clear link between the availability of learning resources and management of KCSE examination irregularities. This implies that learners when learners have access to learning resources such as laboratories, workshops, library, work rooms and classes, they will prepare adequately; hence, minimize temptations to engage in examination irregularities. This underscores the significant role played by learning resources in the management of examination malpractices. Findings concur with the opinions of Getange et al. (2015) who found that inadequacy of laboratory equipment, sharing of chemical reagents, specimens and relevant charts like periodic tables lead to increased examination malpractices among form four candidates hence had some significant negative influences.

The third null hypothesis ($H0_3$) predicted that school culture does not influence the management of KCSE examination irregularities in Nairobi County. The results in the correlation analysis Table 4.12 show a P value for X_3 and corresponding coefficient, where, $r = .641^{**}$. The P value is less than 0.05. This indicates a statistically significant positive relationship between the school culture and management of KCSE examination irregularities, ($r = .641, p < 0.05$), hence, the study rejected the null hypothesis and concluded that there was a statistically significant positive relationship between the school culture and management of KCSE examination irregularities in Nairobi county, Kenya. The positive association implies that an increase in the school culture, was causing an increased impact on the management of KCSE examination irregularities in Nairobi County, Kenya.

The results have provided a clear link between the school culture and management of KCSE examination irregularities. This implies that the culture of not cheating in examinations can be nurtured in the school. A deeply rooted cultural practice of working hard and not depending on short cuts will hence get institutionalized and the learners will be socialized and enculturated appropriately. The results have termed this as a very significant strategy towards addressing examination irregularities. These findings agree and build upon the social learning theory adopted in the study by elucidating how illicit behaviour of examination cheating among candidates may be exterminated through cultivating a positive culture of hardworking and obeying of stipulated rules and regulations. This is because social learning theory evidences the strengths of investing in building a memorable culture of academic honesty by punishing present experiences so that individual learn from existed memories. However, the findings disagree with those of Ramberg and Modin (2019) who found out that school leadership, rules and regulations and moral standards in a high school possessed negative influences in student undertaking in examination cheating.

The third null hypothesis (H_{04}) predicted that human resources do not influence the management of KCSE examination irregularities in Nairobi County. The results in the correlation analysis Table 4.12 show a P value for X_4 and corresponding coefficient, where, $r = .684^{**}$. The P value is less than 0.05. This indicates a statistically significant positive relationship between the human resources and management of KCSE examination irregularities, ($r = .684$, $p < 0.05$), hence, the study rejected the null hypothesis and concluded that there was a statistically significant positive relationship between human resources and management of KCSE examination irregularities in Nairobi county, Kenya. The positive association implies that an increase in human resources, was causing an increased impact on the management of KCSE examination irregularities in Nairobi County, Kenya.

The results have underscored the significant role of human resources in the management of KCSE examination irregularities. This implies that the human resources ranging from teachers, non-teaching staff, invigilators, supervisors, security officers, and national examination council officers are all very significant in the management of KCSE examination irregularities. Their numbers, level of training, remuneration, discipline and supervision contribute immensely in the management of KCSE examination irregularities. Findings seem to concur with the directives of Adow et al. (2015) who found out that the more the examination invigilators and supervisors, the lower the rate of examination cheating among candidates. Hence adequate supervision possessed a significant positive relationship on curbing examination malpractices.

4.11 Overall Model on Institutional-based Factors and Management of KCSE Examination Irregularities

This study aimed to assess the institutional-based factors that influence the management of KCSE examination irregularities in Nairobi County, Kenya. The preceding section has established a statistically significant relationship between each institutional-based factors and the management of KCSE examination irregularities. In this section, the influence of the four institutional-based factors in a combined model is assessed and results are presented and discussed, accordingly. To test the effect of the combined institutional-based factors, a multiple linear regression analysis was conducted. The dependent variable (the management of KCSE examination irregularities) was, therefore, regressed on the four independent variables (regulatory framework, availability of learning resources, school culture and human resources) in a combined model to determine the prediction capacity of the model.

In the multiple linear regression model, the R-Square value (the coefficient of determination) was used to determine the proportion of the variance in the management of KCSE examination irregularities that was accounted for by the four institutional-based factors in secondary schools in Nairobi County in Kenya. The R-value statistic helped to demonstrate the existence of a relationship between the dependent and independent variables, and further determined the strength of the same. The statistics in the ANOVA table were used to indicate model validity on whether the model was statistically significant, and good fit of the data. The level of significance used was, $p = \leq 0.05$. The regression coefficients values were used to show the lowest beta value of each institutional-based factors when all of them are combined in one model. The regression weights were used to show the change in Y relative to a one unit change in the respective independent variable while holding all other independent variables were held constant in the combined model. The results of a multiple linear regression analysis are presented in Table 4.13, 4.14, and 4.15.

Table 4. 13

Model summary results on the institutional-based factors

Mod el	R	R Square	Adjus t ed R Square	Change Statistics				Durbin- Watson	
				R Square Change	F Change	df1	df2		Sig. F Change
1	.740 ^a	.547	.518	.547	18.433	4	61	.000	1.860

a. Predictors: (Constant), X4, X1, X2, X3

b. Dependent Variable: Y

The results in Table 4.13 show that the three predictors, namely regulatory framework (X_1), availability of learning resources (X_2), school culture (X_3), and the human resources (X_4), when combined in a single model exhibit a statistically significant relationship with the dependent variable (the management of KCSE examination irregularities), (r value = 0.740),

which shows a very strong positive correlation. The findings further show that the three predictor variables jointly explain 54.7% of the variation on the management of KCSE examination irregularities in Nairobi County ($R^2 = .547$). This shows a significant impact of the institutional-based factors on the management of KCSE examination irregularities. The results also indicate that the management of KCSE examination irregularities in Nairobi County was largely attributed to the institutional-based factors which contributed 54.7%. The other 45.3% was due to other factors outside the school. The ANOVA results in Table 4.14 helped to determine the validity of the model.

Table 4. 14

ANOVA results on the institutional-based factors

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	17.489	4	4.372	18.433	.000 ^b
	Residual	14.469	61	.237		
	Total	31.958	65			

a. Dependent Variable: Y

b. Predictors: (Constant), X4, X1, X2, X3

The ANOVA Table 4.14 containing all the independent variables in a single model was found to be valid (a good fit of the data); where ($F_{(4,61)} = 18.433, P < .005$). This indicated that the four predictor variables (regulatory framework (X_1), availability of learning resources (X_2), school culture (X_3), and the human resources (X_4), produces a model that is statistically significant in determining the variations in the management of KCSE examination irregularities in Nairobi County. The regression coefficients values of each predictor variable in the combined model were computed and results presented in Table 4.15.

Table 4. 15***Regression weights results on the institutional-based factors***

Model		Unstandardized		Standardized	t	Sig.	Collinearity	
		Coefficients		Coefficients			Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.948	.227		4.168	.000		
	X1	.198	.083	.258	2.394	.020	.641	1.559
	X2	.167	.099	.229	1.685	.047	.402	2.486
	X3	-.047	.138	-.067	-.344	.532	.198	5.055
	X4	.363	.153	.444	2.371	.021	.211	4.730

a. Dependent Variable: Y

The results of the regression coefficients (see Table 4.15) for each predictor variable in the model shows a valid VIF value, that is, $1.000 < VIF > 5.000$. This indicates that there was no multicollinearity problem in the study variables in the regression model. The findings in Table 4.15 meant that the four school-based factors (regulatory framework, availability of learning resources, school culture, and the human resources) were a good combination in explaining the management of KCSE examination irregularities in Nairobi County. The results further show the unstandardized B-coefficient values X1 = .198; X2 = .167, X3 = -.047, and X4 = .363, respectively. All these values have a statistically significant constant value, that is, $P < 0.005$; except the school culture whose P value is .0532. The findings imply that although all the four institutional-based factors were statistically significant in determining the management of KCSE examination irregularities, it was regulatory framework, availability of learning resources and human resources that matter most. The school culture is important although its role is suppressed in the combined model.

The results confirmed the hypothesized model of this study, that is,

$Y = B_0 + B_1X_1 + B_2X_2 + B_3X_3 + B_4X_4 + e$, Where:

Y= management of KCSE examination irregularities

β_0 = Constant

$\beta_1, \beta_2, \beta_3$ = regression coefficient weights for x_1, x_2, x_3, x_4 as shown below:

X_1 = Regulatory framework

X_2 = Availability of learning resources

X_3 = School Culture

X_4 = Human resources

ε = is the estimated error of the model.

The resulting multiple regression model is:

The management of KCSE examination irregularities = $.948 + .198X_1 + .167X_2 + -.047X_3 + .363X_4 + e$

Therefore, the resulting multiple linear regression model shows that the management of KCSE examination irregularities = $(.198X_1$ regulatory framework) + $(.167X_2$ learning resources) + $(-.047X_3$ school culture) + $(.023X_4$ human resources) + 1.323). In this model, .948 is the value which is linked to the independent variables. The findings show that all the four institutional-based factors, when combined together, forms a model that is statistically significant in determining the management of KCSE examination irregularities in Nairobi County. Noticeably, the above combined model, it is the regulatory framework that is more significant (X_1), ($\beta_1 = .198, p=.020$), followed by the human resources (X_4), ($\beta_2 = .363, p =$

.021), and then learning resources (X_2), ($\beta_1 = .167$, $p=.047$); while the school culture (X_3) became insignificant, ($p < .005$).

The above findings imply that the management of KCSE examination irregularities in Nairobi County will improve by over 50% after addressing each of the institutional-based factors covered in this study. The findings have further guided on budgetary allocations and priorities and which should first focus on regulatory framework, human resources, learning resources and school culture in that order. Coming up with policies and regulations is therefore paramount and forms a strong foundation for addressing the examination irregularities. The human factor and learning resources have also been identified as very significant measures towards addressing examination irregularities. The human factor are involved in teaching, examination preparation, packaging, administration and marking; while, learning resources are critical in helping learners to prepare for examinations. These measures should be institutionalized to form a school culture and practices which play a role critical role in addressing examination irregularities in secondary schools in Kenya.

The findings reported in this study unveil potential aspects that ought to bring contributions and development of the adopted theories; the social learning and the social strain theories such as incorporating human, material and physical facilities as among the facets which aim to shape a culture and behaviour of individuals other than rules regulations and past observed experiences. The overall model complies with some of various insights stipulated in a range of previous studies featuring the construct of examination malpractices among secondary schools. Different observations from the previous studied such as Adow et al. (2015); Getange et al. (2015); and Wambugu (2015) have stressed on the need of a comprehensive

policy for attaining examination integrity and also deploying physical resources to secondary school so as to eliminate sharing of regents, periodic tables, microscopes and computers for practical subjects.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter provides a summarized highlights of the study findings, conclusions, recommendations, key implications, and points out areas of further research as informed by chapter four. The study was set out to assess the institutional based factors that influence the management of KCSE examination irregularities in Nairobi County, in Kenya. The specific scope constructs of interest were regulatory framework, availability of learning resources, school culture and human resources on the management of KCSE irregularities in Nairobi County, Kenya. The study was informed by two theories that is, socio-learning and the social strain theories.

5.2 Summary on Findings of the Study

Key summaries in the order of the study constructs was provided

5.2.1 Summary on Background Information of Respondents

The study confirmed a response rate of 83% from the sampled population where 55% comprised of male gender while the female were 45%. It was also noted that teachers had requisite qualifications where 62.7% of the teachers in secondary schools in Nairobi County had a bachelor of education degree while the rest, 35.8% had master's degree. Notwithstanding, teachers had sufficient teaching experience, represented by the majority 34.8% who had worked between 7-9 years.

5.2.2 Summary on Management of KCSE Examination Irregularities in Nairobi County

The study findings noted existence of continued examination irregularities in Nairobi county secondary schools despite the measures on directives and policies that were in place to promote academic integrity. The measures found adequate in addressing the noted KCSE examination irregularities in Nairobi County were adequate preparedness of learners, adequacy of learning and teaching resources and institutionalizing measures that discourage cheating in examinations. Other modalities that were found helpful in addressing KCSE examination irregularities were the adoption of e-invigilation through use of CCTVs and adopting biometric to deter impersonation, cancellation of examination results and banning of students from taking another examination for a specified period of time. Mitigation strategy outlined for effective management of KCSE examination irregularities noted the need for legislation and policy.

5.2.3 Summary on Regulatory Framework and Management of KCSE Examination Irregularities

The first objective of the study was to determine how regulatory framework influenced the management of KCSE examination irregularities in Nairobi County, Kenya. The study findings admitted the existence of directives, policy and guidelines from official KCSE examination regulation bodies although the regulatory framework for the management of KCSE examination irregularities was weak in comprehensiveness and in detailing the requirements for all examination stakeholders and code of ethics. The study established that directives from the Cabinet Secretary on handling of national examinations, policy and guidelines from Kenya National Examination Council and legislations by the Ministry of Education were very significant in handling KCSE examination irregularities. The findings also admitted that the existing regulatory framework was playing a moderate role in addressing KCSE examination irregularities hence a code of ethics with clear consequences

was needed for academic integrity. Despite the deficiencies of having an incomprehensive regulatory framework, it was clear that regulatory framework had a statistically significant relationship on the management of KCSE examination irregularities.

5.2.4 Summary on Availability of Learning Resources and Management of KCSE Examination Irregularities

For the second objective, the study ascertained that the availability, adequacy, and variety of learning resources in Nairobi County impacted the management of KCSE irregularities. The study noted that the schools were averagely equipped with laboratory equipment, instructional or teaching aids, text books, revision books and equipped school library which were very instrumental in the management of examination irregularities. The study further established that Nairobi County schools relied on the measures taken by government to address the inadequacy regarding learning resources which included the supplying free syllabus books, reviewing of the syllabus and employing more teachers in high schools. However, most secondary schools in Nairobi County lacked equipment such as re-agents, computers and microscopes to support technical subjects. This kind of inadequacy was a serious setback towards the management of KCSE examination irregularities in Nairobi County. The study found weighty deficiencies in learning resources and equipment despite their significance in managing KCSE examination irregularities in Nairobi County.

5.2.5 Summary on School Culture and KCSE examination irregularities

Regarding the objective on school culture in contributing to address KCSE examination irregularities in Nairobi County, only comprehensive school rules and policies were found effective. The results showed that, although the school culture was very critical in addressing

KCSE examination malpractices, there were weak manifestation of cultural aspects like leadership practices, rewards systems and programs and dressing codes that discourages examination malpractices in secondary schools in Nairobi. The study noted a critical role of cultivating a culture and values in learners since it contributed to the management of KCSE examination irregularities. Despite the noted deficient in developed school culture, it was reported to possess significance in the management of KCSE examination irregularities.

5.2.6 Summary on Human resources and KCSE examination irregularities

Human resource was the fourth objective and the study findings noted that the number of teaching staff in the school, professional efficiencies of teachers, preparedness of teachers and training of the examination invigilators human resource aspects significantly influenced the management of KCSE examination irregularities in Nairobi County secondary schools. However, it was observed that the human resources were deeply involved in perpetrating examination malpractices hence their effectiveness in providing solutions diminished. Solution towards addressing the predicament was a directive for barring presence of teacher, ensuring no direct contact between the non-teaching staff and students and restricting the getting into the school compound with mobile phones by non-teaching staff. It was clear that human resources were statistically significant in the management of KCSE examination irregularities despite the found weighty deficiencies in perpetrating examination malpractices.

5.2.7 The overall model and purpose of the study

The study's main aim was to assess the institutional-based factors that influence the management of KCSE examination irregularities in Nairobi County, Kenya. The study noted that all the institutional-based factors: regulatory framework (X_1), availability of learning

resources (X_2), school culture (X_3), and human resources (X_4) were individually and jointly significant in influencing the management of KCSE examination irregularities in Nairobi County in Kenya. This implied that the combination of the four institutional factors produced a model that was statistically significant in determining the variations in the management of KCSE examination irregularities in Nairobi County. However, when all the factors were combined in a model, it was the regulatory framework, availability of learning resources and human resources that appeared significant, effective and to matter most.

5.3 Conclusions

The study deduced the existence of continued examination irregularities in Nairobi county secondary schools. To address this shortfall, adequate preparedness of learners, ensuring adequacy of learning and teaching resources, institutionalizing measures that discourage cheating in examinations, adoption of e-invigilation through use of CCTVs and adopting biometric to deter impersonation, cancellation of examination results and banning of students from taking another examination for a specified period of time were needed to be place to mitigate the challenge. Effective management of KCSE examination irregularities in Nairobi County needed the presence of comprehensive legislation and policy.

Regulatory framework was found to have a statistically significant relationship on the management of KCSE examination irregularities in Nairobi County. However, although the study admitted the existence of directives, policy and guidelines from official KCSE examination regulation bodies, the regulatory framework for the management of KCSE examination irregularities was weak premised by incomprehensiveness in detailing the requirements for examination stakeholders and the expected code of conduct and ethics. This was a severe drawback that was hampering the management of KCSE examination

irregularities in Nairobi County. Instituting that regulatory framework was very significant in the management of KCSE examination irregularities, there was need to strengthen it.

On research objective two, there was moderate and average equipment of schools with laboratory equipment, instructional or teaching aids, text books, revision books and equipped school library which basically was out of reliance on government free book allocation. The study found learning resources weighty and statistical significant in managing KCSE examination irregularities in Nairobi County although re-agents, computers and microscopes to support technical subjects were missing. This kind of inadequacy in stock and facilities was a serious setback towards the management of KCSE examination irregularities in Nairobi County.

Results on school culture showed a statistically significant positive relationship in addressing KCSE examination malpractices. The study noted a critical role of cultivating culture and integrity values in learners since it contributed to the management of KCSE examination irregularities. However, deficiencies were noted in school culture depicted by the existence of moderate school rules and policies. The study concluded that cultivating a school culture and values in learners was critical to the management of KCSE examination irregularities.

Although human resources in Nairobi County were qualified and had good working experiences, this institutional-based factor, was weak leave alone the found statistically significance in the management of KCSE examination irregularities in Nairobi County. It was observed that the human resources were deeply involved in perpetrating examination malpractices due to insufficient capacity building hence their effectiveness in providing solutions diminished. On-going directive for barring presence of teachers, ensuring no direct

contact between the non-teaching staff and students and restricting the getting into the school compound with mobile phones was in practice.

On the study's overall purpose, all the institutional-based factors were individually and jointly significant in influencing the management of KCSE examination irregularities in Nairobi County in Kenya. However, in a model, regulatory framework, availability of learning resources and human resources appeared more significant and effective.

5.4 Recommendations

The study deduced the following recommendations

5.4.1 Recommendations based on the Findings of the Study

The study noted loopholes in the management of KCSE examination irregularities in Nairobi County in Kenya hence a need to strengthen the institutional-based factors and enact a comprehensive policy framework that address adoption of e-invigilation through use of CCTVs and adopting biometric to deter impersonation, adequate preparedness of learners, adequacy of learning and teaching resources, institutionalizing measures that discourage cheating in examinations, cancellation of examination results and banning of students from taking another examination for a specified period of time were needed to be place for managing KCSE examination irregularities.

The study recommends Nairobi County secondary schools to strengthen their policy framework to strengthen the management of KCSE examination irregularities. Operationalization of the comprehensive policy which incorporates remedial measures for examination stakeholders, detailing the expected code of conduct and ethics, availing adequate of learning resources, cultivating the school culture, adequately preparing

candidates before the KCSE examinations and developing human resources will go in a long way to improve the management of KCSE examination irregularities.

Nairobi County secondary schools should procure adequate reagents, computers, microscopes, lab equipment and revision materials to support technical subjects and adequate learner preparation. This implies that schools should commit sufficient funds for developing school infrastructure, facilities, equipment and learning resources which implore that the government through the ministry of education should dispense adequate funds and material resources. The ministry should further ensure that the government has taken the burden of supplying necessary facilities and supplementary educational materials or increasing capitation to secondary schools to enable schools buy the necessary resources.

The school culture and values in learners should also be strengthen for the management of KCSE examination irregularities. Adequate policies, school rules, regulations should be cushioned and developed to inculcate a culture of examination integrity and transparency. Institutionalization of the human factor who are involved in teaching, examination preparation, packaging, administration, marking and availing adequate learning resources are critical in helping learners to prepare for examinations.

The strategies on human resources adopted by Nairobi County secondary schools should be strengthened to prevent perpetrating examination malpractices through capacity building, motivation, fair remuneration, rewarding and restricting access to the school premises by unauthorized personnel. The ministry of education should organize periodic in-service training programs, workshops, seminars, and employing adequate invigilators and supervisors during examination teachers in secondary schools.

With regard to the overall goal of the study, all the institutional-based factors were individually and jointly significant in influencing the management of KCSE examination irregularities in Nairobi County in Kenya. Therefore, the study recommended Nairobi county secondary school principals to pay attention to the regulatory framework, availability of learning resources, school culture and human resources owing to their weight in influencing the management of KCSE examination irregularities in Nairobi County in Kenya. The modalities for implementing these institutional-based factors call for putting up a comprehensive regulatory and policy framework, developing operational policies, involvement of the ministry of education and government to partner and leverage financial ,human, financial and physical resources to public secondary schools.

5.4.2 Implications of the findings on theories, practices and policies

The multiple linear regression conducted in the study found that all institutional-based factors (regulatory framework, availability of learning resources, school culture and human resources) were significant in influencing the management of KCSE examination irregularities in Nairobi County in Kenya. These findings confirmed the main argument of the social learning and the social strain theories such as incorporating human, material and physical facilities as among the facets which aim to shape a culture and behaviour of individuals. The expected desired outcomes which was the management of KCSE examination irregularities in Nairobi County in Kenya was realized by the institutional-based factors regulatory framework, availability of learning resources, school culture and human resources.

The findings implicate the need to have comprehensive, workable and operationalized policies and regulatory frameworks on the managing of KCSE examination irregularities in

Nairobi County in Kenya. These policies ought to shape behaviour, the school culture hence impact examination integrity practices. Other implications are on the sourcing adequate and relevant information materials, facilities, equipment, learning resources which also imply the need for the ministry of education to undertake budgetary allocations through the government in order to realize the adequacy.

Most importantly, the findings imply a need for appropriate and comprehensive regulatory framework and policies aimed to develop a positive school culture which subsequent new comers can keep learning from it. Policies also will steer the re-address of human resources knowledge, competencies and skills through budgetary allocations to cater for training and development programs. The Ministry of Education will specifically re-address its policy on the supply adequate examination invigilators, supervisors and authorized personnel with the examination premises.

5.5 Recommendations for Further Studies

Further studies can be carried out as outlined below.

- a) This study focused on assessing the institutional based factors that influence the management of KCSE examination irregularities in Nairobi County, Kenya. A related study can be carried out in other counties in the country.
- b) The study was confined to the institutional-based factors (regulatory framework, availability of learning resources, school culture and human resources) that influenced the management of KCSE examination irregularities in Nairobi County. These factors when are in place will influence the management of KCSE examination irregularities in Nairobi County by approximately 50% after addressing each of the

institutional-based factors covered in this study. Another study may be carried out focusing on the social-economic factors, parental-based factors and learners-based factors so that there is 100% improvement in the management of KCSE examinations irregularities.

- c) This study was based in secondary schools, there is need to carry out a similar study in public primary schools.

REFERENCES

- Abubakar, A. S., & Adebayo, F. O. (2014). Using computer based test method for the conduct of examination in Nigeria: prospects, challenges and strategies. *Mediterranean Journal of Social Sciences*, 5(2), 47-55. <https://pdfs.semanticscholar.org/729f/8b40234e4941b87596e5991746c8437806bf.pdf>
- Adams, O., U., & Esther, O. D. (2011). *Curtailing examination fraud for improved quality assurance in the African examining system*. <https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.685.1083&rep=rep1&type=pdf>
- Adeyemi, T. O. (2010). Examination malpractices among secondary school students in Ondo State, Nigeria: Perceived causes and possible solutions. *Journal of Education Administration and Policy Studies*. 2(3), 48-55. <http://www.academicjournals.org/JEAPS>
- Advance-Africa.com (2016). 'Matiang'i rules' that curbed cheating in KCPE & KCSE exams. <https://www.advance-africa.com/matiangi-rules-that-curbed-theft-of-tests.html>
- Anzene, S. J., (2014). Trends in examination malpractice in Nigerian educational system and its effects on the socio-economic and political development of Nigeria. *Asian Journal of Humanities and Social Sciences (AJHSS)*, 2(3), 1-8. <https://ajhss.org/pdfs/Vol2Issue3/1.pdf>
- Aronson, B., Murphy, K. M., & Saultz, A., (2016). Under Pressure in Atlanta: School accountability and special education practices during the cheating scandal. *Teachers College Record* 118(14), 1-26. <https://eric.ed.gov/?id=EJ1110776>
- Asiabaka, I. P. (2008). The Need for Effective Facility Management in Schools in Nigeria. New York: *Science Journal* 1(2): 10-21. https://www.researchgate.net/publication/354073166_MAINTENANCE_OF_SCHOOL_FACILITIES
- Asinya, O. E. (2012). *Examination malpractice in Nigerian schools: An obstacle to progress in socialization in school environment: Causes, effects and remedy*. <https://globalacademicgroup.com/journals/resourcefulness/Examination%20Malpractice%20in%20Nigerian%20Schools%20An%20Obstacle%20to.pdf>
- Atabong, T. A., Okpala, M. C., Abondem, A. L. & Essombe1, C. E. (2010). Eliminating Examination Malpractice in Africa with Automated Test Taking, Marking and Result Printing. *Tropical Journal of Biomedical and Allied Sciences Research* 4(1) 452. <http://www.tibasr.net/publications.htm>
- Atasoy, R. (2020). The Relationship between School Principals' Leadership Styles, School Culture and Organizational Change. *International Journal of Progressive Education*, 16(5), 256-274. <https://files.eric.ed.gov/fulltext/EJ1273161.pdf>

- Babbie, E. (2014). *The practice of social research* (14th ed.). Wadsworth Cengage Learning.
- Bandura, A. (1997). *Self- efficacy: The exercise of control*. W.H. Freeman and Company.
<https://www.worldcat.org/title/self-efficacy-the-exercise-of-control/oclc/36074515>
- Barus, J. J., Marigat, S. K., & Njathi, S. N., (2017). Enhancing security control in sustaining the gains made in addressing KCPE and KCSE examination irregularities in Kenya. *Journal of Education and Practice*, 2(1), 28 – 37.
<https://carijournals.org/journals/index.php/JEP/article/view/187>
- Bifwoli, A., & Momanyi, M. (2020). School Administrators' Practices in Curbing Kenya Certificate of Secondary Education Examination Irregularities in Makueni Sub County, Kenya. *Journal of Popular Education in Africa*, 4(10), 4-20.
https://www.academia.edu/45450021/School_Administrators_Practices_in_Curbing_Kenya_Certificate_of_Secondary_Education_Examination_Irregularities_in_Makueni_Sub_County
- Bizimana, B. & Orodho, J. A. (2014). Teaching and Learning Resource Availability and Teachers' Effective Classroom Management and Content Delivery in Secondary Schools in Huye District, Rwanda. *Journal of Education and Practice* .5 (9), 111-122.
<https://www.bing.com/ck/a?!&p=0484b8ec37a530fbJmltdHM9MTY1ODQwNzQyNSZpZ3VpZD1iYmEzZmRjZC0wZDAyLTQ1MmMtYmU4ZC1jN2UyMTFkZjE5ODQmaW5zaWQ9NTE5MQ&ptn=3&hsh=3&fclid=c1e21a2e-08f2-11ed-96ea-3659a4163484&u=a1aHR0cHM6Ly9wYXB1cnMuc3Nybi5jb20vc29sMy9wYXB1cnMuY2ZtP2Fic3RyYWN0X2lkPTMxNzgyMjA&ntb=1>
- Brenner, R., & Glick, M. (1991). The regulation approach: theory and history. *New left review*, 188(1), 45-119. <https://newleftreview.org/issues/i188/articles/robert-brenner-mark-glick-the-regulation-approach-theory-and-history.pdf>
- Bretag, T., Harper, R., Burton, M., Ellis, C., Newton, P., Rozenberg, P., Saddiqui, S., & Haeringen, K. (2018). *Contract cheating: a survey of Australian university students*. <https://www.tandfonline.com/doi/full/10.1080/03075079.2018.1462788>
- Cheruiyot, K. (2021, May 10). No mercy: 287 students KCSE results cancelled over irregularities. *The Star*. <https://www.the-star.co.ke/news/2021-05-10-no-mercy-287-students-kcse-results-cancelled-over-irregularities/>
- Creswell, J. W. (2018). *Research design: Qualitative, quantitative and mixed methods approaches*. SAGE publications.
- Curran, K., Middleton, G., & Doherty, C. (2011). Cheating in exams with technology. *International Journal of Cyber Ethics in Education*,
<https://kevincurran.org/papers/Cheating.pdf>

- Dejene, W. (2021). Academic cheating in Ethiopian secondary schools: Prevalence, perceived severity, and justifications. *Cogent Education*, 8(1), 1-16.
<https://doi.org/10.1080/2331186X.2020.1866803>
- Dukes, D.L. (2012). “It’s not Cheating if you don’t get caught”: *Critical Discourse Analysis of Academic Integrity Policies in Public High Schools*. (Doctorate Thesis, The George Washington University).
<http://search.proquest.com/openview/1f0377772d3503ac043096512cd5712e/1?pq-origsite=gscholar&cbl=18750&diss=y>
- Fremer J., & Olson, J.F. (2015). *TILSA test security: lessons learned by state assessment programs in preventing, detecting, and investigating test security irregularities*. A project of the council of chief state school officers technical issues in large-scale assessment (TILSA) state collaborative on assessment & student standards (SCASS).
<https://ccsso.org/resource-library/tilsa-test-security>
- Frempong, M., Arloo, E. B., & Amissah, C. K. (2016). Factor analysis of issues contributing to examination malpractice in a tertiary institution in Ghana. *Mathematical Theory and Modeling*, 6, 1-6.
<https://www.semanticscholar.org/paper/Factor-Analysis-of-Issues-Contributing-to-in-a-in-Frempong-Arloo/bb728f78c3f0cbcdf6c87c6f7a16947dd497759f>
- Getangel ,K. N., Nyakan, P. O. , George, S. (2015) Influence of Teachers’ Working Conditions on Curbing Examination Malpractices in Public Secondary Schools in Kisii County, Kenya . *International Journal of Recent Research in Social Sciences and Humanities (IJRSSH)*. 2, (4), 221-232.
<https://www.paperpublications.org/upload/book/Influence%20of%20Teachers-566.pdf>
- Hopland A.O. (2013). School Facilities and Student Achievement in Industrial Countries: Evidence from the TIMSS. *International Education Studies*. 6, (3), 162-171 .
<https://files.eric.ed.gov/fulltext/EJ1067746.pdf>
- Ikwueke, L. (2011). Exploring the prevention of examination malpractice in secondary schools through students’ voice. (Doctorate Thesis, University of Southampton).
<https://eprints.soton.ac.uk/180883/>
- Iriani, A., & Manongga, D. (2018). Using soft systems methodology as an approach to evaluate cheating in the national examination. *Journal of Theoretical and Applied Information Technology*, 96(11), 3344-3355.
<https://www.semanticscholar.org/paper/USING-SOFT-SYSTEMS-METHODOLOGY-AS-AN-APPROACH-TO-IN-Iriani-Manongga/021252ba911f329cb2c2c4d6f3aa507d315e9abc>
- Joshua, M. T., Ekpoh, U. I., Edet, A. O., Joshua, A. M., & Obo, F. E. *Managing examination crisis: The menace of examination malpractice in Nigeria*.
<https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.610.4389&rep=rep1&type=pdf>

- Kagete, P. M. (2008). *Examination malpractices in Kenya* [Masters' thesis, University of Nairobi]. Kenya. <https://www.academia.edu/11625168/examination-malpractices-in-Kenya-psychological-characteristics-of-a-cheat>
- Kellaghan, T., & Greaney, V. (2020). *Public examinations examined*. The World Bank. <https://openknowledge.worldbank.org/bitstream/handle/10986/32352/9781464814181.pdf?sequence=2&isAllowed=y>
- Kenya National Examination Council Act (2012). *Kenya National Examinations Council Act; Chapter 225a*. <http://kenyalaw.org/kl/fileadmin/pdfdownloads/Acts/KenyaNationalExaminationsCouncilAct2012.PDF>
- Kurniawati, E., & Sunarso (2019). Forming Students' Character through School Culture in Senior High School Taruna Nusantara Magelang. *International Journal of Social Sciences*, 7(1), 141-162 . <http://oaji.net/articles/2020/745-1584081232.pdf>
- Kyei, E. A., (2019). How Authentic are our Examination Results? Investigating Causality in Cheating Behaviours and Moral Reasoning among Ghanaian Senior High School Students. In: *Education Quarterly Reviews*, 2(4), 715-731. https://abd88079-bdc5-4274-9638-f3715aab13b0.filesusr.com/ugd/ed8b62_2fc7707bce2b4dbdab96c070c89b3014.pdf
- Le Clear, E. A., (2005). *Relationships among leadership styles, school culture and students' achievements* [Doctorate dissertation, University of Florida]. United States. <https://ufdc.ufl.edu/UFE0013022/00001>
- Maheka, G. (2015). Nature and causes of examination malpractices in selected secondary schools in Kitwe District, Zambia, (Master's Thesis, University of Zambia) Lusaka. <http://dspace.unza.zm/bitstream/handle/123456789/4202/Main%20Document.pdf?sequence=1&isAllowed=y>
- Makana, F. (2016). *Matiang'i vindicated as tough rules lock out exam cheats. The Standard*. <https://www.standardmedia.co.ke/education/article/2000228312/matiangi-vindicated-as-tough-rules-lock-out-exam-cheats>
- Makaula, F. B. (2018). *Perceived causes and methods of examination malpractice in the Malawian education system: A case study of secondary schools in South East Education Division (SEED)*[Doctorate' Dissertation, University of Northern Iowa]. United States. <https://core.ac.uk/download/pdf/223002368.pdf>
- Mucheke, R. K., Maithya, P. M., & Misati, j. (2013). Factors related to Examination Irregularities in Secondary Schools in Meru-South District, Kenya. *The Cradle of Knowledge African Journal of Educational and Social Science Research. I*, (1), 38-45. <http://serek.or.ke/wp-content/uploads/2018/02/Factors-Related-to-Examination-Irregularities-in-Secondary-Schools-in-Meru-South-District-Kenya-Mucheke-Maithya-Misati.pdf>

- Muchemwa, S., & Dhliwayo, A. (2017). Curbing Examination Malpractices in Africa: Content Analysis. *Journal of Research Innovation and Implications in Education*, 1(3), 126 -139. <http://jrjie.com/index.php/JRIIE/index>
- Muiruri, M. & Kinogu, R. (202, March 30). Magoha accuses police of abetting exam cheating. *The Nation*. <https://nation.africa/kenya/news/education/-magoha-accuses-police-of-abetting-exam-cheating-3341348>
- Musyoka, R. (2012). *An investigation into the attitude of secondary school teachers and students towards cheating in national examinations* [Masters research project, University of Nairobi]. Kenya. http://erepository.uonbi.ac.ke/bitstream/handle/11295/96148/Musyoka_An%20investigation%20into%20the%20attitude%20of%20secondary%20school%20teachers.pdf?sequence=1&isAllowed=y
- Muthaa, G. M., Muriungi, P. K., & Njue, E. K. (2014). Competence of Security Officers in the Management of National Examinations in Secondary Schools in Eastern Province, Kenya. *Open Journal of Social Sciences*, 2, 73-78. <http://dx.doi.org/10.4236/jss.2014.212010>
- Mutinda, M. G. (2017). Factors influencing pupils' involvement in Examination malpractices in public primary schools, kikuyu sub county Kenya. [Master thesis, University of Nairobi]. https://www.bing.com/ck/a?!&&p=0b61ff8054693ecaJmltdHM9MTY1ODQyODkyMiZpZ3VpZD1kZGZhYTUwOC1jYTM3LTQyMzEtOGQ3Mi02MzAxYTdiMGFlOTcmaW5zaWQ9NTEyNA&pntn=3&hsh=3&fclid=cf572d16-0924-11ed-a1ba-01e8c6019765&u=a1aHR0cDovL2VyZXBvc210b3J5LnVvbmJpLmFjLmtilL2hhbmR5ZS8xMTI5NS8xMDE0MjI_c2hvdz1mdWxs&ntb=1
- Mwonga, C. M. (2019). *Stakeholders perceptions of control measures addressing malpractices on attainment of sustainable credible examinations in secondary schools in Makueni County, Kenya* [Masters' thesis, Kenyatta University]. Kenya. <https://ir-library.ku.ac.ke/bitstream/handle/123456789/20015/Stakeholders%e2%80%99%20Perceptions%20of%20Control%20Measures%20Addressing....pdf?sequence=1&isAllowed=y>
- Nabiswa, J. (2018). *School organizational culture and its influence on student deviant behaviour in secondary schools of Bungoma County, Kenya*. [Doctorate Thesis, Moi University]. Kenya. <http://ir.mu.ac.ke:8080/xmlui/bitstream/handle/123456789/1874/Nabiswa%20Janet%20.pdf?sequence=1&isAllowed=y>
- Naliaka, P., Odera, P. & Poipoi, M. (2015). Perceived psycho-social and school factors contributing to malpractices in internal examinations among secondary school

- students in Kakamega-Central Sub-county: Implications for counseling. .7(2), 18 - 23 . <https://academicjournals.org/journal/IJPC/article-full-text/5892EA050942>
- Ndege, J. G. (2012). *Cheating in examinations: the place of integrity and punishment* [Masters' thesis, University of Nairobi]. Kenya. <http://erepository.uonbi.ac.ke/handle/11295/8111>
- Njiru, S. M., Karuku, S., & Nyaga, M. (2020). *Performance rankings in education*, 15(12), 700-710. <https://academicjournals.org/journal/ERR/article-abstract/A9B9E5D65564>
- Nnekwu, D. A., & Odochukwu, E. B. (2016). Assessment of the effectiveness of management strategies for curbing examination malpractices in secondary schools in Nigeria. *European journal of education studies*, 2(11), 47-70. https://www.academia.edu/30100665/ASSESSMENT_OF_THE_EFFECTIVENESS_OF_MANAGEMENT_STRATEGIES_FOR_CURBING_EXAMINATION_MALPRACTICES_IN_SECONDARY_SCHOOLS_IN_NIGERIA
- Nyawira, L. (2019, November 08). Cheats city: Nairobi leads in exam malpractices. *The Star*. <https://www.the-star.co.ke/news/2019-11-08-cheats-city-nairobi-leads-in-exam-malpractices-magoha/>
- Obwatho, S. (2014). *Academic research writing: The logical sequence*. Starbright Services Ltd.
- Odo, L. O. (2015). Institutionalization of examination malpractice in secondary schools: a threat to quality secondary science education in Nigeria and development beyond 2020. *Knowledge Review*, 33(3), 1-8. <https://www.globalacademicgroup.com/journals/knowledge%20review/Livinus.pdf>
- Odongo, Z. O. (2013). *Influence of positive school culture on performance at Kenya Certificate of Secondary Education in public secondary schools in Rongo district, Kenya* [Masters' research project, University of Nairobi]. Kenya. http://erepository.uonbi.ac.ke/bitstream/handle/11295/56629/Odongo_Influence%20of%20positive%20school%20culture%20on%20performance.pdf?sequence=3&isAllowed=y
- Ojwan'g, M. A. (2019). Students' perspectives on examination cheating in basic education in Kenya. *European Journal of Education Studies*. 9(12), 695-700. DOI: 10.12691/education-9-12-1
- Onyema, E. M., Eucheria, A. U., David, N. A., Isa, A., Alsayed, A. O. & Naveed, Q. N. (2019). The Role of Technology in Mitigation of Examination Malpractices in West Africa *International Journal of Innovative Research in Computer and Communication Engineering* 7(10), 3990-4002. https://www.researchgate.net/publication/337364496_The_Role_of_Technology_in_Mitigation_of_Examination_Malpractices_in_West_Africa

- Onyibe, C. O., Uma, U. U., & Ibina, E., (2015). Examination Malpractice in Nigeria: Causes and Effects on National Development. *Journal of Education and Practice*, 6(26), 12-18. <https://files.eric.ed.gov/fulltext/EJ1077379.pdf>
- Opiyo, J. P., (2015). *Factors influencing recurrence examination irregularities in public secondary schools in Kisii county, Kenya* [Masters' Reaserch Project,University of Nairobi].Kenya.
http://erepository.uonbi.ac.ke/bitstream/handle/11295/99583/Opiyo_Factors%20influening%20recurrence%20examination%20irregularities%20in%20public%20secondary%20schools%20in%20Kisii%20county%2C%20Kenya.pdf?sequence=1&isAllowed=y
- Owenga. J. O. (2020). Relationship between home selected determinants and examination cheating among secondary school students. *IOSR Journal of Humanities and Social Science (IOSR-JHSS)*, 25(7), 54-62. <https://www.iosrjournals.org/iosr-jhss/papers/Vol.25-Issue7/Series-9/I2507095462.pdf>
- Oyieko, J. (2017). Examination rules and regulations and examination malpractices in secondary schools: (students' perception). A case study of schools in Bondo, Kenya. [Master's Thesis, University of Nairobi] Nairobi, Kenya.
<http://erepository.uonbi.ac.ke/handle/11295/103103>
- Oyieko. J. (2017). *Examination rules and regulations and examination malpractices in secondary schools: (students' perception) A case study of schools in Bondo, Kenya* [Masters' Reaserch projects]. Kenya
<http://erepository.uonbi.ac.ke/bitstream/handle/11295/103103/JANE%20OYIEKO%20FINAL%20PROJECT%20.pdf?sequence=1&isAllowed=y>
- Petters, J. S., & Okon, O. (2014). Students' perception of causes and effects of examination malpractice in the Nigerian educational system: The way forward for quality education. *Procedia - Social and Behavioral Sciences*, 114(2014), 125 – 129.
<https://reader.elsevier.com/reader/sd/pii/S187704281305310X?token=923A40701C2C51EEAD946031600486757DA9088C2D8E46395A2FA835AD4407A8CACD7DD2CE80C17685B34AB1EA1A860B&originRegion=eu-west-1&originCreation=20211111080042>
- Pol, M., Hloušková, L., Novotný, P., Václavíková, E., & Zounek J. (n.d). *School culture as an object of research*, 1-12. <https://files.eric.ed.gov/fulltext/ED497341.pdf>
- Shaibu, L., Ogwu, H. I., & Edegbo, C. (2019). Innovations in curbing examination insecurity in public secondary schools in the East education zone of Kogi estate. *BSUJEM*, 1(2), 13-26.
<https://www.bsum.edu.ng/journals/files/jem/vol1n2/article2.pdf>
- Shibo, M. N., Fredrick, O., & Ogola, J. O. (2017). *The Adequacy of Kenya National Examination Councils' Malpractice Penalties in Public and Private Secondary Schools in Kisii County, Kenya*. *Scholars Journal of Arts, Humanities and Social Sciences*, 5(4B), 403-411. <http://saspjournals.com/sjahss>

- Strom, P. S., & Strom, R., D., (2007). Cheating in middle school and high school. *The Educational Forum*, 71(2), 104-116.
https://www.researchgate.net/publication/249054316_Cheating_in_Middle_School_and_High_School
- Suleman, Q., Gul, R., Ambrin, S. & Kamran, F. (2015). Factors Contributing to Examination Malpractices at Secondary School Level in Kohat Division, Pakistan. *Journal of Education and Learning*, 9(2), 165-182.
https://www.researchgate.net/publication/277073420_Factors_Contributing_to_Examination_Malpractices_at_Secondary_School_Level_in_Kohat_Division_Pakistan
- Taderera, E., Nyikahadzoi, L., Matamande, W., & Mandimika, E. (2014). Exploring management strategies to reduce cheating in written examinations: case study of Midlands State University. *Journal of Case Studies in Education*, 5(1), 1-13.
<https://eric.ed.gov/?id=EJ1060592>
- Tarus, D. (2022). KCSE 2021: Results of 441 candidates cancelled due to cheating. <https://www.standardmedia.co.ke/education/article/2001443888/kcse-2021-results-of-441-candidates-cancelled-due-to-cheating>
- Tas, Y., & Tekkaya, C. (2010). Personal and contextual factors associated with students' cheating in Science. *The Journal of Experimental Education*, 78, (2010) 440-463.
<https://www.tandfonline.com/doi/full/10.1080/00220970903548046>
- Tawiah, D. K.; Alberta, G. Y.; Bossman, F. I.; Ata, D. (2015). The perception and reasons of examination malpractice among students. *International Journal of Innovative research and development*, 4(4), 145-148.
<https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.895.688&rep=rep1&type=pdf>
- Thinguri, R., Alio, A., A. & Adow, I., M. (2015). An assessment of the management of KCSE examination and its influence on irregularities among students: A case of secondary schools in Mandera county, Kenya. *Journal of Education and Practice*, 6(28), 15-22. <https://eric.ed.gov/?id=EJ1081189>
- Tina, N., (2009). Management of examinations: Ethical issues. *Edo Journal of Counselling*, 2(1), 90-102. <https://www.ajol.info/index.php/ejc/article/view/52658>
- Udoh, N.A. (2011). Remote causes and counseling implications of examination malpractice in Nigeria. *Inquiries Journal, Social Sciences, Arts and Humanities*, 3(10), 1 <http://www.inquiriesjournal.com>
- Ushie. O. S, & Ishanga. A. R. (2016). Examination malpractice: causes, effects and possible ways of curbing the menace. A case study of Cross River University of technology. *International Journal of Managerial Studies and Research (IJMSR)*, 4(1), 59-65. <https://www.eajournals.org/wp-content/uploads/Examination-Malpractices-and-Corruption-among-Students-at-Cross-River-University-of-Technology-Calabar-Nigeria.pdf>
- Vygotsky, L. S., & Cole, M. (1978). *Mind in society: Development of higher psychological processes*. Harvard university press.

[https://books.google.co.ke/books?hl=en&lr=&id=RxjjUefze_oC&oi=fnd&pg=PA1&dq=Vygotsky,+L.S.+\(1978\).+Mind+in+the+society,+MA:+Harvard+university+press+&ots=ojA0T-lZ7w&sig=TtHj-Mr3fjyryQkVFBBaWeVz5ko&redir_esc=y#v=onepage&q=Vygotsky%2C%20L.S.%20\(1978\).%20Mind%20in%20the%20society%2C%20MA%3A%20Harvard%20university%20press&f=false](https://books.google.co.ke/books?hl=en&lr=&id=RxjjUefze_oC&oi=fnd&pg=PA1&dq=Vygotsky,+L.S.+(1978).+Mind+in+the+society,+MA:+Harvard+university+press+&ots=ojA0T-lZ7w&sig=TtHj-Mr3fjyryQkVFBBaWeVz5ko&redir_esc=y#v=onepage&q=Vygotsky%2C%20L.S.%20(1978).%20Mind%20in%20the%20society%2C%20MA%3A%20Harvard%20university%20press&f=false)

- Wambugu, C. W. (2015). *Role of school administrators in curbing examination malpractices in KCSE in Nairobi county Kenya*. [Master's Thesis, Kenyatta University.] Kenya. <https://ir-library.ku.ac.ke/handle/123456789/314/discover>
- Yahaya, L. A., Odebode, A.A. & Akinyemi, O.B. (2017). Types of examination malpractice as perceived by teachers of secondary schools in Lagos State, Nigeria: implications for counselling practice. *African Journals Online (AJOL)* 25 (1). <https://www.ajol.info/index.php/ifep/article/view/156802>
- Yambi, T. A. C. (2020). Assessment and Evaluation in Education. <https://www.bing.com/ck/a?!&p=945ed4c6e12579fdJmldHM9MTY1ODQwMjk0NSZpZ3VpZD1hOTYwYmUyYy1iMmI2LTQxNWItYTMwMi1jMjYyYjRlNmI2NWUmaW5zaWQ9NTE4Mg&pfn=3&hsh=3&fclid=53bdd315-08e8-11ed-b128-9f82c7245d47&u=a1aHR0cHM6Ly93d3cucmVzZWZyY2hnYXRlM5ldC9wdWJsaWNhdGlvbi8zNDI5MTgxNDlfQVNTRVNTTUVOVF9BTkRfRVZBTfVBEIPT19JT19FRFVDQVRJT04&ntb=1>
- Yazici, H., Seyis, S., & Altun, F. (2011). Emotional intelligence and self-efficacy beliefs as predictors of academic achievement among high school students. *Procedia Social and Behavioral Sciences*, 15 (1) 2319–2323. https://www.researchgate.net/publication/271564267_Emotional_intelligence_and_self-efficacy_beliefs_as_predictors_of_academic_achievement_among_high_school_students

APPENDICES

Appendix I: Introduction Letter

Re: Request to fill the questionnaires for research purposes

I am a postgraduate student at Kenya Methodist University taking a Master of Education Degree course. As part of the course, I am expected to carry out a research in my area of study. Therefore, this survey tool is meant to gather information and opinion institutional-based factors influencing the management of KCSE examination irregularities in Nairobi County in Kenya. The study expect to make suitable recommendations to school administrators and other stakeholder on how they can effectively curb KCSE examination irregularities. Please note, all your responses will be treated as confidential. You are requested not to write your name in the questionnaire, only give your most honest independent answers. All your responses to questions will be used for purposes of this research only.

Thank you,

Mugambi Samuel Kinoti

Tel. 0715890625

APPENDIX II: Questionnaire for Principals and Dean of Students

Instructions

Please respond to all the items in the questionnaire by ticking appropriately or writing your answers in the spaces provided.

Section A: Demographic Information

1) What is your gender?

- a. Male []
- b. Female []

2) Identify the school type where you work?

- a. National school []
- b. Extra-County school []
- c. County school []
- d. Sub-County school []
- e. Private school []

3) What is your highest academic qualification?

- a. Diploma []
- c. B. Ed []
- d. Masters []
- e. Others (specify)

4) For how long have you been in the teaching profession?

- a. Less than one year []
- b. 1 – 3 years []
- c. 4 – 6 years []
- f. 7 – 9 years []
- d. Over 10 years []

5) For how long have you served in the current school in years?

- a. Less than 5 years []
- b. 5 - 10 years []
- c. 10 – 15 years []
- d. More than 15 []

Section B: Regulatory Framework

- 6) Indicate the extent to which each item/sentiment provided below regarding regulatory framework help to address KCSE examination irregularities in secondary school; *1 = to a very small extent, 2 = to a small extent, 3 = to a moderate extent, 4 = to large extent, 5 = to a very large extent.*

No	Regulatory framework	1	2	3	4	5
a)	School rules and regulations	[1]	[2]	[3]	[4]	[5]
b)	Policy and guidelines from Kenya National Examination Council	[1]	[2]	[3]	[4]	[5]
c)	Legislations by the Ministry of Education	[1]	[2]	[3]	[4]	[5]
d)	Penalties imposed on culprits for examination irregularities	[1]	[2]	[3]	[4]	[5]
e)	The Education ACT	[1]	[2]	[3]	[4]	[5]
f)	Directives from the Cabinet Secretary on handling of national examinations	[1]	[2]	[3]	[4]	[5]

- 7) What regulatory measures are needed to mitigate KCSE examination irregularities in secondary schools?

Section C: Availability of Learning Resources

- 8) Indicate the extent to which each item/sentiment provided below regarding availability of learning resources help to address KCSE examination irregularities at your school; *1 = to a very small extent, 2 = to a small extent, 3 = to a moderate extent, 4 = to large extent, 5 = to a very large extent.*

No	Availability of learning resources	1	2	3	4	5
1.	Text books	[1]	[2]	[3]	[4]	[5]
2.	Instructional /teaching aids	[1]	[2]	[3]	[4]	[5]
3.	Laboratory equipment	[1]	[2]	[3]	[4]	[5]
4.	Reagents	[1]	[2]	[3]	[4]	[5]
5.	School library	[1]	[2]	[3]	[4]	[5]
6.	Workshops	[1]	[2]	[3]	[4]	[5]
7.	Land for agriculture	[1]	[2]	[3]	[4]	[5]
8.	Technological resources e.g. computer hardware and software	[1]	[2]	[3]	[4]	[5]
9.	Computer lab	[1]	[2]	[3]	[4]	[5]

9) What improvement is needed on learning resources to mitigate KCSE examination irregularities in secondary schools?

Section D: School Culture

10) Indicate the extent to which each item/sentiment provided below regarding school culture help to address KCSE examination irregularities at your school; *1 = to a very small extent, 2 = to a small extent, 3 = to a moderate extent, 4 = to large extent, 5 = to a very large extent.*

No	School culture	1	2	3	4	5
1.	School core values	[1]	[2]	[3]	[4]	[5]
2.	Dressing codes	[1]	[2]	[3]	[4]	[5]
3.	School rules	[1]	[2]	[3]	[4]	[5]
4.	School policies	[1]	[2]	[3]	[4]	[5]
5.	Special programs in the school	[1]	[2]	[3]	[4]	[5]
6.	Rewards systems and programs in the school	[1]	[2]	[3]	[4]	[5]
7.	School traditions	[1]	[2]	[3]	[4]	[5]
8.	Leadership practices in the school	[1]	[2]	[3]	[4]	[5]

11) What measures should be taken on school culture to mitigate KCSE examination irregularities in secondary schools?

Section E: Human Resources

12) Indicate the extent to which each aspects/sentiments provided below regarding human resources help to address KCSE examination irregularities at your school; 1 = to a very small extent, 2 = to a small extent, 3 = to a moderate extent, 4 = to large extent, 5 = to a very large extent.

No	Human resources	1	2	3	4	5
1.	Number of teaching staff in the school	[1]	[2]	[3]	[4]	[5]
2.	Number of support staff in the school	[1]	[2]	[3]	[4]	[5]
3.	Number of laboratory technicians	[1]	[2]	[3]	[4]	[5]
4.	Qualification of teachers	[1]	[2]	[3]	[4]	[5]
5.	Professional efficiencies of teachers	[1]	[2]	[3]	[4]	[5]
6.	Preparedness of teachers	[1]	[2]	[3]	[4]	[5]
7.	Training of the examination invigilators	[1]	[2]	[3]	[4]	[5]
8.	Staffing in the department of guidance and counselling in the school	[1]	[2]	[3]	[4]	[5]
9.	Number of KNEC officers during examination administration	[1]	[2]	[3]	[4]	[5]
10.	Supervisory role of school principal	[1]	[2]	[3]	[4]	[5]
11.	Number of security officers during examination administration	[1]	[2]	[3]	[4]	[5]

13) What human resources measures are needed to mitigate KCSE examination irregularities in secondary schools?

Section F: Management of KCSE examination irregularities

- 14) Indicate the extent to which each aspects/sentiments provided below regarding management of KCSE examination irregularities help to address KCSE examination irregularities at your school; 1 = to a very small extent, 2 = to a small extent, 3 = to a moderate extent, 4 = to large extent, 5 = to a very large extent.

No	Human resources	1	2	3	4	5
1.	Adequate preparedness of learners	[1]	[2]	[3]	[4]	[5]
2.	Institutionalizing measures that discourage cheating in examinations	[1]	[2]	[3]	[4]	[5]
3.	Cancellation of results	[1]	[2]	[3]	[4]	[5]
4.	Imprisonment of culprits	[1]	[2]	[3]	[4]	[5]
5.	Embracing e-invigilation by use of CCTVs	[1]	[2]	[3]	[4]	[5]
6.	Embracing biometric to deter impersonation	[1]	[2]	[3]	[4]	[5]
7.	Adequacy of learning and teaching resources	[1]	[2]	[3]	[4]	[5]
8.	Banning of students from taking another examination for a specified period of time	[1]	[2]	[3]	[4]	[5]
9.	Adequate KNEC officers during examination administration	[1]	[2]	[3]	[4]	[5]
10.	Holding school principal responsible for leaking of examination in the school	[1]	[2]	[3]	[4]	[5]
11.	Number of security officers during examination administration	[1]	[2]	[3]	[4]	[5]
12.	Mandatory guidance and counselling for students who have been noticed with the vice	[1]	[2]	[3]	[4]	[5]
13.	Strict rules during and after a national examination	[1]	[2]	[3]	[4]	[5]
14.	Banning the use of mobile phones at the examination center	[1]	[2]	[3]	[4]	[5]
15.	Ensuring that security personnel are strategically position during examination administration	[1]	[2]	[3]	[4]	[5]

- 15) What measures would you recommend in order to ensure effective management of KCSE examination irregularities in secondary schools?

APPENDIX III: Interview Schedule for Students Presidents

Section A: Background Information

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

- 2) Rate the extent to which KCSE examination malpractice is in Secondary schools?
 - a. To a large extent
 - b. To a little extent
 - c. Not at all

- 3) Rate the extent to which teachers participate in aiding KCSE examination malpractice in Secondary schools?
 - a. To a large extent
 - b. To a little extent
 - c. Not at all

- 4) Rate the extent to which students are to be blamed for KCSE examination malpractice in Secondary schools?
 - a. To a large extent
 - b. To a little extent
 - c. Not at all

Section B: Regulatory Framework

- 5) What measures do you think should be adopted to curb KCSE examination irregularities in secondary schools?

Section C: Availability of Learning Resources

- 6) Suggest the improvement that are needed on each of the following learning resources in order to mitigate KCSE examination irregularities in secondary schools?

No	Availability of learning resources	Improvement needed
10.	Text books	
11.	Instructional /teaching aids	
12.	Laboratory equipment	
13.	Reagents	
14.	School library	
15.	Workshops	
16.	Land for agriculture	
17.	Technological resources e.g. computer hardware and software	
18.	Computer lab	

Section D: School Culture

- 7) What measures should be taken on school culture to mitigate KCSE examination irregularities in secondary schools?

Section E: Human Resources

- 8) What measures are needed regarding teaching and non-teaching staff to mitigate KCSE examination irregularities in secondary schools?

Section F: Management of KCSE examination irregularities

- 9) What measures would you recommend in order to ensure effective management of KCSE examination irregularities in secondary schools?

APPENDIX IV: Interview Schedule for County Director of Education

Section A: Background Information

- 1) How long have you been a Director of Education?
- 2) Rate the extent to which KCSE examination malpractice is in Secondary schools?
 - a. To a large extent []
 - b. To a little extent []
 - c. Not at all []
- 3) Rate the extent to which teachers participate in aiding KCSE examination malpractice in Secondary schools?
 - a. To a large extent []
 - b. To a little extent []
 - c. Not at all []
- 4) Rate the extent to which students are to be blamed for KCSE examination malpractice in Secondary schools?
 - a. To a large extent []
 - b. To a little extent []
 - c. Not at all []

Section B: Regulatory Framework

- 5) What measures has the Government taken to curb KCSE examination irregularities in secondary schools?

Section C: Availability of Learning Resources

- 6) State the improvement measures taken by government on learning resources in order to mitigate KCSE examination irregularities in secondary schools?

Section D: School Culture

- 7) What are the guidelines from the Ministry of Education regarding school culture in order to mitigate KCSE examination irregularities in secondary schools?

Section E: Human Resources

- 8) What measures has the government of Kenya taken regarding teaching and non-teaching staff to mitigate KCSE examination irregularities in secondary schools?

Section F: Management of KCSE examination irregularities

- 9) What measures would you recommend in order to ensure effective management of KCSE examination irregularities in secondary schools?

APPENDIX V: List of Public and private Secondary Schools in Nairobi County

Name of secondary school	Category of school
1. Anointed High School	Sub-county
2. Balози School	Sub-county
3. Brooklynn High School	Sub-county
4. Brookspring Education Centre	Sub-county
5. Dandora Girls Secondary School	Sub-county
6. Divine Mercy School	Sub-county
7. Goldenlight Academy	Sub-county
8. Good Samaritan School	Sub-county
9. Kydf Reuben Secondary School	Sub-county
10. Mary Happy Day	Sub-county
11. Mbagathi Road Secondary School	Sub-county
12. Moonlight Centre School	Sub-county
13. New Horizons Secondary School	Sub-county
14. River Of Life Education	Sub-county
15. Soweto Baptist High School	Sub-county
16. St. Dominic Secondary School	Sub-county
17. St. Joseph Technical Secondary School	Sub-county
18. Star Of Hope Secondary	Sub-county
19. Zedit Solution Secondary School	Sub-county
20. Babadogo secondary school	County
21. CGHU Mixed Secondary School	County
22. Dagoretti mixed secondary school	County
23. Embakasi Garrison Secondary School	County
24. Embakasi Girls Secondary School	County
25. Garden Estate Sec sch	County
26. Githurai Secondary School	County

27. Kamukunji Maina Wanjigi Secondary School	County
28. Kamukunji secondary school	County
29. Karen c Girls Secondary School	County
30. Kariobangi North girls	County
31. Langata Boys High School	County
32. Lavington girl's secondary	County
33. Loresho Secondary School	County
34. Makongeni secondary school	County
35. Mathari Mixed Secondary School	County
36. Mutuini High School	County
37. Mwiki Secondary School	County
38. Nairobi Milimani Secondary School	County
39. Olympic high school	County
40. Our lady of mercy sec shauri moyo	County
41. Ruai Boys	County
42. Ruai Girls Secondary school	County
43. Ruthimitu Girls Secondary school	County
44. St Teresa's girls secondary	County
45. Aquinas High School	Extra County
46. Buruburu Girls Secondary	Extra County
47. Dagoretti High School	Extra County
48. Highridge Girls Boarding Secondary school	Extra County
49. Highway Secondary school	Extra County
50. Hospital Hill High School	Extra County
51. Huruma girls' High School	Extra County
52. Moi Girls' School Nairobi	Extra County
53. Muhuri Muchiri Boys High School	Extra County
54. Nembu Girls High School	Extra County

55. Ngara Girls' High School	Extra County
56. Ofafa Jericho High School	Extra County
57. Our Lady of Mercy Secondary school South B	Extra County
58. Precious Blood Riruta	Extra County
59. St Anne's Girls' Secondary School	Extra County
60. St George's Girls' Secondary school	Extra County
61. Statehouse Girls High School	Extra County
62. Uhuru Secondary School	Extra County
63. Upper Hill School	Extra County
64. Pangani Girls	National school
65. Starehe Boys Centre	National school
66. Starehe Girls Centre	National school
67. Kenya High	National school
68. Lenana School	National school
69. Nairobi School	National school
1. Batian Christian School	Private secondary school
2. Blescohouse Schools – Boys High School Branch	Private secondary school
3. Bookshine High School	Private secondary school
4. Brookfield Secondary School	Private secondary school
5. Bunks Schools Ltd	Private secondary school
6. Hillcrest International Schools	Private secondary school
7. I T Kids Ltd	Private secondary school
8. Isinya Boys Secondary School	Private secondary school
9. K D Handa Secondary School	Private secondary school
10. Kareng'ata Academy	Private secondary school
11. Kianda School	Private secondary school
12. Light Academy Boys Secondary	Private secondary school
13. Light Academy Girls Secondary	Private secondary school

14. Loreto Convent Msongari School	Private secondary school
15. Lukenya Schools	Private secondary school
16. Malezi School	Private secondary school
17. Mount Laverna Girls Secondary School	Private secondary school
18. Muthaiti Girls Secondary School	Private secondary school
19. Oshwal Academy Nairobi – Senior High	Private secondary school
20. Riara Group of Schools	Private secondary school
21. Riara Springs Academy	Private secondary school
22. Rusinga School Nairobi	Private secondary school
23. Shiner’s Girls High School	Private secondary school
24. Shiners Boys High School	Private secondary school
25. Sigona Girls High School	Private secondary school
26. St Catherine’s Mountain View Academy	Private secondary school
27. St Hannah’s Boys High School	Private secondary school
28. St Mary’s School	Private secondary school
29. Strathmore School	Private secondary school
30. The High Link Schools	Private secondary school

APPENDIX VI: Sample Size Determination Table

Population	Sample	Population	Sample	Population	Sample
10	10	220	140	1200	291
15	14	230	144	1300	297
20	19	240	148	1400	302
25	24	250	152	1500	306
30	28	260	155	1600	310
35	32	270	159	1700	313
40	36	280	162	1800	317
45	40	290	165	1900	320
50	44	300	169	2000	322
55	48	320	175	2200	327
60	52	340	181	2400	331
65	56	360	186	2600	335
70	59	380	191	2800	338
75	63	400	196	3000	341
80	66	420	201	3500	346
85	70	440	205	4000	351
90	73	460	210	4500	354
95	76	480	214	5000	357
100	80	500	217	6000	361
110	86	550	226	7000	364
120	92	600	234	8000	367
130	97	650	242	9000	368

140	103	700	248	10 000	370
150	108	750	254	15 000	375
160	113	800	260	20 000	377
170	118	850	265	30 000	379
180	123	900	269	40 000	380
190	127	950	274	50 000	381
200	132	1000	278	75 000	382
210	136	1100	285	1 000 000	384
Population	Sample	Population	Sample	Population	Sample

APPENDIX VII: NACOSTI Research Permit

 REPUBLIC OF KENYA	 NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION
Ref No: 589727	Date of Issue: 03/February/2020
RESEARCH LICENSE	
	
This is to Certify that Mr., Samuel Mugambi of Kenya Methodist University, has been licensed to conduct research in Nairobi on the topic: CHALLENGES FACING MANAGEMENT OF EXAMINATION IRREGULARITIES IN THE KCSE EXAMINATIONS ADMINISTRATION IN KENYA, for the period ending : 03/February/2021.	
License No: NACOSTI/P/20/3677	
Applicant Identification Number 589727	 Director General NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION
	Verification QR Code 
NOTE: This is a computer generated License. To verify the authenticity of this document, Scan the QR Code using QR scanner application.	

APPENDIX VIII: Introduction Letter from KeMU



KENYA METHODIST UNIVERSITY

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

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

23rd January 2020

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

Dear sir/ Madam,

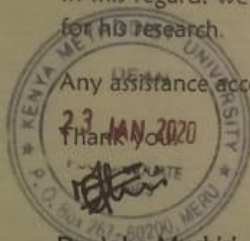
RE: MUGAMBI SAMUEL KINOTI (EDU-3-6502-1/2014)

This is to confirm that the above named is a bona fide student of Kenya Methodist University, Department of Education undertaking a Degree of Master of Educational Leadership and Management. He is conducting research on, 'Challenges facing management of examination Irregularities in the KCSE Examinations administration in Kenya'

We confirm that his Research proposal has been defended and approved by the University.

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

Any assistance accorded to him will be appreciated.



Dr. John Muchiri, PHD.
Director Postgraduate Studies