SOCIAL MEDIA USAGE AND STUDENTS' ACADEMIC PERFORMANCE IN TEACHERS' TRAINING COLLEGES IN VIHIGA COUNTY, KENYA

HUMPHREY MUSERA LUGONZO

MED (KENYATTA UNIVERSITY), BSC (KENYATTA UNIVERSITY)

A THESIS SUBMITTED TO THE BOARD OF POST-GRADUATE STUDIES IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF DOCTOR OF PHILOSOPHY IN SOCIOLOGY OF EDUCATION OF THE SCHOOL OF EDUCATION AND HUMAN RESOURCE DEVELOPMENT, DEPARTMENT OF EDUCATIONAL FOUNDATIONS, ADMINISTRATION, PLANNING AND ECONOMICS OF KISII UNIVERSITY

2024

DECLARATION AND RECOMMENDATION

DECLARATION BY THE CANDIDATE:

I declare that this thesis is my original work and has not been presented for examination or award for a degree or diploma in any other institution.

Signature _____ Date 11/9/24

Humphrey Musera Lugonzo

DED10/00463/16

RECOMMENDATIONS BY THE SUPERVISORS:

This thesis has been submitted for examination with our approval as university supervisors.

Signature _____ Date 19/09/2024

Prof. Benard Omenge Nyatuka, PhD

Associate Professor,

Department of Educational Foundations, Administration, Planning and Economics

Kisii University

Signature _____ Date 19/09/2024

Dr. Titus Ogalo Pacho, PhD

Senior Lecturer,

Department of Educational Foundations, Administration, Planning and Economics

Kisii University

ii

PLAGIARISM DECLARATION

DECLARATION BY STUDENT

i. I declare I have read and understood Kisii University Postgraduate Examination Rules and Regulations, and other documents concerning academic dishonesty.
ii. I do understand that ignorance of these rules and regulations is not an excuse for a violation of the said rules.
iii. If I have any questions or doubts, I realize that it is my responsibility to keep seeking an answer until I understand.
iv. I understand I must do my own work.
v. I understand that if I commit any act of academic dishonesty like plagiarism, my thesis can be assigned a fail grade ("F")
vi. I further understand I may be suspended or expelled from the university for academic dishonesty.

Name: Humphrey Musera Lugonzo **Signature:** _____

Reg. No: DED10/00463/16 **Date:** _____

DECLARATION BY SUPERVISORS

- We declare that this thesis has been submitted to plagiarism detection service.
- The thesis contains less than 20% of plagiarized work.
- We hereby give consent for marking.

1. Name: Prof. Benard Omenge Nyatuka
Designation: Associate Professor
Department: Educational Foundations, Administration, Planning and Economics
Affiliation: Kisii University

Signature: ..... **Date:** .....

2. Name: Dr. Titus Ogalo Pacho
Designation: Senior Lecturer
Department: Educational Foundations, Administration, Planning and Economics
Affiliation: Kisii University

Signature: ..... **Date:** .....

DECLARATION OF NUMBER OF WORDS

Please note that at Kisii University, PhD thesis shall comprise a piece of scholarly writing of more than 50,000 words for the PhD degree. This length includes references, but excludes the bibliography, if applicable and any appendices.

Where a candidate wishes to exceed or reduce the word limit for a thesis specified in the regulations, the candidate must enquire with the Director of Postgraduate about the procedures to be followed. Any such enquiries must be made at least 2 months before the submission of the thesis.

Please note in cases where students exceed / reduce the prescribed word limit set out, Director of Postgraduate may refer the thesis for resubmission requiring it to be shortened or lengthened.

Candidate's Name: Humphrey Musera Lugonzo **ADM NO:** DED10/00463/16
School: Education and Human Resource Development
Department: Educational Foundations, Administration, planning and Economics

Thesis Title: SOCIAL MEDIA USAGE AND STUDENTS' ACADEMIC PERFORMANCE IN TEACHERS' TRAINING COLLEGES IN VIHIGA COUNTY, KENYA.

I confirm that the word length of:

(1) the thesis, including footnotes, is 55,351 (fifty-five thousand, three hundred and fifty-one)
(2) the bibliography is 0 (zero)
(3) the appendices are 4, 493 (four thousand four hundred and ninety-three).

I also declare the electronic version is identical to the final, hard bound copy of the thesis and corresponds with those on which the examiners based their recommendation for the award of the degree.

Candidate's Signature: ……..…..…... **Date:** …….....

I confirm that the thesis submitted by the above-named candidate complies with the relevant word length specified in the Board of Postgraduate and Commission of University Education regulations for the PhD Degrees.

Supervisor 1 signature: ..... **Date:** …….....
Email: bnyatuka@kisiiuniversity.ac.ke **Cellphone:** 0722967551

Supervisor 2 signature: ..... **Date:** …….....
Email: tpacho@kisiiuniversity.ac.ke **Cellphone:** 0791387264

COPYRIGHT PAGE

DEDICATION

I dedicate this thesis to my loving parents the late Mr. Ben Lugonzo Misigo and Mrs. Beatrice Ambogo Lugonzo for teaching me the value of hard work through their tireless assistance, encouragement and academic foundation they laid in me. You continuously mean so much to me. I dedicate this work to the entire Lugonzo's family for the inner drive you drilled in me to pursue my studies. Furthermore, I dedicate this thesis to my children Einstein Amani and Dylan Lugonzo for their emotional support and creating a conducive home environment during the period of my studies.

God bless all of you.

ACKNOWLEDGEMENT

I most sincerely thank the Almighty God for helping and giving me the grace to undertake this task. I acknowledge and express my heartfelt gratitude to my committed academic supervisors Prof. Benard Omenge Nyatuka (PhD) and Dr. Titus Ogalo Pacho (PhD) for their continued support and concern which inspired me to complete this work. I recognize their sacrifice and diligence in correcting my work. I appreciate Dr. Rose Moindi (PhD) of Kisii University for her great aid and input when I was analyzing the study findings. I similarly acknowledge the sacrificial effort of Dr. Jackline Okello who is a lecturer of Linguistics at Maseno University for editing this work to address grammatical and typographical issues. I commend my class-mates Mr. Nixon Chazima Mahindu and Mrs. Beatrice Owano Ayanga for their concern and encouragement as I was doing this study and being part of the winning and cheering team that made this tedious work light. I thank all the principals, teachers and students who spared their time to be involved in this noble course. I am sincerely indebted to all of you as well as those not mentioned here for your credible contributions during my study. I sincerely finally pay my tributes to my family for their understanding, immense patience and unwavering support when I was engaged with my studies.

I say thank you to all of you.

May our good God bless you immensely.

ABSTRACT

The use of social media is on the rise globally. There is also a decline in performance of students in academics in Teachers' Training Colleges. There is limited evidence on the effect of social media use on academic performance in Vihiga County in Kenya from past studies. This study purposed to examine the effect of social media use on academic performance of students in Teachers' Training Colleges in the county. The four objectives used to fill the research gaps of this study were: to examine the relationship between types of social media used for communication and level of students' academic performance, to find out the relationship between frequency of social media use and level of students' academic performance, to determine the relationship between interpersonal relationships and level of academic performance of students, and to evaluate the relationship between online attacks and level of academic performance of students in the colleges. This was achieved using students' performance in end of term examinations as well as five social media platforms namely: Twitter, Facebook, Instagram, WhatsApp and YouTube. The study was guided by technological determinism theory. Descriptive survey research design was used in the study with the aid of mixed method approach. The target population of 1,584 comprised of 6 principals, 1,478 students and 100 tutors in 6 Teachers' Training Colleges. Purposive sampling technique was used to sample the 6 colleges and 6 principals. Simple random sampling technique was used to sample 306 students and 80 tutors from the table made by Krejcie and Morgan (1970) giving a total sample size of 392. Data was gathered using interview guide and questionnaires. Validity and reliability were tested by piloting the tools in 2 Teachers' Training Colleges in Kakamega County. Experts at the School of Education and Human Resource Development in Kisii University scrutinized the tools to determine its validity. Cronbach's alpha was used to determine the reliability. Acceptable values of 0.78 and 0.80 were obtained from questionnaires issued to tutors and students respectively. Statistical Package for Social Sciences Software Version 20 was used to analyze quantitative data descriptively and inferentially and presented in tables and graphs. Pearson Product Moment Correlation, Regression and ANOVA were used to test if a correlation existed between the variables. Qualitative data was analysed thematically in line with the study objectives and reported in textual form based on the emerging themes. The study observed that a positive correlation which was statistically significant existed between the variables in the first null hypothesis since the p-value got (0.000) was less than 0.05. Hence, the rejection of this null hypothesis concluded that types of social media affected students' academic performance. It was noted from null hypothesis two that a positive significant association existed since $p = 0.000 < 0.05$. The rejection of this null hypothesis led to a conclusion that frequency of social media use influenced academic performance. The $p = 0.000 < 0.05$ obtained in the third null hypothesis showed a statistically significant positive relationship meaning that interpersonal relationships influenced academic performance. The fourth null hypothesis was finally rejected since a statistically positive correlation existed ($p = 0.000 < 0.05$). It was concluded that magnitude of online attacks correlated with academic performance significantly. The study recommended that students should use the various types of social media frequently as well as their positive interpersonal relationships with other people on social media and knowledge of online attacks to enhance their academic performance. The findings would sensitize principals, students and tutors on effect of social media on students' academic performance in Teachers' Training Colleges. It may also be significant to administrators by assisting them to adopt and form suitable policies on the use of social media among students in such colleges.

TABLE OF CONTENTS

LIST OF APPENDICES

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS AND ACRONYMS

ANOVA: Analysis of Variance.

BoM: Board of Management.

CAK: Communications Authority of Kenya.

CDE: County Director of Education.

ICT: Information Communication Technology.

ISP: Internet Service Provider.

KEMI: Kenya Education Management Institute.

KICD: Kenya institute Curriculum Development.

KNBS: Kenya National Bureau of Statistics.

KNEC: Kenya National Examinations Council.

MoE: Ministry of Education.

NACOSTI: National Commission for Science, Technology and Innovation.

PTE: Primary Teacher Examination.

SPSS: Statistical Package for Social Sciences.

TSC: Teachers Service Commission.

TTCs: Teachers' Training Colleges.

UN: United Nations.

USA: United States of America.

WHO: World Health Organization.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

According to DeMonte (2013), the education standards of a country rely on the kind of training teachers get in Teachers' Training Colleges hereafter TTCs. Hilburn and Ruth (2003) said that the ability of learners to acquire the skills, virtues and behaviours that they can use in society depends on the ability of teacher to mould and impart in them 21st century skills via education. Etkina (2011) observed that teachers must have the right competencies and attitudes to aid them produce skilled and independent-minded people. This is attained by training teachers professionally to aid them mould learners because one of the key focus of learning is academic achievement of students. TTCs facilitate learning by instilling professional skills in students which they use to teach learners in future.

The success of primary education depends on the kind of training students get in teachers' training colleges as shown by McCawley (2009). In relation to the pedagogical aspect of the curriculum offered to students, most of these colleges have incorporated the use of modern technology in the learning process. There is need for teacher training to incorporate the use of technologies like social media to promote academics of learners. Aslam and Nazim (2016) noted that social media help people to share their interests, information and experiences with other people thus aiding in building long term relations among people and groups. The training needs should include the way students interact socially to foster their academic

achievement at the college as these students will transmit these social interaction skills to the pupils they will be teaching in future to promote their studies.

To achieve this goal, Bozkurt, Karadeniz and Kocdar (2017) urged that some institutions of learning like Anadolu University in Turkey use social media for administrative and student support services. The university use it administratively to communicate with students, run university marketing campaigns, give institutional announcements and get feedback from students to know how they feel by analyzing their reactions. Students use social media to talk with one another informally, connect with friends or family, get announcements and be in touch with the university. Acheaw and Larson (2015) said that in Jordanian university, learners used social media frequently to interact with other society members like siblings, friends and parents. In the same vein, Archana and Jyotsna (2015) examined the effect of social media on interaction among college learners in India. They noted that learners greatly used social media to be in contact with their tutors, parents and search old friends. Studies in Turkey, Jordan and India were done in universities while this study was done in TTCs.

Archana and Jyotsna (2015) study agreed with the study by Aslam and Nazim (2016) who said that Indian academia and students at Science and Technology Institution frequently use Facebook. They use it to discuss coursework related issues, keep themselves regularly updated, entertained and link with friends or family members via constant chatting. Hameed, Maqbool, Aslam, Hassan and Anwar (2013) study found a positive significant link between social media, academics and behaviour of university learners in Pakistan since they mostly used the social media. A study done among women in Pakistan by Iffat's (2016) tested the

gratification level among Pakistani women when using Facebook. The study observed that Pakistani women used Facebook more than men because their society did not allow females to mingle with males in gatherings. Thus, Pakistani women mostly used social media to talk, interact and socialize. Most of them used social media in personal rooms and home to enjoy some privacy. This study focused on only women but the current study focused on students.

A study in Nigeria by Omoye (2014) explored how social media is used in advertising. The study noted that social media reduced the problem of distance and time by aiding users who are far apart to communicate, advertise products and give instant feedback via social media because social media are interactive and internet driven. Amadi and Ewa (2018) however showed the effect of social sites on achievement in academics of Nigerian university learners which reduced their cumulative grade point, decreasing the durations they used on their studies and distracting them when they were attending their library and lecture sessions.

In addition, the study by Moshi, Ndeke, Asatsa and Ngozi (2018) showed that social media had key effects on the study habits of learners in Tanzania because learners were the biggest set of people in the society who had been affected greatly by social media since they could not do without smart phones, internet and other devices. Social media had made learners to be less productive since guardians and tutors could not restrict internet and smartphone usage by students. The irresistible attraction to social media had taken the study time of learners. They used the sites to chat with friends, family members and download materials from the internet hence wasting their study time. This study reported rapid interest towards drug abuse among students as another negative effect of social media.

A study by Mutua (2011) opined that over 35% of youths aged 7 to 24 years in the three main East African nations had access to internet. The findings showed that Kenya led the region in internet access with 49% followed by Tanzania at 30% and Uganda at 26%. Their research concurred with the study in Kenya by Koross and Kosgei (2016) who observed that social media negatively impact the communication and studies of Kenyan youths in public university since they use it more than radio, television, newspapers and face to face interaction. A study in Mombasa County in Kenya by Amukune (2013) showed that a strong correlation existed between using social sites and university students' academic performance in the county. Whereas a number of studies in East Africa were done in universities, this study was done in TTCs. It agreed with the Internet World Statistics report of the year 2020 on the use of internet in Africa which showed that the use of internet in Kenya was 85.2% as seen in appendix seven (Internet World Stats, 2021). Table 1.1 provides the report by Social Media Lab Africa of 2019 (SIMElab Africa, 2019) on Kenyans use of social media.

Table 1.1: Use of Social Media in Kenya

Type of Social Media	Percentage
WhatsApp	88.6%
Facebook	88.5%
YouTube	51.2%
Google+	41.3%
Instagram	39.0%
Twitter	27.9%
Yahoo	18.6%
LinkedIn	9.3%
Snapchat	9.0%

Source: Social Media Lab Africa (SIMElab Africa), 2019

According to this report of 2019 by Social Media Lab Africa (SIMElab Africa, 2019), WhatsApp (88.6%) was the most popular social media in Kenya. Facebook which was at 88.5% was second. YouTube and Google+ were the third and fourth widely used social media standing at 51.2% and 41.3% respectively. LinkedIn (9.3%) and Snapchat (9.0%) are rarely used by Kenyans as shown in Table 1.1. It is clear from the report by SIMElab Africa (2019) that 26 to 35 years is the most active age bracket in Kenya since they use all the types of social media listed in Table 1.1. Kenyans who are over 46 years are not active on social media as they used them least. This implies that the age group which is dominant on social media in Kenya consist of teenagers and youths mostly in post-secondary school institutions. This agreed with the report released by Communications Authority of Kenya (CAK) in the last quarter of the year 2018 that showed that by December 2018, about 45.7 million Kenyans used mobile phones to access social media (CAK, 2019). In relation to this study, students in TTCs in Vihiga County fall within this dominant bracket. This justified the need of doing this study among students. In addition to this justification of using social media by learners, it was noted that the performance of learners in academic in Primary Teacher Examination (PTE) was low as seen in Table 1.2.

Table 1.2: Primary Teacher Examination Performance Matrix

Year	Mean	Distinction	Credit	Pass	Referred
2015	4.54	4	522	18	70
2016	4.95	0	331	34	209
2017	5.53	0	200	32	338
2018	5.22	1	217	43	129
2019	4.70	1	298	16	231
Average	4.99	1	314	28	195

Source: Vihiga County Director of Education Office, 2019

Table 1.2 shows the statistics available at the Vihiga County Director of Education (CDE) office for the last five years from 2015 to 2019. It shows that academic performance in PTE in Vihiga County was not very appealing since that the average mean score of the six TTCs in the county was 4.99. Furthermore, the average there was one distinction implying that it was very small. Credits were 314, passes were 28 and referrals were 195. In general, this average performance in PTE the last five years was dismal. This background implies that social media fostered communication and social interaction among various users in different places worldwide. However, most of these surveys which were done on social media were confined to only a single variable or focused on women and students in a small geographical area like a university or secondary school. For instance, the study by Amukune (2013) was only confined to students in universities in Mombasa County in Kenya. However, this study particularly focused on students since little is known on how social media affect studies of students in TTCs. Further, there are few previous evidences on the subject of social sites and academic performance with respect to Vihiga County. It is in view of these gaps that the current study was done. It was consequently worth to address this research gap in order to assess if social media relates empirically with academic performance of students in TTCs in Vihiga County and hence suggest suitable recommendations that can be adopted.

1.2 Statement of the Problem

The main focus of social media is enhancing social interaction among different people. The interactive nature of social media has made it to be incorporated at a very fast pace in the recent past in all spheres of life, education included. The use of social media has been rising exponentially globally, including Kenya as displayed by the data in Table 1.1 and appendix

seven. This rise is common among teenagers and youth most of whom are students at different levels in various learning institutions. Furthermore, records show that the academic performance of students in Primary Teacher Examination (PTE) has been low in the last five years from 2015 to 2019 as seen in Table 1.2. This low academic performance is a waste of resources and creates psychological trauma to students, parents and tutors. The table indicated that on average, only 0.2% of the students scored a distinction. Hence, this study aimed at investigating if a relationship exists between usage of social media by learners in Teachers' Training Colleges and their performance in academics in Vihiga County. The study intended to find out whether this low academic performance was partly caused by the frequent usage of social media and the challenges faced when students are attacked online when on social media with the aim of determining whether this irresistible use of social media encroaches into the study habits and learning time of learners as most of them spend most of their time for studying on social media socializing and communicating.

1.3 Purpose of the Study

Based on the problem stated, the purpose of the current research was to establish whether use of social media affects the academic performance of students in TTCs in Vihiga County.

1.4 Research Objectives

The four objectives which guided this research were:

i) To examine the relationship between types of social media used for communication and the level of academic performance of students in TTCs in Vihiga County.

ii) To establish the relationship between frequency of social media use and the level of academic performance of students in TTCs in Vihiga County.

iii) To determine the relationship between interpersonal relationships and the level of academic performance of students in TTCs in Vihiga County.

iv) To evaluate the relationship between online attacks and the level of academic performance of students in TTCs in Vihiga County.

1.5 Research Hypotheses

The null hypotheses (H_O) which this research tested were: -

H_O1 There is no significant relationship between types of social media used for communication by students and level of their academic performance in TTCs in Vihiga County.

H_O2 There is no significant relationship between frequency of social media use and the level of academic performance of students in TTCs in Vihiga County.

H_O3 There is no significant relationship between interpersonal relationships and the level of academic performance of students in TTCs in Vihiga County.

H_O4 There is no significant relationship between online attacks and the level of academic performance of students in TTCs in Vihiga County.

1.6 Significance of the Study

The study findings would sensitize principals, tutors and students on the effect of using social media on students' academic performance in TTCs. This study may be vital to administrators of TTCs since it could aid them to know the influence of frequent use of social media on

academics of learners. They can then adopt strategies that will foster proper social media use by learners for effective academic performance by forming suitable policies on learners' use of social media in their respective TTCs. It may inform stakeholders in TTCs on the extent learners use social media to communicate or socialize with people in the TTC society like tutors and fellow students especially in their studies. This would ensure best policies on use of social sites are made to aid good interpersonal relations among learners thus attaining the first Kenyan national goal of education of fostering nationalism as pupils can relate socially positively with others in the society on social media (MoE Sessional Paper, 2018).

The results will update educators, students and education planners like Ministry of Education on types of online attacks students face on social media and how they affect their studies. This would aid them to adopt suitable strategies that can enlighten students on how to counter online attacks. It would be a useful source of reference to future researchers who might study further the influence of social sites on academic performance in TTCs in Vihiga County and other regions. It is hoped that the findings of this survey would add to the existing body of knowledge on social media and academic performance of students in TTCs.

1.7 Assumptions of the Study

Assumptions are issues that are out of the control of the researcher (Marilyn, 2013). It was assumed that students in TTCs had phones that could access social media and had the ability to use them to interact socially as that they started using social media in secondary school. It was assumed that the informants were truthful and responded accurately and honestly to the research tools given to them. It was assumed that the data obtained from the tools showed the views of informants on what they thought was the social media impact on academic

performance of learners. It was assumed that the data got from students was reliable and that it gave a representative picture of the topic being studied in the county. It was finally assumed that the social environment that foster good academic performance among the students involved in the study was similar.

1.8 Scope of the Study

Scope is the boundary set by the authors themselves consciously (Theofanidis & Fountouki, 2019). Though the area of social media is very wide, the study mainly focused on examining its influence on performance of learners in academics in TTCs and not on other students like teenagers and children in Vihiga County. The issues of social media that were examined are type of social media; frequency of using social media; interpersonal relationships; and online attacks. The study was done in TTCs and not in other institutions of learning like universities, polytechnics, schools and others. Further, the study did not apply to students at other levels of teacher-education like universities which train secondary school teachers.

1.9 Limitations of the Study

The study was not generalized to be representative of the whole nation as first year students only were considered in the sample size and it was further limited or focused on one county, that is Vihiga County. This study limited itself to five social media sites namely: Facebook, WhatsApp, Twitter, YouTube and Instagram since types of social media are many. Internal end of term examination used was not a national standardized measure of performance in academics. Only principals, tutors and students were involved in the study. Only students and tutors in session in TTC at the time of the study were involved. Those absent and those

who had completed their studies at the college were also not included in the research. The research only utilized questionnaire and interview schedule as research tools. The researcher did not have control over the information which the informants chose to give or withheld.

1.10 Theoretical Framework

Technological determinism theory by Marshall McLuhan (1964) guided the study. It holds that technology and specifically media decisively shapes the way people think, feel, act and how societies work and organize themselves. McLuhan linked media technology to its effect to society. He said that all technology is communication; an extension of ourselves that aids us to reach further through time or space. The theory's proposition states that technology is key to society. The series of invention and use of technology influences the direction and pace of social change. Social changes are caused by technological revolutions. Hence in a nutshell, technological determinism gives the relationship between the prevailing technology and the main aspects of a society as argued by Burnett and Marshall (2003). The theory holds that a society's technology drives the development of its social structure and cultural values. This means that we live in a technology determined society because the flexibility of technology has introduced new ways of interacting and sharing data.

In this study, social media was the technology that was considered while the influence of technology on society was its influence on learners' academic performance in TTCs in the county since technology directly varies the way users communicate and relate globally. For instance, social media has penetrated in all aspects of human life including students'

academics. The rapidly varying social media has made students to use various social media like Facebook, WhatsApp, Twitter and others to enhance their academic performance.

Smith and Marx (1994) assert that some of the tenets of technological determinism theory are: focusing on technology as the key tool or equipment of social change; invoking the ideas of determinism and technology as well as their conjunction; and that technology determines a lot in the contemporary society. This theory is both objective and subjective. Furthermore, this theory gives the effect of technology on interpersonal relations and it becomes more plausible when the time frame is longer. Selwyn (2012) argued that this theory has some limitations as it attempts to explain the relation between technology and society. For instance, according to Chandler (2002), it has specifically been criticized heavily for being simplistic, reductionist and ahistorical and hence it has lost most of its credence. Thus, this theory is not concerned with tradition, history or historical development because its scope is limited to the local and small time levels. The other challenge of this theory to be the power of technology to determine a lot in the contemporary society is a characteristic of only a specific historical period.

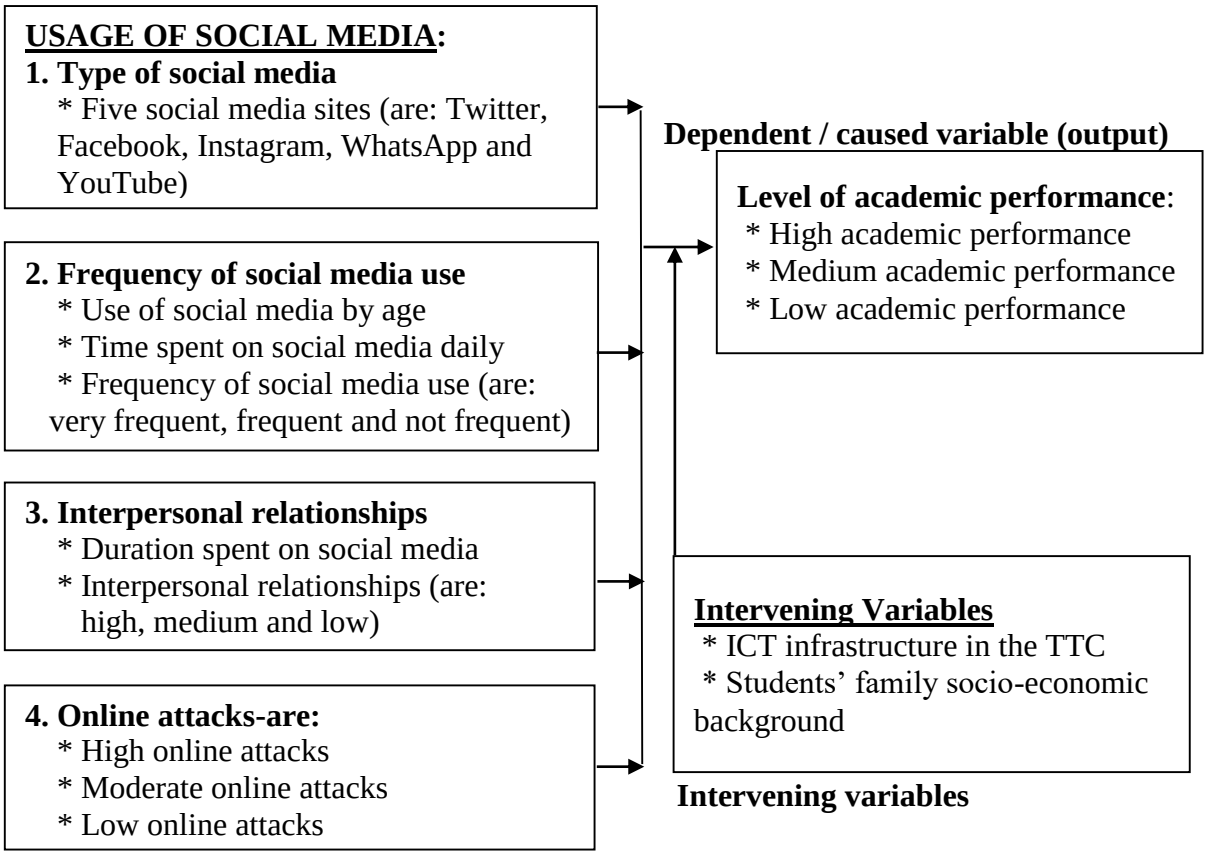
Nevertheless, despite these limitations of this theory, it was still adopted in this study as a result of the unique relationship between technology and society which it theorizes. It was suitably found apt to guide this study due to the strong relation it posits between technology (in this case, social media) and the social changes they bring (in this case, its impact on academic performance). The theory informed the present survey in that when applied to the realm of social media, it promotes performance of learners in academics in TTCs. It is

paramount for learners to adopt correct kinds of social media for their academic achievement so as in to be at par with other learners globally. This theory was ideal for the study based on its theoretical underpinnings that are related to social media which have affected all aspects of the society including academic achievement. The researcher therefore found this theory to be suitable to guide this research in order to address the gap of the impact of social media on performance of students' in academics in TTCs in Vihiga County.

1.11 Conceptual Framework

A conceptual framework is a section of a study which emerges from a theoretical framework to give the basis or foundation of a research problem of a study (Kumar, 2014). Kivunja (2018) noted it is the thought of a researcher that involves a conceptualization of the whole study logically right from identifying the study topic to the conclusions to be made. Hence, a conceptual framework is a theoretical layout that is usually expressed abstractly using a word model. It is a basis for any theory that is expressed abstractly using word models. It is a set of ideas that are defined and organized systematically to give an aim, a reason and an instrument of integrating and interpreting information. In this regard, Figure 1.1 shows the conceptual framework that was adopted in the present research.

The conceptual framework adopted in this research conceptualized how the various aspects of social media influence students' academic performance in TTCs in this county. The conceptual framework was developed from the overarching study objectives, the theoretical framework and the reviewed literature. The independent (causative), dependent (caused) and intervening variables are shown in Figure 1.1.



(Source: Researcher, 2020)

Figure 1.1: Conceptual framework of the study

In this conceptual framework, the one-way arrow showed a direct causal influence. The causative variable was social media usage. Its dimensions were types of social media used for communication, frequency of social media use, interpersonal relationships and online attacks faced by students. Type of social media referred to communication media used by students. This study used five social media sites namely: WhatsApp, Twitter, Facebook, YouTube and Instagram. Frequency of social media use was deduced from the number of hours used per day by students on online activities like interacting socially on social media. It was categorized as very frequent, frequent and not frequent. Frequency of social media use was furthermore measured by the number of times learners frequent social media daily

to interact or relate with others. Online attack was grouped as high, moderate and low online attacks. Interpersonal relationships referred to the type of social relations that exist when students relate socially using social media. It was grouped as high, medium and low interpersonal relationships.

The caused variable was level of academic performance. It was measured using performance of students in one end of term examination. As such, the scores they got in their end of term examination was used. It was operationalized as high, medium or low academic performance. In this study, it was possible that the key aspects of social media affected the performance of learners' in academics. The figure furthermore shows the two intervening variables that affected the study. They were: socio-economic background of students, ICT resources in the TTCs and government policies on ICT. The intervening variables were controlled by keeping or holding them constant for effective findings to be got since they had already been predetermined based on the suggestion by Best and Kahn (2006). The effects of intervening variables were likewise reduced in this study during sampling by randomization of the selected sample. Best and Kahn (2006) argued that randomization lower the effects of the intervening variables by ensuring that the link between the various variables was not due to chance.

1.12 Operational Definitions

Academic performance: It is the academic score attained by students studying in TTCs.

Frequency of social media use: Refers to the time or number of hours spent by students in TTCs in Kenya daily on social media.

Interpersonal relationships: Refers to the social online activities that students in TTCs in Kenya engage in social media like socializing.

Online attacks: It is the willful infliction of injury, pain, harm or deliberately repeatedly threatening / harassing a user using online verbal attacks via electronic device.

Principal: The teacher heading a Teachers' Training College.

Social media: Refers to technological media used by students in Teachers' Training Colleges in Kenya to transmit information.

Student: A person being trained in a TTC to become a professionally trained teacher who can teach in a primary school in Kenya.

Teachers' training college: Post-secondary school institution where students are trained to become trained and professional teachers who can teach in any primary school in Kenya.

Tutor: Teacher / trainer / lecturer who trains students in a TTC.

Types of social media: Refers to the kinds of online sites used by students in TTCs in Kenya to share issues. The five social media used in this study are WhatsApp, Twitter, Facebook, YouTube and Instagram.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter focused on the types of social media used for communication and academic performance. It was followed by a section on frequency of social media use and academic performance. Literature on interpersonal relationships and academic performance was then reviewed. Literature on online attacks and academic performance was then presented. This review was done according to the four research objectives stated in chapter one.

2.2 Use of Types of Social Media and Academic Performance

Various scholars have defined social media differently. According to Lenhart (2007), social media refers to online sites where users make profiles and build personal networks that connects them with others. Social media are internet based services like Facebook, MySpace and LinkedIn which aid users to create public or semi-public profiles, make social network links with others, share, view their profiles and go through their contacts and those of others in the social network whom they can connect (Boyd & Ellison, 2008). Chiu, Cheung and Lee (2008) said social media entail representing profile data of users like name, age, gender and marital status that are linked to other sites. Pantic (2014) said social media are computer-made societies where users make public profiles and friends interact on mutual interests.

According to Almarabeh and Sulieman (2019), social media are websites that aid users to express their opinions, interests, experiences and communicate their thoughts with others. Similarly, Onwuegbuzie and Leech (2004) said social media are web-based communication sites that give its users interactive features on the internet via instant message, posting snaps and offline texts. It also facilitates job creation and marketing of various services or products. In summary, social media are all online communication sites like WhatsApp, Twitter and others that allow the initiation, building and sustaining of online social relations with other users. Thus, social media is the newest form and most influential part of technology.

Types of social media used currently for communication globally by various groups of users have risen rapidly in the recent past. This shows that social media is a vital tool among people more so in relation to communication. Social media fosters two-way communication among its users since people use its interactive nature to engage other users (Omoye, 2014). Social media hastens communication by changing the mechanisms of social interaction like mode and language of communication. For instance, it has varied the communication mode from oral to online communication. This shift in mode of communication has catalyzed the use of "*sheng language*" mainly among youths hence shaping the current generation of youths.

Social media has undergone dramatic changes since its inception. Carly and Anna (2016) said email was the preliminary social media to be used. Chatrooms, instant messaging and instant communication platforms like online live journal and blog sites were developed in the late 1990s. Carly and Anna (2016) held that the social media used to communicate that followed in the early 2000s included Facebook, MySpace, Instagram, LinkedIn, Snapchat

and Twitter. The data reported by Mediabistro (2014) showed that the top ten social media used for communication were Tencent QQ, Facebook, WhatsApp, TencentWeibo, Wechat, Ozone, Google +, LinkedIn, Twitter and Tumblr. As such, the social media types utilized for communication by learners in TTCs was an area of interest in the present research.

Bozkurt, Karadeniz and Kocdar (2017) surveyed social sites as communication, interaction and learning environment among Turkish distance education learners at Anadolu University. They used quantitative cross-sectional survey research design. Data was gathered using an online questionnaire issued to students via the student portal. Descriptive and correlational statistics were used to analyse data. They noted that social media was used for administrative and student support services at the university. It was used administratively by the university to get feedback from students so as to know their feelings by analyzing their reactions, make announcements, communicate with students and run university marketing campaigns. Social media was likewise used by learners to keep in touch with the college, communicate among themselves and connect with friends or family.

Learners reported that they preferred to use are Facebook, Twitter, YouTube and Instagram in that order (Bozkurt, Karadeniz & Kocdar, 2017). The most popular site was Facebook. The students used many sites for making inquiries from university administration, social networking, talking with their parents, siblings, friends, fellow students and being in touch with other people in the society. The survey showed in addition that there was a significant link between age, gender and communication among distance education students. The outcomes of this study concurred with the argument made by Rap and Blonder (2017) which

reported that social media are used for administrative purposes and more so to hasten communication in some learning institutions. In this regard, the aspect of using types of social media to attain academic performance was a gap to be researched on in this study. Gupta, Singh and Marwaha (2013) noted that most distance education learners used various social media like Facebook for sharing information and personal interaction.

The study by Iffat (2016) explored the level of gratification among Pakistani women as they used Facebook. It was a quantitative study that used convenient sampling design. Data was got using a close-ended questionnaire from 500 female students of Fatima Jinnah Women University and International Islamic University (Female Campus). The results suggested that Facebook was an integral part of the life of Pakistani women since many of them use it many times daily more than men for information, interaction, communication, escapism, activities for passing time like searching profile of celebrities, playing games or online shopping. They view it as a simple, convenient and easy way of communicating and strengthening their links. Many women use it in personal rooms and at home for privacy. This agrees with the views of Manasijević, Živković, Arsić and Milošević (2016) who argued that learners utilize social media in their learning process to collaborate, communicate and interact with others.

Aslam and Nazim (2016) did a study on social media and information professionals in library and information service in India. Stratified random sampling method was used. Informants were given questionnaires via Facebook, e-mail and Google+. This study showed that social media is a medium of communicating with one another and sharing interests, experiences and information. The findings showed most people login daily to Facebook followed by

Twitter, Google+, MySpace, Fliker and Bebo. The users disclosed that they login to social media to be updated, pass information and talk with other people like friends and family members via chatting. Archana and Jyotsna (2015) agreed with these outcomes by noting that Indian learners are heavy social media users like Google+, Myspace, gaming sites and others. The information they share with other users range from highly personal to academic issues of the users. This implies that social media is one of the biggest platform for sharing real time information in the world.

Hameed, Maqbool, Aslam, Hassan and Anwar (2013) studied the impact of social media on studies and habits of Pakistani university learners. Descriptive survey design was used. Data was got from 300 university students via questionnaire. The study showed that Twitter and Facebook were mostly used by the university students to get in touch and talk with their family members and colleagues. Literature has shown that the largely utilized social media in higher education to shares information was Facebook (Junco, 2015). The study by Shukor, Musa and Shah (2017) discussed the victimization of Malaysian ladies and children on the internet from a legal perspective. The study noted that WhatsApp was the favourite social site in Malaysia used to spread news quickly, cheaply and easily as ideas are more contagious in larger groups compared to traditional means. For example, Pagoto, Waring, May, Ding, Kunz, Hayes and Oleski (2016) said social media are used by patients and health care givers in the health sector to give support or share information on health conditions. This study thus specifically explored the use of types of social media and academic performance of students.

Another scholar who reported about various types of social media was Omoye (2014) whose study explored how new media technologies are utilized in advertising practice in Nigeria. It used descriptive survey research design. Simple random sampling method of probability sampling was used to pick 100 Nigerian advertising practitioners from 20 advertising firms registered with the Association of Advertising Agencies in Lagos. Questionnaires were used to get from informants. It noted that social media were new forms of digital technology like Facebook, Twitter, Blogs, YouTube and etcetera. They were used in the advertising industry for communication via internet advertisement and texts via mobile phones other than using traditional media like televisions, handbills, newspapers and others. This study reported that social media removed the problem of times and distance by helping people who are far apart to communicate, give instant feedback via social media and advertise products. This is in line with Boyd and Ellison (2008) who asserted that social media are internet based services for communication like Facebook, MySpace, LinkedIn, Sugababes and Hyves.

Moshi, Ndeke, Asatsa and Ngozi (2018) explored the effect of using online media on the habits of Tanzanian secondary school learners in Moshi Municipality. It used mixed methods approach. Data was obtained by giving learners and teachers questionnaires. Education officials, parents and principals were interviewed. Quantitatively and qualitatively data was gathered to answer the study questions. It was noted that the most favourite online site used by these students were Facebook and WhatsApp. The other sites which they used but not frequently were Twitter, Skype, Instagram and LinkedIn. It noted that most learners used social media to talk and be in touch with family members and long-time friends. Similarly, a study by Mutua (2011) said that over 35% of youths aged 7 to 24 years in Tanzania, Kenya

and Uganda access internet. The findings showed that Kenya led in internet access with 49%. Tanzania was at 30% and Uganda at 26%. They spend most of their time on online media for surfing internet, communication, entertainment and listening to music.

Koross and Kosgei (2016) surveyed the role of social media on learners' unrests in Kenyan public universities. It used content analysis design. It showed that social media has impacted on the Kenyan society by shaping the mode of communication more so among youths since social media is the widely used communication mode compared to newspapers, radio, face to face and television. The study noted that the main social media used for communicating or socializing by most Kenyan public university students are Facebook, YouTube, Instagram and WhatsApp. The study noted that the social media which were previously used strictly for socialization are presently being used by these students as sources of information and so they play a big role in current social and political mobilization in universities. This literature shows that a lot has been done regarding types of social media used by various people to enhance communication globally. However, there exists a gap in literature in relation to the same issue in TTCs in Vihiga County in Kenya. Thus, this gap in literature was addressed by objective one which examined the types of social media students in TTCs in the county use to communication and their effect on their studies. End of term scores were used.

2.3 Frequency of Social Media use and Academic Performance

Frequency of social media use is best measured by the number of hours used on online events on social media. By extrapolating from the article published by Efstratia and Martijn (2016), frequency of social media use was defined in this study as the time (or number of hours)

spent per day by informants on online activities in social media like Hyves, Facebook, Twitter, Sugababes, Myspace or dating sites (like Relatieplanet or Lexa). Users are currently moving with present trends in the society by using all forms of social media to foster interpersonal relationships and social interaction so as to survive in this ever dynamic and competitive world. The ability of social media to enhance interaction help people to link and share information with other users in ways that raise the social nature of using technology.

Carly and Anna (2016) argued that social media are online interaction based virtual societies or networks where online relations are created or nurtured by allowing people, organizations and communities to create and disseminate content generated by users like pictures, videos, memos, texts and profile pages. This build up long term relations between individuals and groups. Social media is currently taking a big part of all online activity. For instance, Hunter (2012) said Facebook is the biggest and most widely used online site globally since its active monthly users by the end of 2012 was one billion. The data by Mediabistro (2014) showed the active daily number of social media users. It showed that the daily number of users using the first ten mostly used social media by January 2014 rose to over 4.545 billion. Ten most frequently used social media are Facebook 1.184 billion, WhatsApp 816 million, Tencent QQ 632 million, LinkedIn 400 million, Google+ 300 million, Wechat 272 million, Ozone 259 million, Twitter 232 million, TencentWeibo 230 million and Tumblr 220 million.

People spend many hours immersed in social media. For instance, the data by Mediabistro (2014) showed that the average time spent daily on online media by users from some nations in the world by January 2014 was 2 hours 43 minutes. The data showed that the nation that

led in the world on using social media was Argentina as its spent over 4 hours daily. Japan was the least as its spent about 0.8 hours daily. These rates imply that the current generation often talk and relate with others using online sites. Pagoto et al. (2016) said users of social media in the past were emerging adults but now they are used in the world by people of all gender, ages and areas of residence with adolescents, teenagers and youths being the major users. Duggan (2015) noted many youths use many social media. Rosen (2011) noted that people born from 1990 to 1999 spend nearly over 20 hours in a day on online social sites.

Currently eight to eighteen year-old youths use about 7 hours 38 minutes on entertainment daily. It is the same time adults use per day at work. Duggan (2015) said there is a significant rise in online sites use by American teens as over 75% of them own cellphones. A study of over 25 000 nine and sixteen year olds from 25 European countries noted that most underage children use online sites despite the stated age limit of using the sites and lack of digital skills to use social media safely. Dagan and Beskin (2015) said that social media like Facebook and others aid users to comment on pictures and videos shared. Duggan (2015) noted that most adults in USA use internet with 62% of them using Facebook as their major online site. The rate of social relations via social media on a daily basis was 94.8% meaning it was very high (Li, Lai & Zhang, 2015). Shukor, Musa and Shah (2017) said over 50% of Malaysian students spend at least 4 hours daily on social sites. Thus, they spent about 28 hours a week on social media. This implies that the new generation is really using social media globally.

Education and scholarly activities are presently reaping greatly from social media as learners at all levels of education are using it. For instance, social media has enhanced various types

of education like distance education. It has masterminded the getting of information from teachers, friends and experts both locally and internationally unlike in the past. Studies of students has besides been affected positively and negatively by social media. For example, Gupta, Singh and Marwaha (2013) explored the link between social media and academics of Indian distance education learners studying management courses online. A questionnaire was emailed to them. The study noted that learners use social media like Twitter, Facebook, Skype, Google groups and Blogs for learning. They showed that social media tools like chatrooms, video conferencing, hyperlinked Web pages, live Web broadcasts, Bulletin boards, instant messaging and others were being used frequently to give interactive learning.

The survey by Poellhuber and Anderson (2012) examined how distance students use social media for collaboration. They reported that students have developed interest in utilizing social media tools like social networks, photo sharing, sharing videos, podcast, virtual world, blogging, web conferencing, Twitter, wikis, online portfolios and bookmarks for educational purposes. Frequent social media use motivate students to learn as Mason and Rennie (2007) said it encourages virtual personal interactions. Veletsianos and Navarette (2012) did a study to know students' events and experiences on social media as a formal learning environment. They said that most teachers were widely using social media as a blended formats of learning to interact with their students in class with online video being the most frequent utilized tool.

Jain, Verma, Verma and Tiwari (2012) study sought to know the effect of social media on enhancing learning. It noted that learners chat frequently with peers to get knowledge. Other scholars like Yan (2019) studied the perceptions of students on groups in Facebook and their

effectiveness on improving writing and teaching. They observed that learners perfect their writing skills, get more vocabularies and minimize mistakes in spelling via using social media frequently. This outcome was further buttressed by the survey on the impact of social sites on families, children and teenagers (O'keeffe & Clake-pearson, 2011). It showed that frequent use of social media aid learners to link with their colleagues to do class projects and assignments. This was in line with the survey by Salvation and Adzhruddin (2014) that explored the impact of online sites on academic achievement of Malaysian learners. They said that learners frequently form discussion groups to share views, talk with their tutors and friends when asking assignments on social media.

Aslam and Nazim (2016) study among Library and Information Services professionals from Science and Technology Institute said that Indian learners share issues related to coursework on social media. The impact of online sites on academic performance and habits of university Pakistani students was likewise examined (Hameed, Maqbool, Aslam, Hassan & Anwar, 2013). It noted a significant positive link between online sites, academics and habits of learners since university students mostly use these sites frequently. It was noted in the study which analysed the influence of using social sites on the learning of University of Ghana students that most students use it frequently for chatting, downloading and sending pictures / videos but very few use it for studying (Kolan & Dzandza, 2018). Those who use it for studying only use it to pass knowledge to others. Although the impact of frequent use of social media on students' academic achievement cannot be disputed when used judiciously, these studies never focused on TTCs. This became the focus of the current research.

Other surveys have shown that frequent use of social media can be detrimental to students' studies in spite of the gains of social media stated above. It was for instance found out that students spend a lot of time online than on studies. Maya (2015) studied the social sites effect on career interest, achievement, self-perceptions and academic performance of black students. It was noted that its use led to lower performance in academics. Social media divert or distract learners' concentration and attention on learning by shifting it to inappropriate and non-academic evens like meaningless and valueless chatting (Kuppuswamy & Shankar, 2010). In a nutshell, these studies and others have unequivocally indicated that use of social media pose a challenge to learners' learning if keenness is not observed (Kuppuswamy & Shankar, 2010; Osharive, 2015; Maya, 2015).

The other challenge of social media addiction is its effect on the studies of learners. Mohd Nawi and Chy Ren (2014) examined the negative impact of Facebook by investigating its addiction among women as users of online site. It was noted that addition to social media make learners to performance poorly in academics. Acheaw and Larson (2015) explored the aspects influencing the use of social sites by Jordanian university learners. They showed that the extent of using social sites by learners in Jordan was high. They noted that the addictive use of social media significantly affected their grades since they often use it when they were doing assignments or when in class studying. This lowers their concentration or academic performance. The same was also examined in the present research. This was in tandem with the reported that social media affects the behaviour and studies of University of Pakistan students (Hameed, Maqbool, Aslam, Hassan & Anwar, 2013). On studying the time distance education students spend online, Bozkurt, Karadeniz and Kocdar (2017) said they stay their

lengthy hours daily. Length of using social media showed that social media are vital in the routine life of many students since they incorporated social media in their daily social lives.

Overuse of social media also causes poor performance in examinations. Owusu and Agatha (2015) examined the effect of social sites on Ghana tertiary learners' academic performance. They opined that learners grossly used them to chat and download contents. This has affected their studies negatively. This result corroborates the result by Osharive (2015) who saw that lack of concentration on learning due to using social media make students to fail in their examinations. The study by Khan (2010) showed that online media is bothersome to learners' learning as they mainly use it for other things and not for studies. Moreover, social sites like WhatsApp hindered studies of Ghanaian learners by affecting their concentration in class during learning (Owusu & Agatha, 2015). The title of their study was effect of using WhatsApp Messenger on performance of Ghanaian learners in Tertiary Institutions.

Some surveys also show that social media has affected the use of language by students like English, Kiswahili and even mother-tongue. The survey on the need of safety consciousness on social media among youths for example found out that it affected the usage of English by students since they used short-form when talking with their peers, unconsciously got used to it and then replicated the same mistake in examinations (Obi, Bulus, Adamu & Sala'at, 2012). The future generation may end up accepting this problem as a norm if it is not handled on time. Mingle and Musah (2015) study said that most Ghanaian senior high school students faced negative effects in their studies like poor spelling in grammar, submitting assignments late, poor academic performance and limited study time due to using social media frequently.

Amadi and Ewa (2018) studied on social media and performance of students in academics at River State University in Port Harcourt Nigeria. The research design used was ex-post-facto (or causal comparative). It noted that social media affects academic performance of Nigerian university students negatively by reducing the time they use on studies, reducing their cumulative grade point and distracting them during library or lecture times. Balogun, Awodele, Bello, Oyekunle and Balogun (2017) study which said that many undergraduate university students in Nigeria used more time on social sites than in any other activity besides sleeping hence leading to poor academic performance. Balogun showed that WhatsApp and Facebook were the frequently used social media by these university learners.

Moshi, Ndeke, Asatsa and Ngozi (2018) said online sites affected learning behaviour and studies of Tanzanian students since they were the main users in the society who had greatly been affected by social sites as they cannot do without cellphones, internet and other gadgets. Social media has made students not to be productive hence making it hard for guardians and tutors to monitor the use of smartphones and internet by learners. The irresistible attraction to social media affected the time of learning and behaviour of learners. They used the sites to frequently chat with friends, family members and download materials from the internet hence wasting their study times. This study noted that another negative impact of social media on the studies of learners was the rapid rise in drug abuse among students.

The study by Koross and Kosgei (2016) opined that social media impacted the learning and communication of Kenyan youths like public university students since they used it more

than television, newspapers, face to face and radio. The study of the effect of browsing social media on behaviour of learning of university students was researched by Amukune (2013) in Mombasa County in Kenya. It showed that many learners in universities in the county use Facebook actively. It showed that a strong link existed between browsing Facebook and the academic grade achieved by students. According to the report by SIMElab Africa (2019), most Kenyans aged 26 to 35 years mainly use Facebook, WhatsApp, LinkedIn, YouTube, Twitter, Yahoo and Google+. The sites which are most popular among Kenyans of 14 to 25 years are Snapchat and Instagram. All these social media sites are rarely used by Kenyans of over 46 years. This implies that teenagers and youths make the most dominant age group on social media in Kenya. Further, Kenyan men generally lead in using all social media sites compared to women. Students in TTCs fall within this dominant bracket hence justifying the need of conducting the study among students in TTCs in Vihiga County.

Although some studies have reported the merits of using social media on learning of learners, it is vital for educationists to examine their negative effect on education because the studied reviewed clearly showed that social media affects students' academic performance globally, Kenya included. However, limited scholarly work regarding social media use and learning of students in Teachers' Training Colleges with particular reference to Vihiga County in Kenya was the key concern of this research. In this regard, this research addressed this issue via the second objective that aims at establishing if a relationship existed between frequency of social media use and the level of academic performance of students in Teachers' Training Colleges. The results of the end of term examination were used.

2.4 Interpersonal Relationships and Academic Performance

Social interaction on various social media sites are a current practice in the society. The kind of social interaction on social media is best seen by the behaviour and pattern of interpersonal relationships among users on the sites. Social media enhance social relations by aiding users to form online groups that aid them to collaborate, connect, interact and communicate online. This hastens social relations among many people worldwide by defeating regional and racial boundaries thus opening up the world and reducing it into a global village (Cutlip, Center & Broom, 2006). Various organizations and individuals use social media as sites for interacting and reaching out to people. Social media do so by giving users a platform to socialize with others online through sharing personal information and knowledge on their social media. A systematic review showed that Facebook gives the convenience of higher engagement as it gives the merit of raising interpersonal relationships among users (Chugh & Ruhi, 2017).

The rate of social interaction on online sites is on the rise because social media are interactive online sites that foster user to user interactivity as they are more social and personal than old media. For example, Annapoorna, Reshma and Sawad (2015) said this in their study which noted that the effect of social media on youths' life is high as many of them are moving fast to social media from old media like viewing television and listening to radio. This is because the contents on social media are availed on demand via internet on electronic devices. Other users can view the contents on any device and interact with it in real-time by commenting and sharing it online with other people. The ability of social media to allow interaction aid people to collaborate, share information and link with others. Social media has become popular as it is taken to be an easy way of connecting in the world (Lester & Perini, 2010).

Acheaw and Larson (2015) study was designed to explore the issues influencing social media usage by Jordanian universities learners. It utilized mixed method approach. Interview and questionnaire were applied to gather data that was analysed quantitatively and qualitatively. It was noted that the use social media to enhance social interpersonal relationships was high among learners in universities in Jordan. These learners used social sites to foster their social interaction by socializing with other society members like friends, siblings and parents. Al-rahmi, Othman and Musa (2014) noted in their study that Malaysian learners in institutions of higher learning used social sites frequently to socialize or relate with others for academics. The study focused on usage of social media to promote learners' studies in higher education in Malaysia via collaborative learning. Shukor, Musa and Shah (2017) showed that social media like Facebook give people a way of strengthening and maintaining social ties that can be used in both social and academic settings. It is therefore used as a unifying force since Siapera (2012) said that it connects users with common interests or relationships.

Social media are thus key sites for socialization globally since according to Marshall (2009), it serves the bonding function by bringing many users who share common values or interests closer together. People are brought together by gathering on online social forums for instance by watching coverage of events like sports, disasters, entertainments, among others. Bozkurt, Karadeniz and Okur (2015) survey the preferences and attitudes of postgraduate learners in Turkey in relation to social media. They observed students sustain their social interaction by being online. That is why the daily social media use rate was 96%. Bozkurt, Karadeniz and Kocdar (2017) said distance education students use social media excessively to sustain their

social relations. The results on the degree of social relations using social media showed that most distance education students use the sites every hour with very few of them connecting few times per day for their social relationships (Bozkurt, Karadeniz & Kocdar, 2017). This implies that the new generation currently use social media for social interaction globally.

The survey by Abdullah, Mariah and Rahmat (2014) focused on the effect of using social sites on the features that enable interaction. It utilized snowball sampling method to sample informants who were active on social media. They argued social media give interactive sites that aid users to interact with others to foster social relations by sharing information related to their experiences and activities in real life. This implies that social media allow individuals to share views, photos, interests and events to be seen by other users in their social network since according to Rodney (2005), social media is interactive in nature as it encourages interactivity and feedback. It can hence be argued that social media are all the online communication web platforms like Facebook, Twitter and others that allow the initiation, building and sustaining of online social relationships with other people.

The study by Archana and Jyotsna (2015) assessed the impact of online social sites on social interaction of college learners in India. Purposive sampling was used to sample learners of 17 to 23 years. Data was gathered using questionnaire. It noted that learners use social media like Facebook and others to foster social interpersonal relationships and to keep contact with their tutors, parents and search old friends. Aslam and Nazim (2016) further indicated that academia and learners in India use social media to keep themselves updated and entertained regularly, to share issues related to coursework and to link with friends and family members

via constant chatting. Jenssen, Klein, Salazar, Daluga and Diclemente (2009) noted many learners spend many hours daily dipped on social media like Facebook to bond with other users. In conjunction with that, this outcome was explored in the present research.

Asad, Anam and Kanwal (2016) surveyed the effect of social media on youth at University of Sargodha in Pakistan. Simple random sample was used to pick informants using Cochran formula (Bartlett, Kotrlik & Higgins, 2001). Questionnaire was used to collect data. Data was analysed descriptively using Statistical Package for Social Sciences Software Version 20 (SPSS). It was found out that students make and join different groups on various social media like Facebook to talk and interact with various people like friends and family members. It was noted that learners utilized social media for learning purposes by discussing various topics with their colleagues. Learners likewise link up with other users to share their comments and ideas by video conferencing.

Iffat's (2016) study was titled social media and gratification of women. It found out the level of gratification among Pakistani women when using Facebook. The study observed that women in Pakistan use Facebook more than men because the male dominated cultural norms in Pakistan hinder various genders from assembling. Consequently, women use social media to communicate with men, socialize with men, develop romantic relations, contact unknown people mostly men, interact and pass time. Many women used social sites in personal rooms and home for their privacy. Balogun, Awodele, Bello, Oyekunle and Balogun (2017) besides said that social media aid users to connect or socialize with people and making new friends.

Amukune (2013) researched on the impact of social media on behaviour of learning of Kenyan university learners in Mombasa County. It adopted a cross-sectional survey research design. Systematic sampling was used to pick students from universities in the county which were grouped as public and private universities to be participants. Interview, questionnaire and documentary search sheet were used to get data. It showed that more than 84% of university students in Mombasa County used social media actively for their personal relations. They login to Facebook consistently to interact and relate with each other and other users like their family members, friends, colleagues and other people in the society.

It is clear from the literature above that social media is used frequently globally by various people to foster interpersonal relationships. However, scholarly data relating to interpersonal relationships and academic performance in Vihiga County was limited. This study intended to establish if using social media frequently by learners for interpersonal relationships impact on their academic performance. The study explored this gap in literature by testing the third study objective which determined the relationship between interpersonal relationships and level of students' academic performance in TTCs in the county using end of term scores.

2.5 Online Attacks and Academic Performance

Social media has impacted all sphere of our lives. For instance, many users use it to interact, communicate, meet new or old friends, do business, learn, access digital academic resources, etcetera. Though social media is a good servant, it can be detrimental. Its users like learners must be cautious of its risks and be keen when using it since despite its life changing impact, the shift to online social interaction has raised many security threats as users are more prone

to cyber-attacks presently than previously. Online attacks are rising in learning institutions due to the incorporation of online learning in these schools. Thus social media is becoming a place for abusive relations although both the victim and offender do not meet physically. There is therefore a need for cyber security due to the rising cyber-crimes. This makes cyber security a key concern for educators. Thus, all people need to be aware of how to protect themselves and their colleagues when they are online on various social media platforms.

Hinduja and Patchin (2010) said online attack is a continuous process of using technological gadgets to intentionally hurt a user by breaching their information system. It is the act of an organization or a person using information communication technologies to enhance repeated threat or pain to a user deliberately (Balogun, Awodele, Bello, Oyekunle & Balogun, 2017). Online attack is a deliberate malicious attempt to illegally access computer network of a victim via a data communication pathway (Almarabeh & Sulieman, 2019). Online attack is defined in this study as the willful repeated use of electronic devices like computers or cellphones by an attacker to do a crime by inflicting injury on a victim. Online attack is a common case on social media that is well known in developed nations unlike in developing nations where its awareness is limited.

Šincek, Duvnjak and Milić (2017) noted online attack was an emerging problematic form of violence globally that is linked to adverse socio-psychological health consequences, offline sexual and physical violence on individual victims and the society at large. Online attacks against social media users occur in various ways like online harassment, defamation, virtual rape, cyber stalking, unwanted pornography, spoofing email and hacking (European Institute

for Gender Equality, 2017; Singh, 2015). The study on the effect of social media on families, children and teenagers established that the hazards linked with social media include privacy concerns, online bullying, Facebook depression, sexting and cyber harassment (O'keeffe & Clake-pearson, 2011). Davies and Cranston (2008) surveyed social media and youths work. They mentioned the prevalent risky criminal activities that are related to social media. They include unsuitable advertising, identity theft, sexual harassment or abuse and fake contacts.

Online attacks occur psychologically unlike ordinary bullying that occurs physically. Online attacks affect the mental health of the person attacked online since the person is told hurtful stuff like sending to them threatening or nasty texts, emails, photos / videos or by accessing their online account to bring trouble (Balogun, Awodele, Bello, Oyekunle & Balogun, 2017). The attacks are done mostly by organized crime unions, virus code writers, hackers, industrial spies, spiteful intruders and vengeful employees. Attackers always want some benefits for disrupting the information of the victim. Online attacks occur if users do not protect themselves, their information or their data assets like mobile phones, computers, laptops and learning management systems.

Rainie, Smith, Funk, Lenhart and Madden (2014) report argued that most of the cases of online attacks occur via social media. Social media has been abused for long since some people use it to perpetuate various illegal criminal activities like cyber bullying, online fraud, pornography distribution, spamming, cyber stalking and others. Cyberbully Resource Centre (2011) report showed that the globe is witnessing a sudden surge in online media use leading to the rising online attacks cases. Liaw (2016) said people who spend more time online are

at a higher risk of cyber-crimes such that the probability of becoming a cyber-crime victim when one spent one hour on social sites is about 64%. It was affirmed that the time spent per day on online activities correlated significantly with the frequent exposure to online attacks (Arafa & Senosy, 2017). Age is besides linked to exposure to online crimes (Winkelman, Early, Walker, Chu & Yick-Flanagan, 2015). The key victims of online attacks are youths, teenagers and adolescents of 12 to 30 years. Most users use sites where online attacks are rampant. They moreover use it to bully other users due to the wide access to high speed internet which gives the attackers a means to commit a crime or inflict harm on others.

Arafa, Elbahrawe, Saber, Ahmed and Abbas (2018) asserted that online attack is emerging as a new type of violence against children and women more so with the rising usage of social media. World Health Organization reported that over 35% of females globally have suffered physical or sexual violence from a close relative or a non-relative (WHO, 2017). Although information about the extent of online attacks among people in various societies is limited, studies like the one by Backe, Lilleston and McCleary-Sills (2018) noted that online attacks are mostly rampant among women, girls and sexual minorities. For instance, a study on over 9000 German internet users found out that online sexual harassment, cyber stalking and cyber bullying were experienced more by ladies than men (Staude-Müller, Hansen & Voss, 2012). A survey done by European Union Agency for Fundamental Rights (2014) in Europe showed that one out of ten females had faced a type of online violence from 15 years of age.

The study by Duggan (2017) which involved over 4 000 adults in USA observed that ladies were prone to cyber harassment than men. Another report by Duggan (2015) asserted that

most of the incidences of online attacks occurred more prevalently in some social media than others. A descriptive research was done to explored the experience and attitude of ladies who use social media in USA in relation to cyber harassment (Winkelman, Early, Walker, Chu & Yick-Flanagan, 2015). Ladies were picked from popular social media. They showed that they got unsolicited sexually pornographic or obscene texts severally on social media from users they do not know. Most victims who face cyber harassment said they feel anxious, sleepless, helpless and lose their appetite to eat due to the harassment. Trauma experienced by such ladies affect their achievements in future badly if not dealt with adequately.

The cross-sectional survey by Marett and Choo (2016) showed that social media was used frequently by most Malaysian adolescent learners in secondary schools. The chances of the learners being victimized when online were very high. Online victimizations include cyber bullying, unwanted sexual requests, harassment and aggression. Thus, school children who frequent social media like Facebook, Instagram and others are at high risk of being attacked online. According to Azizi (2016), most offenders who attacked Malaysian children online were not convicted due to the weak laws that should protect children since Malaysia do not have any specific law that criminalize child pornography unlike other countries like United States, South Korea and United Kingdom. The same was noted in the study by Abdul (2015) which explored whether the laws in Malaysia were adequate to curb pornography.

Balogun, Awodele, Bello, Oyekunle and Balogun (2017) said that online attacks are mainly caused by the activities done on social media, the feeling of being unaccepted among online peers, more time spent on online and constant presence on social media. Shukor, Musa and

Shah (2017) studied the victimization of Malaysian children and women on internet. They said gender, racism, elderliness and disability are some of the factors that bring victimization or abuse of online users. Some people think that the words, photos or videos they post online are simply just jokes and that they cannot hurt anyone. The truth is that verbal, physical or forced sexual assaults on social media hurts. Such online attacks are criminal. Most users do not report online abuse cases since they fear social stigma more so if the offender is a family member. Online attacks cause psychological or mental damage to online users especially the youths (Balogun, Awodele, Bello, Oyekunle & Balogun, 2017).

Balogun, Awodele, Bello, Oyekunle and Balogun (2017) showed that cyber bullying exists among university students since most of them said they were cyber bullied while on online sites. It said that the social media that is mostly used for cyber bullying was Facebook. This means that social media is a catalyst of the rising cyber-crimes cases more so among youths. This concurred with the statistics reported by the National Crime Prevention Council (2014) which showed that teenagers were victims of cyber bullying in the year 2013 with over 80% of them indicating they did not have parental rules on use of internet and they prefer to revenge those who cyber bully them. Very few of them tell parents the cyber bullying cases they face. So, online attacks cause teens to bully each other on social media by taking the bullying that thrives in schools online via sharing shameful photos and videos. Thus, online attacks are enhanced by the high frequency of users on social media.

Hassan, Khalifa, El Desouky, Salem and Ali (2020) did an online study to examine the effect of online violence on the lives of Egyptian women in relation to the various types of online

violence, frequency of occurrence, relation to socio-demographic characteristics and other related factors. Online questionnaires were issued to them via Facebook since it was a very popular social site in Egypt. Facebook groups having many women were selected to attain a high response rate of 72%. The link of the survey was posted by the researcher on the groups and group members were encouraged to respond. The study noted that a very high rate of online violence was reported against Egyptian females. They encounter cyber violence from offenders they do not know when they are on social media.

The main forms of online violence victims in the Hassan, Khalifa, El Desouky, Salem and Ali (2020) study faced on social sites are: getting pictures or symbols with sexual content, getting offensive posts or humiliating comments, getting insulting texts, getting violent or dirty pictures that demean women and getting infected files via e-mails. It was shown that the main effect of online attacks on users were physical, psychological, social and economic like financial losses. The psychological effects of cyber violence which most victims faced include worry, anger, fear and suicidal thoughts. Most victims reported that they dealt with the problem by changing their contact information, blocking offender or posting contents of offenders on platforms. Unfortunately, ladies involved in this study never reported the matter to police. The study recommended the implementation of anti-cyber violence program so as to protect Egyptian ladies from cyber violence since they are highly exposed to cyber-crime.

The findings of the study by Lewis, Rowe and Wiper (2017) noted that most victims do not report cases of cyber violence to security agencies as they do not know the rules governing online attacks as well as thinking their reputation will be damaged when they make the cases

public by reporting them. This was attributed to the conservative nature of our society and fearing to be blamed, shamed or disgraced which emerges after showing family members or friends the cyber-crime faced. Thus, most of the literature available on online attacks like cyber pornography, cyber bullying or harassment came from developed nations like America and United Kingdom with little data from developing nations (Shukor, Musa & Shah, 2017).

Over a third of Kenyans had received online harassment, cyber bullying, trolling, contacted by imposters and personal hate speech (African Development Bank Group, 2016) but little data is available about online attacks in Vihiga County. The drastic global rise in the use of social sites has exposed many users to various types of online attacks when using it because many people spending more time browsing or chatting online. Moreover, surveys available on online violence against users do not commensurate with the spread in the usage of social media because the addictive overuse of social sites can potentiate a new era of online attacks on users (students included). In addition, little information is available on online attacks of students in TTCs regarding use of social media. Hence, available literature needs to be extrapolated to consider the effect of online attacks on students' learning in TTCs. This research investigated the concept of usage of social media on academics in order to find out whether there is a relationship between online attacks faced by students in TTCs and the level of their academic performance using the end of term scores.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter presented the methodology used in the study. It described the type of research design that was used to explain the methodology that was employed. It explained the study area, target population, sample and sampling techniques. Research instruments plus piloting used in the study were discussed in this chapter. In addition, validity and reliability, data collection techniques, mechanisms of data analysis and ethical issues and were discussed.

3.2 Research Design

Research design is the process of gathering, analyzing, interpreting and reporting data in a study (Creswell, 2013). This study used the descriptive survey research design with the aid of mixed methods approach among the three research approaches, that is quantitative, mixed methods and qualitative (Armitage, 2007). Orodho (2009) said this design is used in cases involving exploratory studies that gather data to be summarized, presented and interpreted so as to get data for clarification purposes. According to Yan (2019) the design is good for field studies as it tests the way a given issue in a big population is distributed, is interrelated and the data is obtained using questionnaires mainly. The design was best suited for the study as it was a field study undertaken in the natural setting of a TTC where respondent filled questionnaires and principals interviewed to get data that described some phenomena.

This design was supported by mixed methods approach which uses both quantitative and qualitative methodologies to get qualitative and quantitative data (Shorten & Smith, 2017).

Its choice was informed by the fact that the two methods complemented one another to get the link existing between the variables namely: social media use as the causative variables and academic performance as caused variable leading to drawing of valid conclusions from the facts got based on if the link was significant or not (Creswell & Plano Clark, 2010). The approach likewise allowed use of questionnaire and interview to get data. Thus, qualitative data from interviews and open-ended questions in questionnaires as well as quantitative data from closed-ended questions in questionnaires were triangulation (Armitage, 2007).

3.3 Study Location

The study area was Vihiga County which is 563.8 Km^2 according to Kenya National Bureau of Statistics (KNBS, 2019). It has five sub-counties which are: Sabatia, Emuhaya, Luanda, Vihiga and Hamisi as seen in the administrative map in appendix 12. Its humidity is 42%; temperature is 20ºC to 35ºC and well distributed annual rainfall is 1800mm to 2000mm. The rain makes subsistence farming the key economic activity in the county. Residents lift their economy by doing agricultural activities like rearing livestock, tea and small scale horticultural farming (Maengw & Omboto, 2013) to top-up government efforts of financing their children education. The area has limited natural resources making education the key vehicle for socio-economic mobility. The county was ideal for the study as it had six TTCs which are located in three out of the five sub-counties. The TTCs which were both public and private were easily accessible. The increase in social media use as seen in Table 1.1 in page four and the low academic performance of students in TTCs in Table 1.2 in page five aided in choosing the county as the study area. The area is well covered by Internet Service Providers (ISPs) with 98% of it having network connectivity (Republic of Kenya, 2013).

This good coverage raises the use of social media in the county. Further, the researcher created rapport easily with the respondents due to his conversance of the area.

3.4 Target Population of the Study

Target population are parts of a hypothetical group of people having at least a common trait that aids in generalizing the results (Murphay, 2016). Table 3.1 gives the target population.

Table 3.1: Target Population Matrix

Participants	Target Population
Principals	6
Tutors	100
Students	1,478
Total Target Population	1,584

Source: Vihiga County Director of Education Office, 2022

Table 3.1 shows that 6 principals, 1,478 students and 100 tutors gave a target population of 1,584 from 6 TTCs by the time of the study based on the data at Vihiga County Directors of Education office by the year 2022. From the 6 TTCs, one was public and 5 were private.

3.5 Sample Size and Sampling Procedure

This part gives the sample and sampling procedure that was used in this study.

3.5.1 Sample Size

The sample size used was determined scientifically using the formula developed by Krejcie and Morgan (1970). The formula was:

$$S = X^2NP\ (1- P) \div d^2(N-1) + X^2P(1-P)$$

Where: - **S** = required sample size

X^2 = table value of chi-square for 1 degree of freedom

N = the population size

P = Population proportion assumed at 0.05 to provide maximum sample size

d = the degree of accuracy expressed as a proportion of 0.05

Krejcie and Morgan (1970) table in appendix five was made using this formula. The table was used to get the study sample size. Table 3.2 shows a summary of the study sample size.

Table 3.2: Sampling Matrix

Participants	Target Population	Sample Size
Tutors	100	80
Students	1,478	306
Total	1,578	386

Source: Researcher's Survey Data, 2022

Table 3.2 shows that if the target population of students was 1,478 then the sample size was 306 students. Furthermore, the adequate sample size for 100 tutors was 80 tutors. A slightly higher figure than the one given in the table was used to improve on the precision of the sample to minimize or curb on the sampling errors. Six principals were part of the 386 sample giving a total sample size of 392 informants from the target population of 1,584. This sample size helped the researcher to get valuable information (Martinez-Mesa, 2016). The sample was adequate since a minimum sample of 100 is adequate for a study (Kothari, 2014).

3.5.2 Sampling Procedure

This study having adopted a descriptive research design employed both probability and non-probability sampling techniques to sample TTCs and informants (Kothari, 2014). Probability

sampling procedures used are stratified and simple random sampling due to heterogeneous nature of the target population. Non-probability sampling technique used to give each member an equal chance to be represented in the study was purposive sampling. The sample size in Table 3.2 above was got using the sampling techniques shown in Table 3.3.

Table 3.3: Sampling Technique Matrix

Sample	Sampling Procedure
Colleges	- Stratified random sampling technique
Tutors	- Purposive sampling technique
	- Simple random sampling technique
Students	- Purposive sampling technique
	- Simple random sampling technique
Principals	- Purposive sampling technique

Source: Researcher's Survey Data, 2022

(a) Sampling of Colleges

Table 3.3 shows a summary of various sampling procedures used in the research. Stratified random sampling technique was used to sample all the six TTCs in the county to guarantee equal representation. They were included automatically in the study to form 100% of all the TTCs sampled as they were few. They were stratified into two homogeneous sub-strata of public and private TTCs using stratified random sampling technique as one TTC was public and 5 were private. This made TTCs that would be omitted entirely in the sample by other sampling procedures due to their small numbers are included (Kothari, 2014).

(b) Sampling of Tutors

Purposive sampling was used to pick 80 tutors from the six TTCs since they were in constant direct contact with students daily and so had key information which they would offer. Tutors

were sampled using simple random sampling to avoid bias and ensure that they were represented equally in the sample (Frankael & Wallen, 2010). The desired sample size of tutors in each college was obtained as follows:

$$\mathbf{A = (B \div C) \times S}$$

Where: - **A** = The sample size required / desired in that college

B = The total number of tutors in that college

C = The target population of tutors to be involved in the study (that is 100)

S = The total sample size of the study (in this study, it was 80)

The samples in each TTC were obtained by getting the K^{th} tutor from the tutors' list in that TTC. The K^{th} tutor was obtained by dividing the number of tutors in the TTC by the desired sample size. For instance, if the college had 20 tutors and the desired sample size was 9, then the K^{th} tutor was 2.22. Thus, the sample became the 2^{nd} name on the list of tutors. This gave a statistically significant total sample size of 80 tutors which could give a generalization about the target population of 100 tutors (Creswell, 2013; Orodho, 2010).

(c) Sampling of Students

Students were picked purposively to ensure they were represented well as the study focused mainly on them. The students' desired sample size in each TTC was obtained by the formula used to obtain the tutors' desired sample size. Students in each TTC were then sampled using simple random sampling technique. The words YES and NO were then written on papers to aid in getting the sample size from the two sub-strata by simple random sampling. The papers were folded, placed in a tin, shaken and picked by students randomly. Those who picked papers written YES constituted the sample of 306 students from a target population of 1,478.

(d) Sampling of Principals

All the six principals of the six TTCs were sampled purposively to participate in the study since they hold key supervisory and administrative positions as government representatives in the colleges (Kothari, 2014). They were also targeted since their population as supervisors and managers of TTCs was small. They ensure the national goals of education are achieved in the such TTC as the fifth goal which focuses on promoting social interaction in institutions of learning (MoE Sessional Paper, 2018). They are key in forming policies in their respective TTCs including those that foster positive use of social media for academic achievement of students. The researcher thus assumed they were best placed to give good views on the topic being studied as they were well versed with the daily occurrences in the TTC including the extent of using social media and academic achievement of students. So they were perceived to possess valuable and expert information on this issue as asserted by Nzambi (2012).

3.6 Research Instruments

Mixed methods approach which allowed collection of both quantitative and qualitative data informed the type of tools used. The two tools used to gather data were interview guide and questionnaire. Use of many data collection tools raised validity and reliability by enhancing a better understanding of the study and reducing getting inaccurate results from the tools as study results are affected by the way measuring is done (Neubauer, 2019). Items in the tools were made based on the objectives and nature of data needed. The tools translated objectives to questions. The tools solicited the data needed and supplemented each other to close the

gaps that would be left if only one tool was used by focusing on the interrelationship between both the quantitative and qualitative data.

3.6.1 Questionnaires of Students and Tutors

Questionnaire was used since it was cheap, improves accuracy of answers from informants, saves time, free from interview bias and gets more data from a big sample (Kombo & Tromp, 2011). It had both structured and unstructured items (Jwan, 2010). Structured questions had items from which answers were picked. Open-ended items had questions that did not have multiple choice answers. Quantitative data was obtained from structured questions. Qualitative data was got from open-ended questions. It was issued to 306 students and 80 tutors as they were literate and could write down the information needed. Appendices 2 and 3 show the questionnaires of students and tutors each having 5 parts. Part 1 gave background information of the respondent; part 2 covered responses on types of social media used by students; part 3 elicited responses on frequency of social media use; part 4 gave interpersonal relationships; while part 5 captured responses about online attacks faced by students.

3.6.2 Interview Schedule of Principals

Interview was done verbally where the researcher asked principals questions that gave the views or information that were within the researcher's frame of reference. The three types of interview are semi-structured, unstructured and structured. This study used the structured interview where the interviewer asked all principals the same questions prepared in advance sequentially to gather data (Kothari, 2014). Asking the same questions aided the informants to raise their varied but related perspectives about the questions. Asking same questions also

made it is easy to compare the answers got from principals. This made structured interview more defensible and aid the researcher to make the right judgments. Principals were asked questions face to face in the TTC using the interview guide in appendix four. The interview guide had open questions on social media and students' studies to supplement data got from questionnaires. The interview guide had questions on 4 thematic areas based on the 4 objectives. Between the available modes of interview, this study used personal interview to aid in getting data directly (Chandran, 2004). Before the interviews started, consent to record was got from principals to ensure that all their responses are captured to save the researcher from making frantic brief notes when the interview was ongoing and aided in future review of the study. A smartphone was used to record voices as the interview progressed.

3.7 Pilot Study

Piloting was done before the main study in two TTCs in Kakamega County. It was done to assess validity and reliability of the tools to detected their limitations and ensured they were accurate, appropriate and comprehended by all the informants (Kombo & Tromp, 2011). The piloting TTCs were sampled purposively since the two counties share many similar features. The piloting sample size of 45 respondents was 10% of the study sample size (Ondiek, 2008) consisting of 34 students, 9 tutors and 2 principals. After piloting, the errors noted were corrected before the real data collection by revising or adjusting them accordingly.

3.8 Validity of Research Instruments

Validity is the extent to which a tool measures what it is intended to measure (Gall, Borg & Gall, 2007). Its four types are face, content, construct and criterion validities (Frankael &

Wallen, 2010). The type of validity to be used in any study depends on the research design and the tools used in that study (Cohen & Manion, 2008). Tools in this study were subjected to content, face and construct validities before the real study was done. Face validity on tools was achieved if it appeared valid on its face. The ability of tools to measure given traits was got by seeing. In this study, face validity was attained by checking if the tool measure what it was to measure based on subjective judgment of the researcher and supervisors. Construct validity is concerned with the degree to which a test measures a theoretical construct or trait that is, if the test logically samples content or expected behaviors (Neubauer, 2019). It is the extent to which samples of items are representative of the whole content domain. Traits are given an operational definition in a measurable and observable manner (Mugenda, 2003). Thus, supervisors from the School of Education and Human Resource Development at Kisii University scrutinized the tools for clarity to establish its content and face validities. They identified what each item in the tools measured. Necessary modifications were made on the tools to remove any ambiguities or biasness after discussing the tools with the supervisors.

3.9 Reliability of Research Instruments

Reliability is the degree to which a tool gives consistent results if the same technique is used repeatedly (Mohajan, 2017). Reliability was established by piloting the tools on a population outside the study area but with traits same as the study population to confirm the consistency of the results. Reliability was tested by issuing questionnaires to students and tutors in two TTCs in Kakamega County during piloting at an interval of two-weeks due to the limited time of doing the study. Cronbach's alpha was used to analyse the test-retest data from the two TTCs to determine if the questionnaires were reliable or not. It was used to establish

reliability coefficient because it is the most consistent test of getting the external consistency reliability of questionnaires. Cronbach's alpha coefficient was computed using the formula:

$$\alpha = k/k\text{-}1\times [1-\Sigma (S^2)/\Sigma S^2 sum]$$

Where: - **α**= Cronbach's alpha

k = Number of responses

Σ (S^2) = Variance of individual items summed up

ΣS^2sum = Variance of summed up scores

Cronbach's alpha coefficient shows the reliability of measuring tools. Statistical Package for Social Sciences (SPSS) software Version 20 was used to get the reliability of questionnaires issued to students and tutors by calculating the value of Cronbach's alpha coefficient (α). In interpreting reliability results, Creswell (2014) grouped Cronbach alpha as: <.6=Weak; >.6=Acceptable; >.7=Good; >.8=Very Good; >.9=Excellent; and 1.0 being the biggest alpha coefficient. Plano and Ivancova (2015) noted that if the Cronbach's alpha coefficient is over 0.7, then the reliability of the tool is acceptably adequate but if the value is below, the tool must be re-written. The statistical relationship between the study variables ascertained in students' and tutors' questionnaires were shown in Table 3.4.

Table 3.4: Cronbach's Alpha Results for Students' and Tutors' Questionnaires

Variable	Cronbach's Alpha Students	Tutors	Decision
Type of social media used for communication	0.75	0.84	Reliable
Frequency of using social media	0.81	0.75	Reliable
Interpersonal relationships	0.86	0.73	Reliable
Online attacks	0.76	0.80	Reliable
Average	0.80	0.78	Reliable

Source: Researcher's Survey Data, 2022

Table 3.4 shows the average Cronbach alpha value got from questionnaire issued to students was 0.80 and the one for questionnaire given to tutors was 0.78. This shows that both tutors' and students' questionnaire were reliable and consistent to be used for data collection since the Cronbach alpha values got were reasonably acceptable. Hence, all the items in the two questionnaire were worth of retention. Regarding interview guide, Alshenqeeti (2014) said that its reliability is not certain but it can be fine-tuned to improve it by taking notes, asking non-leading questions, letting principals to clarify their responses after the interview, doing a pilot interview to make the interview guide better and not depending on the information reported during the interview entirely. Thus the reliability of the interview guide was tested to fine-tune it by interviewing two principals during pilot interview for comparison purposes and to ensure that the questions asked were not leading. The researcher was involved actively in the discussion to steer the interview in the right direction by asking specific structured questions and took notes to fine tune the interview guide to improve its reliability.

3.10 Data Collection Procedures

Tully (2011) noted that a research permit should be obtained to be able to carry out a research successfully in Kenya. In this regard, an introductory letter was got at Kisii University to introduce the researcher to National Commission for Science, Technology and Innovation in order to get a research permit to do the study. Permission to visit TTCs was got from the offices of Vihiga County Commissioner and County Director of Education. Permission was sought from principals to gather data in TTCs. All these letters are attached in the Appendix section of this thesis. A schedule of meeting informants in TTCs was made in consultation with the principals to avoid meeting them same day. Two research aids were trained to be

acquainted with the tools to aid in data collection. The colleges were visited on the agreed dates and times to administer research tools to collect data with the aid of research assistants. Delayance of informants returning the research tools on time during data collection was avoided by administering the tools in person to attain a high response rate. Research ethics were observed before, during and after administration of the tools to participants.

The study was done in May 2022 in the fourth week from 9:00am to noon. Questionnaires were issued to students and tutors. Tutors were firstly given the tool and collected later the same day to give them time to fill it at their convenience. It was then given to students with the aid of the research assistant and picked immediately after filling to ensure a high return rate. Interview guide was used to interview principals. Consent was sought to record the interview to ensure all responses were obtained to save the researcher from making frantic brief notes and missing key information. The researcher left with all the responses obtained from questionnaires and interview guide in an envelope the same day. This was because Boynton (2004) said it was appropriate that the filled tools should be picked by the researcher immediately to avoid losing them. The entire data collection process took five days.

3.11 Data Analysis

Data analysis involves applying the right meaning, format and sequence to the collected data (Kumar, 2014). Data collected was analysed both quantitatively and qualitatively based on the four study objectives. Analysis of the raw data gathered started with verifying that the tools were completely filled correctly. Quantitative and qualitative data were analysed separately first as explained below before triangulating them later.

3.11.1 Analysis of Quantitative Data

Quantitative data that deals with numerical and statistical data was analysed quantitatively using SPSS software Version 20. This data was got from questionnaires issued to tutors and students. It was analysed descriptively and inferentially based on the objectives. Descriptive statistics was used to analyse the data numerically using frequency distribution, percentages and presented in tabular forms using frequency tables and graphically using figures like bar graphs and pie charts. This data was also analysed inferentially using inferential statistics. It was used to make inferences or predictions about the entire population by finding evidences that aided in testing (accepting or rejecting) the 4 null hypotheses. Inferential statistics used to test the hypotheses are Pearson Product Moment Correlation, Regression Analysis and Analysis of Variance (ANOVA). The researcher used these 3 correlation statistical tools of data analysis to test hypotheses, make inferences and draw conclusions based on objectives.

Pearson Product Moment Correlation was used to predict if a correlation existed between social media and academic performance of students both in terms of direction and strength. Regression and ANOVA were used to predict the effect of types of social media, frequency of social media use, interpersonal relationships and online attacks on academic performance. The researcher used the Adjusted R Square value and not the R Square value to explain the value of the regression analysis because it tells how well data points fit on a regression line by giving the percentage of variation explained by only the independent variable that actually affect the caused variable. R Square only tells how well data points fit on a regression line

assuming every single variable explains the variation in the caused variable that is not true. Table 3.5 summarizes the data analysis matrix used in the research.

Table 3.5: Summary of Data Analysis

Objectives	Independent Variable	Dependent Variable	Statistical Test Tool
To examine the relationship between types of social media used for communication and level of academic performance	Type of social media used for communication	Level of academic performance of students	- Frequency counts, Percentages, Mean - Pearson Product Moment Correlation, Regression, ANOVA
To establish the relationship between frequency of social media use and level of academic performance	Frequency of using social media	Level of academic performance of students	- Frequencies, Percentages, Mean - Pearson Product Moment Correlation, Regression, ANOVA
To determine the relationship between interpersonal relationships and level of academic performance	Interpersonal relationships	Level of academic performance of students	- Frequency, Mean, Percentages, - Pearson Product Moment Correlation, Regression, ANOVA
To evaluate the relationship between online attacks and level of academic performance	Online attacks	Level of academic performance of students	- Frequency counts, Percentages, Mean - Pearson Product Moment Correlation, Regression, ANOVA

Source: Researcher's Survey Data, 2022

A multiple regression model was used to test each hypothesis being studied. Unstandardized Beta (β) coefficients were obtained from the model for each independent variable. Beta value shows the degree to which the caused variable (academic performance) varies when social

media (causative variable) varies by one-unit. Hence the researcher used unstandardized beta coefficients to show how much the caused variable varied with an independent variable when all the other aspects of the causative variable were kept constant. This regression coefficient gave the expected change in the dependent variable for a one-unit rise in the causative variable. The regression model that was used to test (reject or accept) each hypothesis was:

$$\mathbf{Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon}$$

Where: - **Y** = The dependent variable, that is level of academic performance of students

α = Constant

β_1, β_2 and β_3 = Beta coefficients

X_1 = Types of social media used for communication

X_2 = Frequency of using social media

X_3 = Interpersonal relationships

X_4 = Online attacks

ε = Error term

A negative Beta coefficient value means that as the independent variable rises, the dependent variable reduce but a positive beta coefficient value means that a rise in the causative variable leads to a rise in the caused variable. All the null hypotheses were tested at 0.05 significance level as it is the most preferred level in social science studies (Gunby & Schutz, 2016). The null hypothesis was rejected if the P-value was less than 0.05 leading to acceptance of the alternative hypothesis implying that a significant association existed. If the P-value was over 0.05, the null hypothesis was accepted. Hence it was concluded that a significant association did not exist (Molina & Cameroon, 2015).

3.11.2 Diagnostic Tests

Various tests are used to assess the suitability of the data used to do ANOVA and Regression Analysis in a study. Some of them include test for independence observations, normality test, heteroscedasticity, assumptions of multi-collinearity and homoscedasticity. This study used the multi-collinearity test.

3.11.3 Multi-Collinearity Assumptions Test

Creswell (2014) said that multi-collinearity is a very high level of inter-relation between the variables in a study with the predictor variable effect being inseparable from the dependent variable. In multi-collinearity, there is a predictor variable in a multiple regression model that can linearly be from the other variables very accurately. Hence, a multi-collinearity test indicates whether the regression equation is fine or not. In the current study, assumptions of multi-collinearity were established from SPSS by Tolerance and Variance Inflation Factor (VIF). Tolerance is the amount of variance in the predictor variable that is not accounted for by other predictor variables. Tolerance of a variable is 1^2-R while its VIF is its reciprocal. The common rule of thumb in a linear regression model is that the Tolerance value must be over 0.1 and the Variance Influence Factor (VIF) value must be less than ten for any aspects of the predictor variables (Creswell, 2014; & Cameroon, 2014). Any variable which meets the 2 conditions of the assumption of multi-collinearity is almost a perfect linear combination of the other predictor variables which are already in the model and that it should not be added to the regression equation since it is insignificant. This implies that any VIF value > 10 or Tolerance < 0.1 must be examined for possible multi-collinearity problem (Dhakal, 2016).

3.11.4 Analysis of Qualitative Data

Qualitative data was analysed qualitatively to fill the gaps left by quantitative data. It focused on statements, opinions and observations. The data was analysed thematically by identifying emerging themes from the data got from open-ended items in questionnaires and interview guide. The raw data in the tools was read, notes take and coded by identifying the key issues in the data. Coding entailed describing briefly what was said in the two tools so as to aid in organizing and interpreting the data. Response coding was done at levels of 1 for low, 2 for medium and 3 for high level of link of social media and academic performance. Frequencies of the themes were generated and categorized by making a list of the codes and their extracts. The codes were sorted into broader themes which were interpreted to create meaning in the qualitative data to facilitate thematic analysis. Key themes were got by merging some themes or by removing from the analysis themes that did not have enough evidence to support them as noted by Creswell (2012). The themes plus their narratives were then used to analyse data thematically. The data was presented in textual form as narratives and direct quotes based on the objectives. Quantitative and qualitative data were finally triangulated and linked with past findings reviewed in chapter two of the study so as to compare and contrast the findings.

3.11.5 Triangulation of Data

Triangulation is the use of many ways (methods, tools and data sources) to examine the same issue. Triangulation of various data sources like questionnaire and interview guide justified the use of this approach. The two types of data gathered in this approach are sequential and parallel (Mertens, 2005). Sequential form is where one type of data leads to collection of another type of data. Parallel form is where 2 types of data are got and analysed concurrently.

The Sequential form was used as it aided in collecting and analyzing quantitative data firstly and then supplemented by qualitative data. Both the quantitative and qualitative data obtained were correlated, analysed and the results integrated together. Triangulation assisted in discovering how the independent variable affected the dependent variables.

3.12 Ethical Considerations

Ethical issues entail respecting subjects by treating them fairly, sensitively and with dignity (Gardner, 2011). Creswell (2013) argued that study ethics needs the researcher to respect the study sites and participants so as to protect the participants' rights. Ethical issues are vital as they link to the study integrity directly (Bryman, 2012). Ethical measures were observed by keeping high level of discipline and integrity at various stages of the study like when making appointments to visit the study sites, when collecting and analyzing data and when reporting the findings. Plagiarism issues were addressed by running a plagiarism test using a software recommended by the university. Appendix twelve shows the report. Ethical aspects upheld include respecting the privacy rights of informants, telling them the study purpose, allowing them to ask questions, getting their consent to participate voluntarily and protecting them from any physical and / or psychological harm. The researcher respected the study site by reducing disruption on the physical setting, learning programs and social activities.

This was achieved by assuring them of confidentiality of their information, assuring them that their responses will only be used for the purpose of the study, not allowing them to write their names or disclose their identity on the tools to foster honesty in answering of questions and ensure genuineness of the opinions given to strengthen reliability of the data gathered.

The respondents gave their consent to be involved in the study by signing the form of consent in appendix six after being informed by the researcher what the study entailed and what it was to achieve. They were treated with dignity. Identity of informants and their institutions was kept anonymous. This was attained by using pseudonyms for the colleges and the respondents to protect them from any harm. All authors and works cited in the study was referenced and acknowledged accordingly. When gathering of data was over, the informants were appreciated for participating in the study willingly.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Introduction

This chapter presents the results of the data gathered in the field. The background findings of the respondents were presented first followed by analysis of quantitative and qualitative data based on the objectives and hypotheses. They were then triangulated and linked with past findings reviewed in chapter two of this study so as to compare and contrast them. The results were then discussed in line with the following objectives of the study:

a) To examine the relationship between types of social media used for communication and the level of academic performance of students in TTCs.
b) To establish the relationship between frequency of social media use and the level of academic performance of students in TTCs.
c) To determine the relationship between interpersonal relationships and the level of academic performance of students in TTCs.
d) To evaluate the relationship between online attacks and the level of academic performance of students in TTCs.

4.2 Questionnaire Response Return Rate

Table 4.1 represents data on how students and tutors returned questionnaires.

Table 4.1: Questionnaire Return Rate

Respondents	Questionnaires issued	Questionnaires returned	Return rate
Students	306	302	98.7%
Tutors	80	75	93.8%
Total	386	377	97.7%

Source: Researcher's Survey Data, 2022

During the study, 302 out of 306 students and 75 out of 80 tutors returned the questionnaires given. The return rate of students was 99% and 94% for tutors. This return rate was taken to be very good as Cameroon (2015) said a return rate of between 80% to 85% was satisfactory if they were issued by the researcher personally. In this study, questionnaires were issued by the researcher to students and tutors personally giving an average return rate of 97.7% as seen in Table 4.1. This high response return rate shows that the data collected was representative and hence it was generalized to the entire larger population.

4.3 Demographic Information of Respondents

The demographic data of participants such as their gender, age and level of education were collected as there were chances of them affecting the kind of responses got from respondents.

4.3.1 Gender of Participants

Table 4.2 gives the gender of the respondents who were involved in the research.

Table 4.2: Gender of Participants

Gender	Principals		Tutors		Students	
	F	%	F	%	F	%
Male	6	100.0	32	42.7	105	34.8
Female	0	0.0	43	57.3	197	65.2
Total	6	100.0	75	100.0	302	100.0

Source: Researcher's Survey Data, 2022

It is evident from Table 4.2 that all the six principals were males. From the 75 tutors involved in the study, 32 were male (42.7%) and 43 were females (57.3%) meaning that most tutors

were ladies. There were 105 male students accounting for 34.8% and 197 female students accounting for 65.2% from a total of 302 students implying that most students were female. The study results as such showed that the disparity in terms of gender was big since majority of tutors and students were ladies. However, there was a gap in the top managerial position in the TTCs in the county as there was no female principal implying that they were not well represented in the headship in TTCs by the time of the study since all of them were males.

4.3.2 Age of Participants

The age of participants was vital in this study. Tables 4.3 and 4.4 illustrated their responses in relation to stating their ages. Table 4.3 presented the ages of tutors and principals.

Table 4.3: Age of Principals and Tutors

Age	Principals		Tutors	
	Frequency	Percentage (%)	Frequency	Percentage (%)
Below 29 years	0	0.0	0	0.0
30-39 years	0	0.0	3	4.0
40-49 years	0	0.0	51	68.0
Above 50 years	6	100.0	21	28.0
Total	6	100.0	75	100.0

Source: Researcher's Survey Data, 2022

Table 4.3 shows the age of all the 6 principals was over 50 years. This implies that all of them were in the retirement bracket of 50 to 60 years and hence there is need to entrust the management of TTCs in the hands of younger principals who understood the current trends in technology. It also shows that out of 75 tutors, 3 (4%) were aged between 30 to 39 years; 51 (68%) were between 40 to 49 years; and 21 (28%) were over 50 years. This means over three quarters of tutors in TTCs were in the age bracket of 40 to 49 years. In general, most

principals and tutors were over 40 years implying that they were not very youthful compared to their students. This agreed with the 2019 report by Social Media Lab Africa which showed that Kenyans who were over 46 years were not active on social media as they least use it (SIMElab Africa, 2019). Table 4.4 further gives the ages of students involved in the research.

Table 4.4: Age of Students

Age	Frequency	Percentage (%)
Below 19 years	0	0.0
20-29 years	204	67.5
30-39 years	98	32.5
Above 40 years	0	0.0
Total	302	100.0

Source: Researcher's Survey Data, 2022

Table 4.4 shows there zero student was below 19 years and above 40 years. This was because may be most students finish secondary school when they are about 19 years. They were also not over 40 years as 45 years is the Teachers Service Commission (TSC) maximum age for employment in Kenya. Table 4.4 also shows that 204 students (67.5%) were from 20 to 29 years while 98 students (32.5%) were from 30 to 39 years meaning that most students were in the youthful age bracket. This agreed with the study by SIMElab Africa (2019) which said that 26 to 35 years was the most active age on social media in Kenya. Mutua (2011) said that over 35% of youths aged 7 to 24 years in Kenya, Uganda and Tanzania access internet.

4.3.3 Academic Level of Participants

Informants were asked to give their academic level. This response is shown in Tables 4.5.

Table 4.5: Academic Level of Principals and Tutors

Academic level	Principals		Tutors	
	Frequency	Percentage (%)	Frequency	Percentage (%)
Diploma	2	33.3	19	25.3
Bachelors	3	50.0	44	58.7
Masters	1	16.7	10	13.3
Doctorate	0	0.0	2	2.7
Total	6	100.0	75	100.0

Source: Researcher's Survey Data, 2022

Table 4.5 shows that 1 (16.7%) principal had a Master degree; 3 (50%) had Bachelor degree; 2 (33.3%) had diploma; and none had a doctoral degree. This meant that there was need for principals to advance their studies to equip them with better managerial skills for improving students' academic performance as a half of them had Bachelor degree. It was seen that out of 75 tutors, a quarter (25.3%) had diploma; above half (58.7%) had bachelors; 13.3% (10) had masters and 2.7% (2) had doctorate. This meant that most tutors held bachelor degree.

4.3.4 Time Students Spent on Academics

Table 4.6 shows the quantity of time students use on their studies per day.

Table 4.6: Time Spent per Day on Academics by Students

Daily Time	Students		Tutors	
	Frequency	Percentage (%)	Frequency	Percentage (%)
Less than 3 hours	217	71.9	53	70.7
4 to 7 hours	81	26.8	18	24.0
8 to 11 hours	4	1.3	3	4.0
12 or more hours	0	0.0	1	1.3
Total	302	100.0	75	100.0

Source: Researcher's Survey Data, 2022

Table 4.6 shows that 217 students representing nearly three quarters (71.9%) said that they spend below 3 hours per day on their academic work. Slightly above a fifth that is 81 students (26.8%) use about 4 to 7 hours and 4 students (1.3%) spend 8 to 11 hours on their studies daily. The students noted that none of them spent over 12 hours on their studies daily. It was similarly evident from Table 4.6 that most tutors said that many students spent less than 3 hours daily on their personal studies. This was shown by 70.7% (53) of the tutors. Tutors noted likewise that 24% (18) of students spent 4 -7 hours; 4% (3) use 8 - 11 hours and 1.3% (1) spent more than 12 hours on their studies per day. It can thus be generalized from the study results that a very big percent of students spent very little time on their studies.

4.4 Academic Performance of Students

Informants were asked to describe the academic performance of students using the scores they obtained in the end of term examination. This outcome was as shown in Figure 4.1.

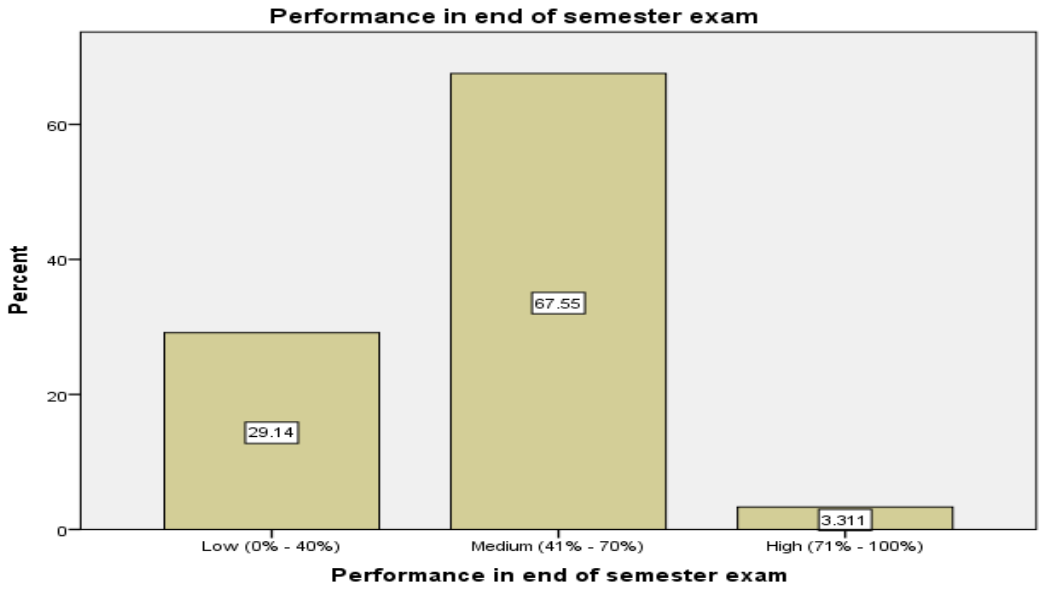


Figure 4.1: Students' views on performance in end of term exam
Source: Researcher's Survey Data, 2022

It was evident from the results on Figure 4.1 that 203 students representing more than two-thirds (67.6%) reported that the scores of students in end of term examination were medium (that is, between 41% and 70%). About a fifth (29.1%) representing 88 students observed that their academic performance was low (that is, between 0% and 40%). Further, 11 students (3.3%) said that their academic performance was high as it ranged from 71% to 100%. In summary, these findings implied that at the time of the study, students performed moderately in their end of term examination. The data go from Figure 4.1 was consistent with the views of tutors who addressed the same issue of academic performance of students in their respective colleges using the results of the Primary Teacher Examination (PTE) in the last five years. The views of tutors were captured in Figure 4.2.

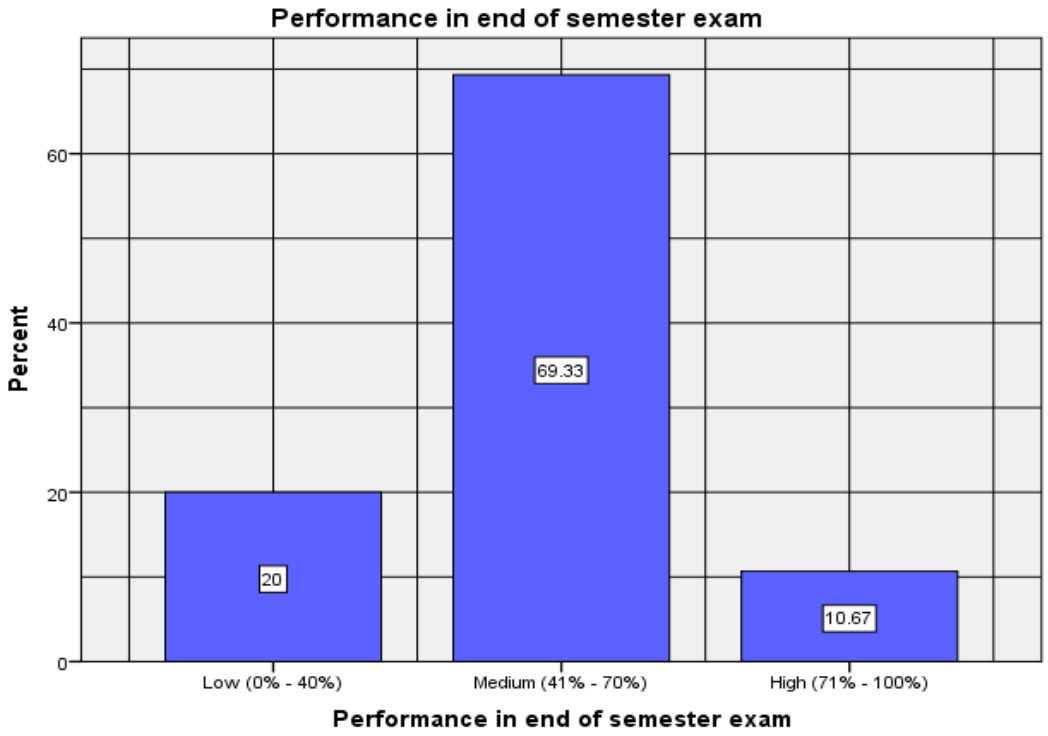


Figure 4.2: Tutors' views on performance in end of term exam
Source: Researcher's Survey Data, 2022

It was clear from Figure 4.2 that 52 tutors (69.3%) were of the view that the scores of students in end of term examination was between 41% and 70% meaning that it was moderate. In addition, 15 tutors (20%) reported that the performance of students was between 0% and 40%, implying that it was low. Further, 8 tutors (10.7%) showed that the performance was high as it ranged from 71% to 100%. Thus, it was generalized from these results that at the time of the study, the performance of most student in TTCs in their end of term examination had been average or moderate. End of term score was used to gauge their performance in academics because that was the only main examination they had done as first year students after joining TTC because they had not done any national examination.

4.5 Use of Types of Social Media and Academic Performance

The first objective examined the relationship between use of types of social media and academic performance of students. It was explored descriptively, inferentially and then supplemented with qualitative data as discussed below.

4.5.1 Descriptive Statistics on Use of Social Media Types and Academic Performance

Descriptive statistics were analysed by frequency and Likert Scale analysis as seen below.

4.5.1.1 Frequent Use of Social Media Types and Academic Performance

The study required the participants to indicate the type of social sites which they thought students use frequently. Their views are described in the analysis in Table 4.7.

Table 4.7: Types of Social Sites used by Students

Type of Social Sites	Students		Tutors	
	F	%	F	%
Facebook	112	37.1	21	28.0
Twitter	5	1.7	3	4.0
WhatsApp	162	53.6	45	60.0
YouTube	20	6.6	5	6.7
Instagram	3	1.0	1	1.3
Total	302	100.0	75	100.0

Source: Researcher's Survey Data, 2022

Table 4.7 shows that WhatsApp was used by over a half of students (53.6%). It was followed closely by Facebook at 37.1%; YouTube at 6.6%; Twitter at 1.7% and Instagram at 1%. Tutors said WhatsApp was majorly used by students (60%). Facebook was second at 28% then YouTube at 6.7%; Twitter at 4% and Instagram was the minority at 1.3%. Hence, it shows WhatsApp was the favourite social site of students followed by Facebook. This result differed slightly with the study by Duggan (2015) which noted that nearly a sixth (65%) of the whole adult population in USA use Facebook as their main social media. Bozkurt, Karadeniz and Kocdar (2017) said Facebook was the most preferred online site among Turkish distance education students followed by YouTube and Instagram. Aslam and Nazim (2016) said most library information professionals in India use Facebook, Fliker, Twitter, Google+ and Bebo daily to talk with other people like friends and family members.

It was also noted that social media was used often by Pakistan university learners to share with colleagues (Hameed, Maqbool, Aslam, Hassan & Anwar, 2013). Literature shows that online sites are most widely used by higher education students to share information (Junco,

2015). The study by Shukor, Musa and Shah (2017) said that Facebook was a popular social media in Malaysia. This study was in agreed with the results of the Balogun, Awodele, Bello, Oyekunle and Balogun (2017) study which showed that the key online site platform which most Nigerian undergraduate university learners used mostly were Facebook and WhatsApp. The same was asserted by Moshi, Ndeke, Asatsa and Ngozi (2018) who said the social media used by Tanzanian learners are Facebook, WhatsApp, LinkedIn, Academia and Skype. This study result coincided with the 2019 Social Media Lab Africa report which noted WhatsApp was the key social site in Kenya followed by Facebook, YouTube, Google+, LinkedIn and Snapchat in that order (SIMElab Africa, 2019). This meant that the various types of social media are big platforms of posting real time information in the world. This is because it is an interactive and internet driven site that can promote academics when used well.

4.5.1.2 Likert Scale on Use of Social Media Types and Academic Performance

Item 7a in questionnaire wanted to show how social media is used positively for studies by participants choosing the option that best shows their agreement or disagreement level on a wide range of opinions on a five-point Likert Scale. The scale used was: SD for strongly agree; A for agree; N for not sure (not agree or disagree); D for disagree; and SA for strongly disagree. Tables 4.8 and 4.9 provided the responses of the participants.

4.5.1.2.1 Students' views on Use of Social Media Types and Academic Performance

The degree of agreement or disagreement of students on this issue are shown on Table 4.8.

Table 4.8: Students' Rating on Social Media Types and Academic Performance

Response on social media use to promote studies positively	N= 302	SA	A	N	D	SD	Mean	St.Dev
Students use social media to discuss and do assignments with fellow students	F	162	130	8	2	0	1.50	0.586
	%	53.6	43.1	2.6	0.7	0.0		
Students use social media to make inquiries and ask tutors questions	F	100	173	21	5	3	1.80	0.720
	%	33.1	57.3	7.0	1.6	1.0		
Students use social media to attend lectures and classes online	F	111	184	4	3	0	1.67	0.557
	%	36.8	60.9	1.3	1.0	0.0		
Students use social media to seek support from college administration like fees inquiries	F	162	131	5	2	2	1.51	0.635
	%	53.6	43.4	1.6	0.7	0.7		
Students use social media to chat or post messages / texts	F	202	97	1	2	0	1.35	0.524
	%	66.9	32.1	0.3	0.7	0.0		
Students use social media to share / post pictures / images	F	251	48	1	1	1	1.19	0.469
	%	83.2	15.9	0.3	0.3	0.3		
Students use social media to share / post videos or clips	F	264	35	2	0	1	1.14	0.419
	%	87.4	11.6	0.7	0.0	0.3		
Average score							1.45	0.559

NOTE: N represents number of respondents; F represents frequency; % represents percent; and St. Dev represents standard deviation.

Source: Researcher's Survey Data, 2022

Table 4.8 shows that 162 students (53.6%) strongly agreed, 130 (43.1%) agreed, 8 (2.6%) were neutral and 2 (0.7%) refused that students use social sites to do assignments and discuss with fellow students. Majority of students (96.7%) using social media for this purpose can positively affect their academic performance as supported by a mean of 1.50 and a standard deviation of 0.586.

Regarding use social media to make inquiries or ask tutors questions, a majority 273 students (90.4%) strongly agreed and agreed while a minority 29 (9.6%) of them refused. This claim was backed by a mean value of 1.80 with a standard deviation of 0.720.

Most students (295) representing 97.7% strongly agreed and agreed they use social media to attend lectures and classes online but 7 students (2.3%) disagreed with this fact as seen from a mean value of 1.67 and a standard deviation of 0.557.

A mean of 1.51 and standard deviation of 0.635 meant that a majority 293 of students (97%) strongly agreed and agreed while a minority 9 of students (3%) disagreed that students use social media to seek support from college administration like inquiring about their fees.

The mean score of 1.35 and standard deviation of 0.524 confirmed that 299 students (99%) strongly agreed and agreed that learners use social media to post messages or texts and chats but 3 students (1%) rejected.

Also, 299 students representing 99% strongly agreed and agreed but 3 students representing 1% refused that they use social media to share images. Most students thus chat and post text messages using social media as seen in the mean of 1.19 and 0.469standard deviation.

The same was observed by 299 students (99%) who were in agreement that they strongly agreed and agreed that students use social media to post clips and share video but 3 students (1%) did not agree with this fact as backed by a 1.14 mean and standard deviation of 0.419.

It was therefore generally concluded from the results obtained from students that most students use social media to promote their studies positively as supported by the average mean score value of 1.45 and an average standard deviation value of 0.559.

4.5.1.2.2 Tutors' views on Use of Social Media Types and Academic Performance

Tutors were asked through question 7a in the questionnaire to state how learners use social media to support / promote their studies positively by indicating whether they disagree or agree with the statements posed. Table 4.9 gives their views on this issue.

Table 4.9: Tutors' Rating on Social Media Types and Academic Performance

Response on social media use to promote studies positively	SA	A	N	D	SD	Mean
Students use social media to discuss and do assignments with fellow students	32 42.7	36 48.0	4 5.3	2 2.7	1 1.3	1.72
Students use social media to make inquiries and ask tutors questions	39 52.0	24 32.0	11 14.7	1 1.3	0 0.0	1.65
Students use social media to attend lectures and classes online	25 33.3	35 46.7	10 13.3	3 4.0	2 2.7	1.95
Students use social media to seek support from college administration like fees inquiries	21 28.0	30 40	22 29.4	1 1.3	1 1.3	2.08
Students use social media to chat or post messages / texts	62 82.7	10 13.3	3 4.0	0 0.0	0 0.0	1.21
Students use social media to share / post pictures / images	51 68.0	21 28.0	2 2.7	1 1.3	0 0.0	1.37
Students use social media to share / post videos or clips	48 64.0	24 32.0	1 1.3	1 1.3	1 1.3	1.44
Average score						1.63

Source: Researcher's Survey Data, 2022

Table 4.9 shows 36 tutors (48.0%) agreed, 32 (42.7%) strongly agreed, 4 (5.3%) were not sure, 2 (2.7%) refuted and 1 (1.3%) strongly refuted students use social media to do discuss and assignments with other students. These results implied that many learners use social sites to discuss and do assignments with their fellow students as shown by a mean of 1.72. These results were in tandem with the views of students meaning that prudent use of social media can positively impact on students' academic performance.

In terms of students using social media to ask tutors questions or make inquiries, a majority of 63 tutors representing 84% strongly agreed and agreed with this issue while a minority of 1 tutor (1.3%) refuted and 11 tutors (14.7%) were neutral as backed by a mean of 1.65.

Most tutors (60) representing 80% strongly agreed and agreed they use social media to attend lectures and classes online but 10 tutors (13.3%) were neutral and 5 tutors (20%) disagreed with this fact as seen from the 1.95 mean.

The mean of 2.08 meant that a majority 51 of tutors (68%) strongly agreed and agreed while a minority 2 of tutors (2.6%) disagreed and 22 tutors (29.4%) were not sure that students use social media to seek support from college administration like inquiring about their fees.

A majority 72 of tutors (96%) strongly agreed and agreed that students use social media to chat and post messages or texts while 3 tutors representing 4.0% observed that they were not sure as seen in the mean value of 1.21.

A majority 72 tutors (96%) strongly agreed and agreed that students use social media to share images but 2 tutors (2.7%) were neutral and 1 (1.3%) disagreed with this fact as backed by a mean score of 1.37.

One tutor (1.3%) was not sure and 2 tutors (2.7%) disagreed that students use social media to share video while a majority 72 of tutors (96%) were in consensus with this issue as supported by the mean score value of 1.44.

It was therefore generally concluded from the results obtained from tutors that most learners use social sites to promote their academics positively. This was shown by the average mean score value of 1.63. This was in agreement with the results obtained from the responses given by students. These responses obtained from both students and tutors totally agreed with the study outcomes by Bozkurt, Karadeniz and Kocdar (2017) who said sharing of learning content via social media rises the interest of learners in the courses they undertake by 49.5%.

4.5.1.3 Qualitative Analysis on Use of Social Media Types and Academic Performance

The descriptive analysis above was supplemented by qualitative data from interview guide and open ended questions in questionnaires since many informants opined that social media was beneficial to the learning process of students. For instance, the result from interview of

principals showed that their views did not vary from what was noted in the questionnaires issued to tutors and students. For example, the Principal of *Blue Teachers' Training College* who was named B1 noted that learners utilize social media to communicate with others. The Principal said:

> *"Learners utilize social media to pass and receive information from parents, siblings, friends and to connect with others people whom they have similar interests with"* (Principal B1, Blue TTC: 2022).

An in depth interview with another interviewee showed that the level of using various types of social sites for communication among students is going up. The comment of this Principal of *Yellow TTC* who was marked as Y1 was that:

> *"Learners in this college use various kinds of social media but WhatsApp and Facebook are the key popular ones among Learners. Some students have formed groups on WhatsApp which they use to discuss academic issues like doing class assignments"* (Principal Y1, Yellow TTC: 2022).

The view of this Principal of *Yellow TTC* who was marked as Y1 coincided with what Asad, Anam and Kanwal (2016) noted in their study. They reported that students at University of Sargodha join different groups on various social media like Facebook to link up with other users like fellow students for learning purposes to share ideas and discuss various topics with their colleagues by video conferencing. These views concurred with the outcomes observed in the report by SIMElab Africa (2019) that noted most Kenyans use social media for social issues, playing games, entertainment, searching jobs, academics, politics, sports, religion, climate, environmental matter, getting updates and following brands or advertisements of

products and services they admire. The main sites they use for social issues were WhatsApp, Facebook, Telegram and Facebook Messenger. The ones used for entertainment are TikTok, Vimeo, YouTube, Instagram, Pinterest and Snapchat. Those they use to search for jobs are Skype and LinkedIn. Twitter is mainly used for politics.

In the same regard, respondents were asked in one open ended question in the questionnaire to state how else they think social sites used by learners to interact influence their academics positively. A tutor at *Red TTC* marked R2 made the following observation:

> *"Some learners utilize social media to talk with sellers of stationeries like books in order to buy which products from online markets. Reading such books which were bought online whether in softcopy or hardcopy improves the academic performance of students"* (Tutor R2, Red TTC: 2022).

This finding was parallel to the report by SIMElab Africa (2019) which noted that social media has opened positive avenues like trading. It has aided various businesses to advertise themselves very cheaply and easily leading to quick growth of income and faster connection with clients globally. SIMElab Africa (2019) report furthermore observed that social media led to acquiring resources fast. A student labeled B35 at *Blue TTC* showed that:

> *"Social media aid learners to access various types of digital resources like course notes, animation and video clips. They use these digital contents to supplement the notes which they are given in class thus improving their academic performance"* (Student B35, Blue Teachers' Training College: 2022).

In addition to this, social media can be a very valuable source of information to learners if it is harnessed well via sharing notes. This was noted by Iordache and Lamanauskas (2013) who noted that most learners in Rome exchange notes using social sites through sharing

videos and photos as well as texting their friends. The findings by Iordache and Lamanauskas (2013) agree with what a student marked R44 at *Red TTC* stated that:

> *"Students make new friends on social sites and connect with their old friends to share various kinds of information via chatting, posting images and video clips, among others. This enhances collaboration among them"* (Student R44, Red TTC: 2022).

Bozkurt, Karadeniz and Kocdar (2017) noted that nearly 70% of Turkish distance education students at Anadolu University use it to join with friends and family members. Cheung, Chiu and Lee (2011) said that keeping in touch with friends via instant communication was the key reason that made many people to use social sites. It was shown in the same breath that many learners use Facebook in their process of learning to talk and collaborate (Manasijević, Živković, Arsić & Milošević, 2016). Another tutor marked W9 at *White TTC* reported that:

> *"There are some students who search for online teachers on social sites. Students make some academic inquiries from such online teachers thus promote their academic performance positively"* (Tutor W9, White TTC: 2022).

Many students similarly use various social sites like Google to study various issues related to their academics. This was backed by a student marked G32 at *Green TTC* who said that:

> *"Students use Google to search for answers for the various questions they are given in class. They achieve this by browsing on internet. Googling enables students to get more accurate answers"* (Student G32, Green TTC: 2022).

On the issue of using online sites in studies, a student marked Y57 at *Yellow TTC* said that:

> *"Social media is a vital tool in learning since it raises the interest of students in their studies especially when the learning contents they need in various courses they are doing are posted online"* (Student Y57, Yellow TTC: 2022).

Usage of social media can improve the academics of students by motivating them to learn as indicated similarly by a tutor labelled W3 at *White TTC* who reported that:

> *"Using social sites heightens the motivation of learners towards learning hence influences their academic performance positively"* (Tutor W3, White TTC: 2022).

The views got from tutors, students and principals in the qualitative data analysis shows that the online sites used by learners to talk promote their studies positively. This was backed by the current incorporation of computer technology in teaching and learning process in many learning institutions in this 21st Century (MoE Sessional Paper, 2018).

4.5.2 Inferential Statistics on Use of Social Media Types and Academic Performance

In order to make an inference about the association existing between social media types and learners' academic performance, the researcher used inferential statistical tools to predict this effect. Inferential statistics was used to test the first null hypothesis which stated that there was no significant relationship between type of social sites used for communication and level of academic performance of learners in TTC at $\alpha = 0.05$ significance level. This hypothesis was rejected if the P-value was less than 0.05 and the alternative hypothesis was accepted implying that a significant association existed and vice versa. The outcomes of the inferential statistics obtained from students and tutors respectively were as presented in Tables 4.10 and 4.11 and discussed accordingly.

4.5.2.1 Correlation between Use of Social Media Types and Academic Performance

Based on the views raised by students and tutors in the descriptive analysis, the study wanted to know if there was a correlation between the variables in objective one by testing the first

hypothesis. A correlation analysis was done using Pearson Product Moment Correlation analysis to make an inference about the correlation between the 2 variables. The results of this correlation analysis in the SPSS output got from students' responses are in Table 4.10.

Table 4.10: Social Media Types and Academic Performance from Students data

		Social sites visited by students frequently	Performance in end of term exam
Social sites visited by students frequently	Pearson Correlation	1	.774**
	Sig. (2-tailed)		.000
	N	302	302
Performance in end of term exam	Pearson Correlation	.774**	1
	Sig. (2-tailed)	.000	
	N	302	302

**. Correlation is significant at the 0.05 level (2-tailed).

Source: Researcher's Survey Data, 2022

Table 4.10 shows there was a strong positive statistically significant correlation between social media sites visited by students frequently and their performance in end of term examination ($r = 0.774$, $n = 302$, $p = 0.000$) at 0.05 significance level. The result meant that students' academic performance improved the more they used various types of social media. Thus, types of social media correlate with level of academic performance. The correlation analysis results from tutors in SPSS output are in Table 4.11.

Table 4.11: Social Media Types and Academic Performance from Tutors data

		Social sites visited by students frequently	Performance in end of term exam
Social sites visited by students frequently	Pearson Correlation	1	.663**
	Sig. (2-tailed)		.000
	N	75	75
Performance in end of term exam	Pearson Correlation	.663**	1
	Sig. (2-tailed)	.000	
	N	75	75

**. Correlation is significant at the 0.05 level (2-tailed).

Source: Researcher's Survey Data, 2022

Table 4.11 shows there was a positive statistically significant moderate correlation between sites visited frequently on social media and performance in end of term examination ($r = 0.663$, $n = 75$, $p = 0.000 < 0.05$). This result meant that performance in end of term examination improved as students used various kinds of online sites. The outcomes in Tables 4.10 and 4.11 shows types of social media correlate positively with academic performance. Hence, the first null hypothesis was rejected because the p-value got (that is 0.000) was less than 0.05. The alternative hypothesis was accepted implying that there exists a significant correlation. Consistent with the current results, Bozkurt, Karadeniz and Kocdar (2017) said that the link between use of types of social media and academic performance was positive.

4.5.2.2 Regression on Use of Social Media Types and Academic Performance

The researcher did a linear regression analysis at a confidence level of 95% to predict the magnitude of this significant positive correlation in the first null hypothesis between use of

types of social media as independent variable and academic performance as dependent variable. The results of the analysis are shown in Tables 4.12 and 4.13.

Table 4.12: Students Regression on Social Media types and Academic Performance

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.475[a]	.225	.207	0.453

a. Dependent Variable: Academic performance of students
b. Predictors: (Constant), Students use social media to share videos, Students use social media to attend lectures online, Students use social media to seek support from administration, Students use social media to ask tutors questions, Students use social media to post images, Students use social media to chat or text, Students use social media to discuss and do assignments with fellow students

Source: Researcher's Survey Data, 2022

The Adjusted R Square value of 0.207 in Table 4.12 got from students' responses shows that the independent variable (use social media to share videos, use social media to chat / text, use social media to attend lectures online, use social media to ask tutors questions, use social media to seek support from administration, use social media to post images, use social media to discuss or do assignments with other learners) explained 20.7% of academic performance. This meant the remaining 79.3% of other factors not discussed in this study affect academic performance. This shows that types of social media used to communicate had a fairly low effect on academic performance. This weak relation between the two variables was backed by the R value of 0.475. Tutors' responses on the same issue are shown in Table 4.13.

Table 4.13: Tutors Regression on Social Media types and Academic Performance

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.442[a]	.195	.111	0.518

Source: Researcher's Survey Data, 2022

The Adjusted R Square value of 0.111 in Table 4.13 shows that types of social media affects 11.1% of academic performance showing that 88.9% of other factors that were not included in the study affect academic performance. This implied a weak relation between independent and dependent variables as the contribution of social media types on academic performance was small. The facts in Tables 4.12 and 4.13 backed at a threshold of $P < 0.05$ the rejection of the hypothesis. The hypothesis was tested using ANOVA to know if types of social media was indeed a significant predictor of academic performance according to Creswell (2014).

4.5.2.3 ANOVA Results on Use of Social Media Types and Academic Performance

ANOVA was used to establish the effect of types of social media on academic performance. Its results obtained from the responses students and tutors are shown in Tables 4.14 and 4.15.

Table 4.14: Students ANOVA on Social Media Types and Academic Performance

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	17.552	7	2.507	12.225	.000[b]
	Residual	60.302	294	.205		
	Total	77.854	301			

a. Dependent Variable: Academic performance of students
b. Predictors: (Constant), Students use social media to share videos, Students use social media to attend lectures online, Students use social media to seek support from administration, Students use social media to ask tutors questions, Students use social media to post images, Students use social media to chat or text, Students use social media to discuss and do assignments with fellow students
Source: Researcher's Survey Data, 2022

Table 4.14 shows that there was a statistically significant effect of the independent variable on the dependent variable (academic performance) as seen in the ANOVA result [$F(7, 294) = 12.225$, $p < 0.05$]. This output showed that the regression model statistically predicts the dependent variable significantly well since the p-value (0.000) got was less than 0.05. This

supported the rejection of the first null hypothesis leading to the acceptance of the alternative hypothesis which stated that there is a significant relationship between types of social media and level of academic performance. Table 4.15 also shows ANOVA results got from tutors.

Table 4.15: Tutors ANOVA on Social Media Types and Academic Performance

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	4.365	7	.624	2.324	.035[b]
	Residual	17.981	67	.268		
	Total	22.347	74			

Source: Researcher's Survey Data, 2022

Table 4.15 shows that types of social media significantly predict academic performance [F (7, 67) = 2.324, $p < 0.05$] since types of social media accounted for a big amount of variation in academic performance. The small p-value of 0.035 attained backed the rejection of the first null hypothesis thus adopting the alternative hypothesis which stated that types of social media have a negative influence on academic performance in TTCs in the county. A linear regression was finally produced to get the magnitude of the effect of each factor of types of social media on academic performance using unstandardized beta coefficients.

4.5.2.4 Coefficients of Linear Regression on Use of Social Media Types and Academic Performance

The researcher lastly used unstandardized and standardized beta coefficients to determine how much academic performance varied with a one-unit rise in types of social media when all the other aspects of independent variable were held constant. Tables 4.16 and 4.17 gives the results of the unstandardized coefficient tests based on responses from students and tutors respectively.

Table 4.16: Students Coefficients on Social Media Types and Academic Performance

Coefficients[a]							
Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
1 (Constant)	3.080	.195		15.825	.000		
To discuss or do assignments with fellow students	-.446	.137	-.514	-3.256	.001	.106	9.465
To make inquiries or ask tutors questions	-.201	.053	-.285	-3.768	.000	.461	2.168
To attend lectures or classes online	-.355	.073	.389	-4.876	.000	.414	2.413
To seek support from administration like fee inquiry	.457	.139	.571	3.295	.001	.088	11.403
To chat or post messages / texts	-.640	.108	-.659	-5.950	.000	.215	4.653
To share / post pictures / images	.150	.112	.138	1.336	.183	.247	4.050
To share / post videos or clips	.244	.099	.201	2.476	.014	.398	2.513

a. Dependent Variable: Academic performance of students

Regression Equation: $Y=\alpha+\beta_1X_1+\beta_2X_2+\beta_3X_3+\beta_4X_4+\beta_5X_5+\beta_6X_6+\beta_6X_6+\beta_7X_7+\varepsilon$

$Y=3.080-0.446X_1-0.201X_2-0.355X_3+0.457X_4-0.640X_5+0.150X_6+0.244X_7+\varepsilon$

Source: Researcher's Survey Data, 2022

As observed in Table 4.16, the regression equation that predicted the relation between the variables based on students' responses was: $Y=\alpha+\beta_1X_1+\beta_2X_2+\beta_3X_3+\beta_4X_4+\beta_5X_5+\beta_6X_6+\beta_6X_6+\beta_7X_7+\varepsilon$ where α was a constant; X were the various indicators of types of social media; and Y was performance in academics. The regression model showing the beta values for objective one was: $Y=3.080-0.446X_1-0.201X_2-0.355X_3+0.457X_4-0.640X_5+0.150X_6+0.244X_7+\varepsilon$.

From Table 4.16, the negative unstandardized beta (β) coefficient of -0.446 meant that a unit rise of students using social media to do assignments led to a 44.6% drop in their academic performance. This meant that for every rise of one point in discussing or doing assignments using it, academic performance dropped by -.446 points. Raising its use also by one standard deviation led to a drop in academic performance by a standardized beta standard deviation value of -0.514 units. Thus, there is a statistically significant effect of using it to discuss or do assignments on academic performance as shown by the p-value of $0.001 < 0.05$.

The negative β value of -0.201 implied that a rise in one unit of using social media to make inquiries or ask tutors questions led to a 20.1% drop in academic performance. A rise of one standard deviation in using it to make inquiries or ask tutors questions would likewise result in a decrease of -0.285 standard deviation units in academic performance. This therefore showed a statistically significant effect of using social media to make inquiries or ask tutors questions on academic performance as supported further by the p-value of $0.000 < 0.05$.

A rise of one unit in using social media to attend lectures or classes online lead to a 35.5% drop in academic performance. A one standard deviation improvement in using it to attend lectures or classes online moreover led to a drop in academic performance by -0.389 standard deviation units. Hence, this implied that there was a statistically significant effect of using it to attend lectures online on academic performance as signified by p-value of $0.000 < 0.05$.

The positive β value of 0.457 showed that seeking support from administration using social media rise academic performance by 45.7%. A rise in one standard deviation in using it to get support from administration is furthermore likely to raise academic performance by .571 standard deviation units. This shows that there was a statistically significant effect of using it to get support from administration on academics as given by the p-value of $0.000 < 0.05$.

The negative β value of -0.640 meant that as usage of social media to chat or post texts rose by one unit, academic performance reduced by 64%. One standard deviation rise in using it to chat or post messages would lower academic performance by -0.659 standard deviation units. This showed a statistically significant effect of using social media to chat or post texts / messages on academic performance which was backed by p-value of 0.000 < 0.05.

The positive beta value of 0.150 meant that for every unit rise in the use of social media to share images, there is a 15% rise in academic performance. A rise of one standard deviation in using it to share or post pictures raise academic performance by 0.138 standard deviation units. This signified a statistically significant impact of using it to share or post images on academic performance. The p-value of 0.183 > 0.05 obtained showed that there was no statistically significant impact of sharing images via social media on academic performance.

Lastly, the positive β value of 0.244 showed that a rise in sharing clips via social media can rise academic performance by 24.4%. A rise in one standard deviation of using it to share clips would raise academic performance by 0.201. This shows that there was a statistically significant effect of using it to share videos on academic performance. The p-value of 0.183 > 0.05 which was however obtained showed that there was no statistically significant influence of sharing videos / clips using social media on academic performance.

By comparing the contribution of each element on the dependent variables, it was clear that seeking support from the administration contributed more (0.457) on academic performance followed by sharing videos (0.244) then sharing pictures (0.150), making inquiries or asking questions (-0.201), attending lectures (-0.355), discussing or doing assignments (-0.446) and finally chatting / posting texts (-0.640). To add to that, it was evident from the negative β

values that students' academic performance reduces when there is a rise in the use of social media to do assignments, make inquiries, attend lectures and to chat or post messages. On the other hand, increase in the usage of social media to post pictures, seek support from the administration as well as post videos led to a rise in the academic performance of students.

These findings showed generally that all the various aspects of types of social media had a statistically significant effect on students' academic performance since all the p-values got were less than 0.05 except using it to share images (0.183) and using it to share videos (0.14). This meant that use of social media to discuss or do assignments, make inquiries or ask tutors questions, seek support from administration, chat or post texts / messages and attend lectures or classes online add a substantial contribution to explaining academic performance. Using social media to post pictures and videos however were not useful in the model when other aspects of the independent variable were present in the model. It was also noted from Table 4.16 that the regression equation was fine since the test for collinearity showed Tolerance of all the predictors variables was over 0.1 while Variance Influence Factor (VIF) was less than ten except for seeking support from the administration in both cases of VIF and Tolerance. This was based on the views of Dhakal (2016) that in a linear regression model, Tolerance must be more than 0.1 and VIF must be less than ten for all aspects of the predictor variables.

The unstandardized coefficients obtained from tutors' responses where the beta coefficients model of regression was $Y=1.830+0.054X_1+0.251X_2-0.359X_3-0.053X_4+0.529X_5+0.097X_6-0.274X_7+\varepsilon$ was as shown in Table 4.17.

Table 4.17: Tutors Coefficients on Social Media Types and Academic Performance

Coefficients[a]							
Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
1 (Constant)	1.830	.235		7.794	.000		
To discuss or do assignments with fellow students	.054	.097	.078	.555	.581	.600	1.665
To make inquiries or ask tutors questions	.251	.128	.356	1.954	.055	.363	2.758
To attend lectures or classes online	-.359	.177	-.588	-2.034	.046	.144	6.954
To seek support from administration like fee inquiry	-.053	.152	-.084	-.348	.729	.208	4.797
To chat or post messages / texts	.529	.237	.482	2.228	.029	.256	3.903
To share / post pictures / images	.097	.168	.107	.573	.568	.343	2.913
To share / post videos or clips	-.274	.148	-.360	-1.857	.068	.319	3.130

a. Dependent Variable: Academic performance of students

Regression Equation: $Y=\alpha+\beta_1X_1+\beta_2X_2+\beta_3X_3+\beta_4X_4+\beta_5X_5+\beta_6X_6+\beta_6X_6+\beta_7X_7+\varepsilon$

$Y=1.830+0.054X_1+0.251X_2-0.359X_3-0.053X_4+0.529X_5+0.097X_6-0.274X_7+\varepsilon$

Source: Researcher's Survey Data, 2022

Based on Table 4.17, the positive unstandardized beta (β) coefficient of 0.054 showed that a rise in one unit of using social media to discuss or do assignments raised academic performance by 5.4%. This meant that for every one-point rise of using social media to discuss or do assignments, academic performance rose by 0.054 points. Raising its use by one standard deviation led to a rise in academic performance by a standardized beta coefficient of 0.078 standard deviation units. There was thus a significant effect of using it to discuss or do assignments on academic performance (0.581 > 0.05). This result agreed with the study by Moshi, Ndeke, Asatsa and Ngozi (2018)

who said discussing or doing assignments with other learners improve their academics. The positive β value of 0.251 meant a rise in one unit of using social media to make inquiries or ask tutors questions resulted in a 25.1% rise in academic performance. A rise of one standard deviation in using it to make inquiries or ask tutors questions similarly led to a rise of 0.356 standard deviation units in academic performance. This shows a significant effect of using it to make inquiries or ask tutors questions on academic performance as p-value of .055>.05. A rise of one unit in using social media to attend lectures or classes online as seen from the negative β value of -0.359 lead to a 35.9% drop in academic performance. One standard deviation raise in using it to attend lectures or classes online led to a standard deviation unit drop of -0.588 in academic performance. This means there was a significant effect of using it to attend lectures online on academic performance as signified by p-value of 0.046 < 0.05. Negative β value of -0.053 meant seeking support from administration using social sites can lower academic performance by 5.3%. It is evident that a rise in one standard deviation in using it to get support from administration lower academic performance by -0.084 standard deviation units. This shows that there was a statistically significant effect of using it to seek support from administration on academic performance as backed by 0.729 > 0.05.

The positive β value of 0.529 meant as use of social media to chat or post texts rose by one unit, academic performance rose by 52.9%. A rise of one standard deviation in using it to chat or post texts raise academic performance by 0.482 standard deviation units. Thus using it to chat or post texts affect academics significantly as seen from p-value of 0.029 < 0.05.

The positive beta value of 0.097 indicates that for every unit rise in use of social media to share images, there is a 9.7% rise in academic performance. A one standard deviation raise in using it to share or post snaps raises academic performance by 0.107 standard deviation

units. This was a statistically significant effect of using social media to share or post images on academic performance as evidenced by the p-value of 0.568>0.05.

Lastly, the negative 0.274 β value showed a rise in sharing or posting videos via social media can drop academic performance by 27.4%. It is evident that a rise in one standard deviation of using it to share or post videos was likely to lower academic performance by -0.360. Thus, this shows that there was a statistically significant impact of using social media to share or post videos / clips on academic performance as supported by the p-value of 0.068 > 0.05.

By comparing the contribution of each element on the dependent variables, it was clear that chatting / posting texts contributed more (0.529) on academics followed by making inquiries or asking questions (0.251) then sharing pictures (0.097), discussing or doing assignments (0.054), seeking help from administration contributed more (-0.053), sharing clips (-0.274) and finally attending lectures online (-0.359). The negative β values likewise shows that students' academic performance drops when there is a rise in its use to attend lectures online, seek support from administration and share videos. On the other hand, a rise in using it to discuss or do assignments, chat or post texts, make inquiries or ask tutors questions, share snaps and post clips led to a rise in performance of learners in academics in these TTCs.

The results from tutors generally showed that all the various aspects of types of social media had no statistically significant effect on students' performance in academics since all the p-values got were over 0.05. This implied using it to discuss or do assignments, attend lectures online, chat or post texts, share clips, make inquiries or ask tutors questions, seek help from administration and share pictures were not useful in adding a substantial contribution on

explaining students' academic performance in the model. The results in Table 4.17 showed besides that all the conditions of collinearity were met since Variance Influence Factor (VIF) of all the independent variables was below 10 while Tolerance was over 0.1. This agreed with what Creswell (2014) suggested that Tolerance must be over 0.1 and VIF must be less than ten for all the aspects of the independent variables in a linear regression model.

Results in Table 4.16 differed with the observation made by Bozkurt, Karadeniz and Kocdar (2017) who said the academic performance of distance education learners in Turkey improve when they use various types of social media to discuss assignments with other students, limit chatting online and attend lectures or classes online. This finding by Bozkurt, Karadeniz and Kocdar (2017) was in agreement with the views presented by tutors in Table 4.17. Similarly, Aslam and Nazim (2016) said academic performance of Indian learners dropped as they spent time sharing snaps and posting videos online. Further, Moshi, Ndeke, Asatsa and Ngozi (2018) said when Tanzanian students spent time on Facebook, their performance in academics dropped. However, Archana and Jyotsna (2015) noted that use of social media by learners in India did not affect their academic performance significantly. Moreover, the use of the various types of social media by students did not significantly influence their academic performance to a large extent (Hameed, Maqbool, Aslam, Hassan & Anwar, 2013).

In general, based on the findings presented in Tables 4.16 and 4.17, it is evident that the p-value for most unstandardized coefficient values was smaller than the level of significance of 0.05. This implied that there was enough evidence to reject the first null hypothesis and accept the alternative hypothesis. It was consequently concluded that there was a statistically

significant effect of use of various types of social media on academic performance. This meant that types of social media were a significant predictor of academic performance.

4.6 Relationship between Frequency of Social Media Use and Academic Performance

Objective two explored the relationship between frequency of social media use and level of academic performance of students using end of term scores with the aid of descriptive and inferential statistics and supplemented by qualitative analysis as discussed below.

4.6.1 Descriptive Statistics on Frequency of Social Media Use and Academic Performance

This section analysed the descriptive statistics in terms of frequencies, Likert Scale and qualitative analysis as discussed below.

4.6.1.1 Frequency Analysis of Social Media Use and Academic Performance

In order to determine the rate at which students use social media, informants were asked to comment about the frequency of usage of social media per day. Table 4.18 represented the views of students and tutors.

Table 4.18: Frequency of Students using Social Media

Frequency of social media usage	Students		Tutors	
	F	%	F	%
Not frequent	17	5.6	9	12.0
Frequent	101	33.5	24	32.0
Very frequent	184	60.9	42	56.0
Total	302	100.0	75	100.0

Source: Researcher's Survey Data, 2022

The analysis in Table 4.18 showed that two-thirds of students representing 60.9% (184) and over a half of tutors representing 56% (42) said students use social media very frequently. Around a third of tutors (24) and students (101) said students use social media frequently. Over a tenth of tutors (9) and less than a tenth of students (17) said learners do not use social media frequently. This information thus showed that online sites are key section of the daily routine life of students as most of them access it very frequently. This agreed with the report by Bozkurt, Karadeniz and Okur (2015) who said that the frequency at which post-graduate students' login to social sites daily was 96% meaning it was high. Li, Lai and Zhang (2015) said that frequency of accessing social media daily was 94.8%. SIMElab Africa (2019) report said further that most Kenyans use social media frequently. Marett and Choo (2016) noted social media was frequently used by many Malaysian secondary school adolescent learners. Hence, the study wished to know the time learners spend on social media as they used it very frequently by requiring both tutors and students to state the number of hours' students spend daily on social media. The results from questionnaire were as displayed in Table 4.19.

Table 4.19: Time Spent on Social Media per Day by Students

Time spent daily	Students		Tutors	
	Frequency	Percentage (%)	Frequency	Percentage (%)
Below 1 hours	139	46.1	46	61.3
2 to 3 hours	152	50.3	29	38.7
4 to 5 hours	11	3.6	0	0.0
Over 6 hours	0	0.0	0	0.0.
Total	302	100.0	75	100.0

Source: Researcher's Survey Data, 2022

The data in Table 4.19 showed a vast majority of learners in TTCs spend below 3 hours on social media with 139 (46.1%) students using below 1 hour and 152 (50.3%) students using

2 to 3 hours on social media daily. Forty-six tutors (61.3%) said students spend less than one hour on social media and the remaining 29 tutors (38.7%) said students spend between 2 to 3 hours on social media daily. No students spend over 4 hours on social media according to tutors. This was may be because most students attend classed during the day. Furthermore, 46.1% of students (139) noted that they spend below 1 hour on social media daily. A majority half (50.3%) of students (152) said they spend 2 to 3 hours on social media and a minority 3.6% of students (11) spend between 4 to 5 hours on it daily. No learners use over 6 hours on it. These results meant that it was most likely most students use social media during their free time as most of the time they are in class during the day.

The same results were not surprisingly reported by various other researchers. For instance, this data agreed with the results by Jenssen, Klein, Salazar, Daluga and Diclemente (2009) who said many learners spend many hours daily immersed on social media like Facebook to bond with others. Rosen (2011) similarly noted that people born from 1990 to 1999 use over 20 hours daily on online sites. Balogun, Awodele, Bello, Oyekunle and Balogun (2017) showed that many Nigerian undergraduate university students spend a lot of time on social media. These findings agreed with the results of the study by Mutua (2011) who noted that over 35% of youths aged 7 to 24 years in Kenya, Uganda and Tanzania use internet. Kenya led in internet use at 49% then Tanzania at 30% and Uganda at 26%. They use most of their time on social media for surfing internet, talking, entertainment and listening to music. Due to the frequent use of social media by learners, the study needed to find out if it had a negative influence on their performance in academics. Respondents gave the answers shown in Table 4.20 on if social media pose any negative challenge on the academics of students.

Table 4.20: Challenges of Social Media on Academic Performance

Effect on academics	Students		Tutors	
	F	%	F	%
Yes	168	55.6	49	65.3
No	134	44.4	26	34.7
Total	302	100.0	75	100.0

Source: Researcher's Survey Data, 2022

Results on the negative effect of social media on academics of students are shown in Table 4.20. It was said by 168 students (55.6%) that it negatively affected their performance in academics and 134 students (44.4%) noted that it did not affect their academics negatively. Furthermore, 49 tutors (65.3%) said social media affects students' academic performance negatively and 26 tutors (34.7%) said it did not. Thus many informants said social media affected the academic performance negatively. Informants who agreed that social media posed a challenge to students' academic performance were asked to rate this negative effect of social media on the academic performance of the learners. Table 4.21 showed the observations obtained.

Table 4.21: Rating of Negative Effect of Social Media on Academic Performance

Rating of effect on academics	Students		Tutors	
	F	%	F	%
High	44	14.6	5	6.7
Medium	183	60.6	51	68.0
Low	75	24.8	19	25.3
Total	302	100.0	75	100.0

Source: Researcher's Survey Data, 2022

Table 4.21 shows that the negative effect of social media on learners' academic performance was moderate. This was because 60.6% of students (183) and 68.0% of tutors (51) asserted

that the negative effect was medium. Moreover, 44 students (14.6%) and 5 tutors (6.7%) noted the negative effect of social media on academic performance of learners was high. Moreover, 19 tutors representing 25.3% and 75 students representing 24.8% were of the opinion that the negative effect of social media on academics of learners was low.

4.6.1.2 Likert Scale Analysis on Frequency of Social Media Use and Academic Performance

Informants were asked in questionnaire to state how frequent social sites use affected learners' academic performance negatively. This was achieved by giving the respondents five-point Likert Scale open ended items having various statements in questionnaires for them to tick or capture their views that showed how they agreed or disagreed. Interview guide was then used to supplement their opinions. In the scale: SD meant strongly agree; A meant agree; N meant not sure (neither agree nor disagree); D meant disagree; and SA meant strongly disagree. Tables 4.22 and 4.23 gave the responses from informants.

4.6.1.2.1 Students' views on Frequent use of Social Media and Academic Performance

The statements shown in item 10a of the questionnaire issued to students was used to find out the way use of online media frequently affect the academics of learners negatively. On the issue of online media wasting the learning time of students by reducing the time they use on studies, 268 (88.8%) students strongly agreed, 30 (9.9%) students agreed and 4 (1.3%) students were not sure. Hence, majority of them agreed that social media waste their learning time as captured by the mean value of 1.13 and standard deviation of 0.370. Their degree of agreement or disagreement are displayed using Table 4.22.

Table 4.22: Students Frequent Social Media use Rating and Academic Performance

Response on frequent usage of social media	N= 302	SA	A	N	D	SD	Mean	St.Dev
It wastes learning time by reducing the time they use on their studies	F	268	30	4	0	0	1.13	0.370
	%	88.8	9.9	1.3	0.0	0.0		
Social media distract them during lesson time and library sessions	F	132	161	3	4	2	1.62	0.645
	%	43.7	53.3	1.0	1.3	0.7		
It diverts students' attention and concentration of towards learning	F	175	117	7	2	1	1.47	0.613
	%	57.9	38.8	2.3	0.7	0.3		
It causes them to postpone doing assignments and submit them late	F	146	150	2	2	2	1.56	0.617
	%	48.3	49.6	0.7	0.7	0.7		
It leads to poor or low academic performance by directly affecting their cumulative / average grade	F	156	145	1	0	0	1.49	0.507
	%	51.7	48.0	0.3	0.0	0.0		
Average score							1.45	0.550

NOTE: N represents number of respondents; F represents frequency; % represents percent; and St. Dev represents standard deviation.

Source: Researcher's Survey Data, 2022

The mean of 1.62 and standard deviation of 0.645 in Table 4.22 shows that the biggest part of 293 students representing 97% were in agreement that social media distracted most of them during lesson time and library sessions. A minority 3 students representing 1.0% were not sure and 6 students representing 2% disagreed with this fact.

On the next item which focused on social media diverting the attention and concentration of learners in their studies, a majority 292 of learners (96.7%) were in consensus with this issue but a minority 7 of learners (2.3%) were neutral and 3 learners (1.0%) refuted. This issue was backed by a mean score of 1.47 and with a standard deviation of 0.613.

Most students representing 98% (296) agreed that social media made them to postpone doing assignments and led them to submit late while a small fraction of students representing 0.7% (2) was not sure and 4 (1.3%). In general, most students were of the opinion that online media made them to postpone doing assignments and submit their assignments late. This assertion was pivoted by the mean score value of 1.56 and a standard deviation of 0.617.

The mean value of 1.49 and a standard deviation of 0.507 finally backed the fact that a very big percentage of learners representing 99.7% (301) when of the view that social media lead to poor academic performance of learners via directly lowering their average grade points but only 1 learner (0.3%) reported not being sure. No learner disagreed with this issue. Therefore, it was generally concluded from the results obtained from students that frequent use of online media by learners affected their academic performance negatively. This was wrapped up by the average mean score value of 1.45 and a standard deviation of 0.550.

4.6.1.2.2 Tutors' views on Frequent use of Social Media and Academic Performance

Table 4.23 gives the rating of tutors on how frequent use of social media affects the academic performance of students negatively. This was attained by allowing tutors to state if they agree or disagree with the items presented to them on a Likert Scale as shown in Table 4.23.

Table 4.23: Tutors Frequent Social Media use Rating and Academic Performance

Response on frequent usage of social media	N= 75	SA	A	N	D	SD	Mean	St.Dev
It wastes learning time by reducing the time they use on their studies	F	51	21	3	0	0	1.36	0.561
	%	68.0	28.0	4.0	0.0	0.0		
Social media distract them during lesson time and library sessions	F	42	30	1	1	1	1.52	0.723
	%	56.0	40.0	1.3	1.3	1.3		
It diverts attention and concentration of students towards learning	F	35	32	5	2	1	1.69	0.822
	%	46.7	42.7	6.6	2.7	1.3		
It causes them to postpone doing assignments and submit them late	F	45	27	2	1	0	1.45	0.622
	%	60.0	36.0	2.7	1.3	0.0		
It leads to poor or low academic performance by directly affecting their cumulative grade point	F	49	20	3	2	1	1.48	0.811
	%	65.3	26.7	4.0	2.7	1.3		
Average score							1.50	0.708

Source: Researcher's Survey Data, 2022

The mean score of 1.36 and standard deviation of 0.561 in Table 4.23 on the issue of social media wasting the learning time of learners showed generally that a majority 96% of tutors (72) were in agreement with the issue but only 3 tutors (4%) were neutral on the issue.

The findings similarly showed that 72 tutors (96%) strongly agreed and agreed that social media distracted students during lesson time and library sessions. A small fraction of 1 tutor (1.3%) was neutral while 2 (2.7%) disagreed and strongly disagreed with this fact. This finding generally implied that social media distracted the studies of students as seen in the mean score of 1.52 and standard deviation of 0.723.

A majority 67 tutors (89.3%) strongly agreed and agreed that social media diverted attention and concentration of learners in their studies. Nevertheless, 5 tutors (6.6%) were not sure, 3 tutors (4.0%) disagreed and disagreed strongly with this finding. This fact was supported by the mean of 1.69 and standard deviation of 0.822.

The mean score of 1.45 and standard deviation value of 0.622 indicates further that the issue of social media causing students to postpone doing assignments and submitting them late was strongly agreed and agreed by 72 (96.0%) tutors but disagreed by 1 (1.3%) tutor and 2 (2.7%) tutors were not sure. Hence, majority of tutors concurred with this issue.

The claim that social media led to low academic performance by directly affecting their cumulative grade points was finally strongly agreed and agreed by 69 tutors (92%). A paltry 3 tutors (4%) were neutral and 3 tutors (4%) disagreed and strongly disagreed with the fact. This was suggested by a mean value of 1.48 and standard deviation of 0.811.

Just like the outcomes got from students, it was noted generally from these results obtained from tutors that the frequent usage of social sites affect the academic performance of students negatively as supported by the average mean score value of 1.50 and the standard deviation

value of 0.708. This view balanced with the study by Marett and Choo (2016) who showed that social media was frequently used by most adolescent learners in secondary schools in Malaysia which in turn affected their academic performance negatively.

4.6.1.3 Qualitative Analysis on Social Media Frequent use and Academic Performance

The analysis obtained from Likert Scale was supplemented by qualitative data from questionnaires and interview guide. For example, an open ended item in the questionnaire required students and tutors to explain briefly how else they thought using social media frequently affect students' academic performance negatively. A student labeled B48 at *Blue Teachers' Training College* (bearing a pseudonym) reported that:

> *"Social media waste the time for personal studies of students as they use google to research for answers of the various questions they are given in class as assignments. They achieve this by browsing in the internet. Googling enables students to get more accurate answers"* (Student B48, Blue TTC: 2022).

A tutor at *Pink TTC* marked P8 observed that:

> *"Social media pose a great challenge to the academic performance of some students making them not to perform well in their academics because they get addicted to these social media" sites* (Tutor P8, Pink TTC: 2022).

One student labeled W56 at *White TTC* similarly reported that:

> *"Frequent use of social media has affect studies of students by making them to get low grades in the examinations they do"* (Student W56, White TTC: 2022).

These agreed with the study by Acheaw and Larson (2015) who found out that the extent of using social media was higher among students in universities in Jordan. They noted that use and addiction to social media significantly affected their grades. Amadi and Ewa (2018) also noted that social media affects the academic performance of Nigerian university students negatively by lowering their grades and reducing the time they spend on studying. Similarly, this finding was in line with the results of the survey by Balogun, Awodele, Bello, Oyekunle and Balogun (2017) which showed that many undergraduate university students in Nigeria spent a lot of their time on social media thus leading to their poor academic performance. Using more time online by students reduce their concentration span in their academics. This comment was echoed by the Principal of *Pink TTC* named as P1 and who quoted that:

> *"Many students use a lot of studying time on social sites lowers their concentration span on their academics and hence affecting their academics negatively by lowering their performance as they at times get busy chatting when they are in class studying or when they were doing assignments"* (Principal P1, Pink TTC: 2022).

The qualitative analysis from the three respondents showed that frequent use of social media affects students' academic performance negatively. To make an inference on the relationship between the two variables, inferential statistics was done with the aim of predicting how the variables correlate and influence each other. The results obtained were as presented below.

4.6.2 Inferential Statistics on Frequent Social Media use and Academic Performance

Parametric analysis was used to test the second null hypothesis (H_O2) which stated that there is no significant relationship between frequency of social media use and level of academic performance of students in TTCs at a significance level set at 0.05. The null hypothesis was

rejected if the p-value is less than 0.05 and concluded that a significant association exists. If the p-value is bigger than 0.05, it was said that a significant association do not exists and so the null hypothesis was upheld. Tables 4.24 and 4.25 shows the responses obtained from questionnaires issued to students and tutors respectively.

4.6.2.1 Association between Frequency of Social Media Use and Academic Performance

A correlation analysis was done using Pearson Product Moment Correlation to make an inference on the association between frequency of social media use as the independent variable and level of academic performance as the caused variable by establishing the direction and strength of the association between the two variables. The results of this correlation analysis was as tabulated in Table 4.24.

Table 4.24: Frequent Social Media use and Academic Performance from Students

		Frequent use of social media	Performance in end of term exam
Frequent use of social media	Pearson Correlation	1	.708**
	Sig. (2-tailed)		.000
	N	302	302
Performance in end of term exam	Pearson Correlation	.708**	1
	Sig. (2-tailed)	.000	
	N	302	302

**. Correlation is significant at the 0.05 level (2-tailed).

Source: Researcher's Survey Data, 2022

Table 4.24 indicates that there was a strongly positive association between frequent use of online media and performance in end of term exam which was statistically significant ($r = 0.708$, $n = 302$, $p = 0.000$) at 0.05 level of significance. Thus, frequent use of social media

correlated positively with academic performance. The findings of the correlation analysis generated from the responses of tutors is as seen in Table 4.25.

Table 4.25: Frequent Social Media use and Academic Performance from Tutors

		Daily usage of social media	Performance in end of term exam
Daily usage of social media	Pearson Correlation	1	.598**
	Sig. (2-tailed)		.000
	N	75	75
Performance in end of term exam	Pearson Correlation	.598**	1
	Sig. (2-tailed)	.000	
	N	75	75

**. Correlation is significant at the 0.05 level (2-tailed).

Source: Researcher's Survey Data, 2022

Table 4.25 showed there was a positive statistically significant moderate correlation between frequency of social media use and academic performance in end of term examination ($r = 0.598$, $n = 75$, $p = 0.000 < 0.05$). It implies that performance in end of term examination improve as students use social media frequently. Thus, Tables 4.24 and 4.25 shows that null hypothesis two was rejected as the p-value obtained was less than 0.05. The alternative hypothesis was accepted implying there exists a significant positive correlation between frequent use of social media and level of academic performance. This study result was showed by Bozkurt, Karadeniz and Kocdar (2017) who said there was a positive association between frequent social media use by learners and their academic performance.

4.6.2.2 Regression on Frequency of Social Media Use and Academic Performance

The magnitude of this positive association between the two variables was tested using linear regression at confidence level of 95%. Tables 4.26 and 4.27 shows the outcomes.

Table 4.26: Regression on Frequent Social Media use and Academic Performance

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.429[a]	.184	.170	.547

a. Dependent Variable: Academic performance of students
b. Predictors: (Constant), Social media waste their time of learning by reducing the time they use on their studies, Social media distract them during lesson time and library sessions, Social media diverts the attention and concentration of students towards learning, Social media cause them to postpone doing assignments and submit them late, Social media leads to poor or low academic performance by directly affecting their cumulative grade point
Source: Researcher's Survey Data, 2022

The Adjusted R Square value of 0.170 in Table 4.26 signified that the independent variables (social media waste their time of learning by reducing the time they use on their studies, it distract them during lesson time and library sessions, it diverts their concentration and attention on learning, it make them postpone doing assignments and led them to submit late leading to poor academic performance by affecting directly their cumulative grade point) contribute 17% of academic performance of students. The remaining 83% of other factors not included in this study affect academic performance. This meant that frequency of social media use had a fairly low effect on academic performance. This was supported by the R value of 0.429 which represented a weak association between the two variables.

The responses from tutors on the same issue are illustrated in Table 4.27.

Table 4.27: Regression on Frequent Social Media use and Academic Performance

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.440[a]	.194	.135	0.653

Source: Researcher's Survey Data, 2022

The Adjusted R Square value of 0.135 in Table 4.27 showed that frequency of social media use influence 13.5% of academic performance. This implied that academic performance was

affected by the remaining 86.5% of other factors not included in the study. This signified a weak correlation between the independent and dependent variables as showed by the R value of 0.440. Data in Tables 4.26 and 4.27 backed the rejection of null hypothesis two $p < 0.05$. To predict if frequency of social media use was a significant predictor of performance in academics, ANOVA test was done according to the suggestion by Creswell (2014).

4.6.2.3 ANOVA Results on Frequent use of Social Media and Academic Performance

Tables 4.28 and 4.29 shows the ANOVA results used to predict the effect of frequency of social media use on academic performance.

Table 4.28: ANOVA on Frequent Social Media Use and Academic Performance

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	19.956	5	3.991	13.320	.000[b]
	Residual	88.696	296	.300		
	Total	108.652	301			

a. Dependent Variable: Academic performance of students
b. Predictors: (Constant), Social media waste their time of learning by reducing the time they use on their studies, Social media distract them during lesson time and library sessions, Social media diverts the attention and concentration of students towards learning, Social media cause them to postpone doing assignments or submit them late, it leads to poor or low academic performance by directly affecting their cumulative/average grade point
Source: Researcher's Survey Data, 2022

Table 4.28 that there was a statistically significant effect of the independent variables (social media waste their time of learning by reducing the time they use on their studies, social media distract them during lesson time and library sessions, social media diverts students' concentration and attention towards learning, social media cause them to postpone doing assignments and led them to submit late, social media leads to poor or low academic performance by directly affecting their average grade point) and the caused variable that is,

academic performance as seen in the ANOVA result [F (5, 296) = 13.320, p = 0.000 < 0.05]. This meant that the independent variable statistically predicted the outcome variable as the p-value (0.000) obtained was less than 0.05. This backed the rejection of the second null hypothesis and acceptance of the alternative hypothesis which was there is a significant relationship between frequency of social media use and academic performance level. Thus, it was concluded that frequency of social media use was a significant predictor of academic performance. Table 4.29 further shows the ANOVA results got from the responses of tutors.

Table 4.29: ANOVA on Frequent Social Media Use and Academic Performance

Model		Sum of Squares	Df	Mean Square	F	Sig.
	Regression	7.072	5	1.414	3.318	.000[b]
1	Residual	29.408	69	.426		
	Total	36.480	74			

Source: Researcher's Survey Data, 2022

Table 4.29 shows academic performance was significantly affected by frequent use social media [F (5, 69) = 3.318, p < 0.05]. This was because frequency of social media use account for 13.5% of all the variation in academic performance. The small p-value (0.000) got backed the rejection of null hypothesis two and hence adoption of the alternative hypothesis which states that frequency of social media use has a negative influence on academic performance. Hence, it was concluded that frequency of social media use predicted academic performance.

4.6.2.4 Coefficients of Linear Regression on Frequency of Social Media Use and Academic Performance

Beta values results from students' and tutors' responses are shown in Tables 4.30 and 4.31.

Table 4.30: Coefficients on Frequent Social Media Use and Academic Performance from Students Data

Coefficients[a]							
Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
1 (Constant)	3.242	.121		26.783	.000		
Social media waste their time of learning by reducing the time they use on their studies	-.100	.092	-.061	-1.089	.277	.867	1.154
Social media distract them during lesson time and library sessions	-.643	.133	-.690	-4.814	.000	.134	7.444
Social media diverts the attention and concentration of students towards learning	.121	.092	.123	1.320	.188	.316	3.164
Social media cause them to postpone doing assignments and therefore submit them late	.283	.155	.290	1.831	.068	.110	9.126
It leads to poor or low academic performance by directly affecting their cumulative grade point	-.103	.127	-.087	-.812	.417	.239	4.180

a. Dependent Variable: Academic performance of students

Regression Equation: $Y = \alpha + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5 + \varepsilon i$

Academic performance, $Y = 3.242 - .100X_1 - .643X_2 + .121X_3 + .283X_4 - .103X_5 + \varepsilon$

Source: Researcher's Survey Data, 2022

Table 4.30 shows the unstandardized and standardized regression beta coefficients were used to show how much the dependent variable varied with one-unit rise in an aspect of the causative variable when all other aspects of the causative variable were kept constant. The coefficients gave the variation expected in caused variable for a one-unit rise in the independent variable. The regression equation that predicted the relation between the variables was: $Y=\alpha+\beta_1X_1+\beta_2X_2+\beta_3X_3+\beta_4X_4+\beta_5X_5+\varepsilon$ where Y is academic performance; X are various

indicators of frequent social media use; and α is a constant. The regression model $Y=3.242-.100X_1-.643X_2+.121X_3+.283X_4-.103X_5+\varepsilon$ shows beta values that was used to determine the effect of the various factors of frequent use of social media.

Negative 0.100 unstandardized beta (β) value in Table 4.30 shows a rise in one unit of social sites wasting the learning time of students by reducing the time they spend on their studies led to a 10% drop in their academic performance. This meant that for each rise of 1 point in social sites wasting learning time, academic performance reduced by -0.100 points. Raising the wastage of learning time when using social media by one standard deviation similarly led to a drop in academic performance by a standardized beta value of -0.061 standard deviation units. Thus, there is no significant effect of social media wasting students' studying time on academic performance as shown by the p-value of $0.277 > 0.05$

The negative β value of 0.643 implied that a one unit rise in social media distracting students during lesson time and library sessions made academic performance to drop by 64.3%. A rise of one standard deviation in social media distracting students during time for lessons and library sessions likewise led to a -0.690 standard deviation units drop in performance in academics. This shows social media distracting students during lesson time and library sessions affect academic performance as backed by the p-value of $0.000 < 0.05$.

The positive 0.121 beta value means a rise of one unit in social media diverting attention and concentration of students on learning lead to a 12.1% rise in academic performance. Further, a one standard deviation improvement in social media diverting concentration and attention on learning lead to a rise in academic performance by 0.123 standard deviation units. This implied that there was a statistically significant impact of social media diverting the attention and concentration of students towards learning on academic performance.

The positive β value (0.283) shows there would be a rise of 28.3% in academic performance for every unit increase in social media causing students to postpone doing assignments and led them to submit late. Further, it is evident that a rise in one standard deviation in social media causing students to procrastinate in doing assignments and led them to submit late rise academic performance by 0.290 standard deviation units. Thus, this shows that there was a statistically significant influence of social media making students to postpone doing assignments and led them to submit late on academic performance.

The negative β value (-0.103) meant that as social media affecting students' average grade points rose by one unit, academic performance dropped by 10.3%. Moreover, a rise of one standard deviation in social media affecting students' cumulative grade points would lower academic performance by -0.087 standard deviation units showing a statistically significant effect of social sites affecting students' average grade points on academic performance.

When the contribution of each element on the caused variable were compared, it was evident postponing to do assignments contributed more (0.283) on academic performance followed by diverting students' attention and concentration on learning (0.121) then wasting of time of learning (-0.100), lowering academic performance by affecting cumulative grade points (-0.103) and lastly distracting students during lesson time and library sessions (-0.643). It is in addition clear from the negative β values that students' academic performance in reduces when there is a rise in social media wasting students, learning time, distracting them during lesson time and affecting their cumulative grade points. On the other hand, increase in social media diverting the concentration and attention of learners on learning as well as causing them to postpone doing assignments led to an increase in students' academic performance.

These results generally showed that all the various aspects of frequency of social media use had no statistically significant effect on academic performance of students since all the p-values obtained were over 0.05 except for social media distracting them during lesson time (0.000). This meant that social sites wasting students' learning time, social media diverting attention and concentration of students towards learning, social media causing them to postpone doing assignments and social media affecting their cumulative grade points directly were not useful in the model when aspects of the independent variable were present in the model and hence they didn't add a substantial contribution in explaining learners' academic performance. This observation is indeed true in real life situation. It was seen from the same table furthermore that each of the aspects of the causative variable had adequate Variance Influence Factor (VIF) < 10 and Tolerance > 0.1. This was in line with the views of Cameroon (2014) who said that in a linear regression model, Tolerance must be greater than 0.1 and VIF must be less than 10 for any predictor.

Similarly, the unstandardized coefficients obtained from the responses of tutors are observed in Table 4.31.

Table 4.31 Coefficients on Frequent Social Media Use and Academic Performance from Tutors Data

Coefficients[a]							
Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
1 (Constant)	2.861	.233		12.266	.000		
Social media waste their time of learning by reducing the time they use on their studies	.179	.384	.143	.467	.642	.124	8.069
Social media distract them during lesson time and library sessions	.431	.181	.445	2.387	.020	.337	2.969
Social media diverts the attention and concentration of students towards learning	-.362	.156	-.424	-2.325	.023	.351	2.848
Social media cause them to postpone doing assignments and therefore submit them late	-.207	.285	-.184	-.727	.469	.183	5.455
It leads to poor or low academic performance by directly affecting their cumulative grade point	-.274	.262	-.317	-1.045	.300	.127	7.870

a. Dependent Variable: Academic performance of students

Regression Equation: $Y = \alpha + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5 + \varepsilon i$

Academic performance, $Y = 2.861 + .179X_1 + .431X_2 - .362X_3 - .207X_4 - .274X_5 + \varepsilon$

Source: Researcher's Survey Data, 2022

From Table 4.31, the regression model for beta coefficients of objective two was: $Y=2.861+.179X_1+.431X_2-.362X_3-.207X_4-.274X_5+\varepsilon$. The positive 0.179 unstandardized beta (β) coefficient showed that a rise in one unit of social media wasting the learning time of students increased academic performance by 17.9%. This meant that for every rise of 1 point of social media wasting the learning time of students, academic performance rise by 0.179 points. Raising the wastage of learning time via social media by one standard deviation also rose

academic performance by a standardized beta value of 0.143 standard deviation units. Thus, social media wasting students' studying time affect academic performance by only 17.9%.

From Table 4.31, the positive 0.431 β value meant that a rise in one unit of social media distracting learners during lesson time and library sessions resulted in a 43.1% rise in academic performance. A one standard deviation increase of social media also distracting students during lesson time and library sessions would result in a 0.445 standard deviation units increase in academic performance. This shows a significant effect of the distraction brought by social media on lesson time and library sessions on their academic performance.

From the table, the negative 0.362 β value implied that an increase of one unit in social media diverting students' attention and concentration towards learning led to a decrease of 36.2% in academic performance. Moreover, a one standard deviation improvement in social media diverting the concentration and attention of learners led to a drop in academic performance by -0.424 standard deviation units. This shows a significant effect of social media diverting the concentration of learners towards learning on academic performance.

The negative 0.207 β value showed that a rise of one unit in social media causing students to postpone doing assignments and led them to submit late leads to a 20.7% drop in performance in academics. It is clear further that a one standard deviation rise in students procrastinating in doing assignments and led them to submit late due to using social media would reduce academic performance by -0.184 standard deviation units. Thus this shows that there was a statistically significant influence of social media making students to postpone doing assignments and led them to submit late on academic performance.

The negative 0.274 β value lastly meant that a unit rise in social media affecting the average grade points of students leads to a 27.4% drop in their academic performance. A rise of one

standard deviation in social media affecting the cumulative grade points of students would likewise lower their academic performance by -0.317 standard deviation units. This showed a significant influence of social sites on the performance of students in academics.

If the contributions of each element on the dependent variables were compared, it was clear that distraction during lesson contributed more (0.431) on academic performance followed by waste of learning time (0.179) then postponing doing assignments (-0.207), affecting the average grade points (-0.274) and finally diverting attention and concentration (-0.362). It is also observed from the negative β values that learners' academic performance dropped when their attention on learning was diverted, when they postponed to do assignments and when social media affects their cumulative grade points. It was clear from Table 4.31 also that the VIF of all the independent variables (predictors) were less than 10 while Tolerance was over 0.1. This agreed with Dhakal (2016) who noted that in a linear regression model, Tolerance must be over 0.1 or VIF must be less than 10 for all the aspects of the independent variable.

The results on both Tables 4.30 and 4.31 agreed with Acheaw and Larson (2015) who found out that the extent of using social media was higher among students in universities in Jordan. They said use and addiction to social sites directly affected their average grades significantly leading to poor or low academic performance. The results got in Table 4.31 concurred also with Marett and Choo (2016) who said that frequent use of social media negatively affect academic performance of Malaysian secondary school adolescent learners. They attribute this negative effect to social media diverting the attention of learners on learning, postponing to do assignments and submitting them late. The outcomes in Table 4.30 further agreed with

the study by Balogun, Awodele, Bello, Oyekunle and Balogun (2017). It showed that many undergraduate university students in Nigeria spend most of their time on social media. This waste of learning time reduces the time they use on their studies. Social sites thus distract them during lesson time and library sessions lead to poor academic performance. Social media in addition affected the academics of Nigerian university students negatively by lowering their grades and reducing the time they take on studying (Amadi & Ewa, 2018). Spending a lot of time online decreases the concentration span of learners in their academics.

In general, based on the findings presented in Tables 4.30 and 4.31, it was evident that there was enough evidence to reject null hypothesis two and accept the alternative hypothesis. It was consequently concluded that there was a statistically significant effect of frequency of social sites use on academics. This meant that frequency of social media use was a significant predictor of academic performance in TTCs in Vihiga County.

4.7 Relationship between Interpersonal Relationship and Academic Performance

Objective three focused on the association between interpersonal relationships and academic performance of students using end of term scores. It was achieved by analyzing both descriptive and inferential statistics and backed by qualitative analysis as explained below.

4.7.1 Descriptive Statistics on Interpersonal Relationship and Academic Performance

The descriptive statistics in this section was analysed by looking at frequencies, Likert Scale and qualitative analysis as discussed below.

4.7.1.1 Frequency Analysis on Interpersonal Relationship and Academic Performance

Respondents were asked to show if they thought social media aid students to improve their interpersonal relationships via socializing with other people. Table 4.32 shows the results.

Table 4.32: Use of Social Media to Improve Students' Interpersonal Relationships

Interpersonal relationships	Students		Tutors	
	F	%	F	%
Yes	212	70.2	59	78.7
No	90	29.8	16	21.3
Total	302	100.0	75	100.0

Source: Researcher's Survey Data, 2022

Table 4.32 showed 90 students (29.8%) and 16 tutors (21.3%) said social sites don't enhance interpersonal relationship of students. Also, 212 students (70.2%) and 59 tutors (78.7%) said social media use improved interpersonal relationships of students. It was thus deduced social media was vital in promoting interpersonal relationships. A question in the questionnaire also required students and tutors to rate the level of interpersonal relationships of students in their college when using social media. Their views were as displayed in Table 4.33.

Table 4.33: Rating of Level of Interpersonal Relationships of Students

Rating of interpersonal relationships	Students		Tutors	
	F	%	F	%
High	192	63.6	46	61.3
Moderate	100	33.1	20	26.7
Low	10	3.3	9	12.0
Total	302	100.0	75	100.0

Source: Researcher's Survey Data, 2022

Table 4.33 shows a majority 192 students representing 63.6% and 46 tutors representing 61.3% reported that the rate of interpersonal relationships among students on social media

was high. Ten students (3.3%) said this rate was low and 100 students (33.1%) said it was moderate while 20 tutors (26.7%) said this rate was moderate and 9 tutors (12%) said it was low. Thus, this analysis showed that the level of interpersonal relationships among students was high as noted by most informants. Informants were asked in the questionnaire to state the people they thought students interact with mostly on social media in order to maintain a regular contact with them. Their views were as shown in Table 4.34.

Table 4.34: People Contacted on Social Media by Students

People contacted on social media	Students		Tutors	
	F	%	F	%
Family members	132	43.7	12	16.0
Teachers	3	1.0	1	1.3
Friends	158	52.3	57	76.0
Strangers	9	3.0	5	6.7
Total	302	100.0	75	100.0

Source: Researcher's Survey Data, 2022

Table 4.34 shows 57 tutors representing 76% said most learners link with friends on social media followed by family members like parents and siblings at 16% as reported by 12 tutors. Five tutors representing 6.7% and one tutors representing 1.3% noted that students interact with strangers and tutors. Over a half of students (158) opined that they connect with friends mostly using social media. It was followed closely by 132 students (43.7%) who noted that students interact with family members on social sites. Three students (1.0%) and 9 students (3.0%) said that they connect with teachers and strangers respectively. Therefore, from these findings, it was deduced that both tutors and students agreed that students connect on social media with friends, family members, strangers and teachers in that order. This agreed with Bozkurt, Karadeniz and Kocdar (2017) study which reported that distance education learners

at Anadolu University in Turkey used social sites like Facebook to talk and link with parents, siblings, friends, fellow students and other people in the society. Gupta, Singh and Marwaha (2013) noted that most distance education learners use various social sites like Facebook for personal interaction. Iffat (2016) study said that ladies in Pakistani universities use Facebook for social interaction, escapism, communication, time passing events like searching profiles of celebrities. In addition, learners utilize Facebook in the learning process to collaborate, talk and interact with others (Manasijević, Živković, Arsić and Milošević, 2016).

Item 13(b) of both students' and tutors' questionnaire required respondents to specify other people that students interact with online apart from the ones listed in Table 4.34. Many of them quoted that students connect with online sellers of products, college administration, employers, advertisers of job vacancies in various companies, and others. The study results were consistent with Archana and Jyotsna (2015) research which opined that as great users of Facebook Indian college learners use it to foster interpersonal relationships for keeping contact with their tutors, parents and search old friends. Aslam and Nazim (2016) argued academia and learners in India use social media to link, connect and relate with other users like friends and family members via constant chatting. This data concurred with results of Asad, Anam and Kanwal (2016) who noted that University of Sargodha students join various groups on different social media like Facebook to interact with various people like friends and family members. These outcomes were same as the one by Moshi, Ndeke, Asatsa and Ngozi (2018) who noted that secondary school learners in Moshi Municipality in Tanzania used various online sites to talk and be in touch with family members and long-time friends. In the Kenyan context, the above findings concurred with Amukune (2013) study who said

university students in Mombasa County in Kenya use social media actively for their personal relations and they interact with each other and other users like their family members, friends, colleagues and other members of the society. Koross and Kosgei (2016) said also that social media has impacted on the Kenyan society today by shaping the communication mode more so among public university students since they widely use social media for communicating and socializing as compared to newspapers, radio, face to face and television.

4.7.1.2 Likert Scale on Interpersonal Relationship and Academic Performance

Both students' and tutors' were asked in item 13(c) of questionnaires to state the events that students engage in when on social media to help them to maintain interpersonal relationships with other people. To achieve this, informants were given four-point Likert Scale open ended items in questionnaires to get their views. The Likert Scale had various statements for them to tick the options that best show their rating. In the scale: 1 = Always, 2 = Sometimes, 3 = Rarely, 4 = Never. The responses from informants were given in Tables 4.35 and 4.36.

4.7.1.2.1 Students' views on Interpersonal Relationship and Academic Performance

Table 4.35 gave the views of students on the activities that learners engage in when on social media to aid them maintain interpersonal relationships with others.

Table 4.35: Social Media Events fostering Students' Interpersonal Relationships

Activities done on Social Media by Students	N= 302	1	2	3	4	Mean	St.Dev
Making new friends	F	202	100	0	0	1.33	0.471
	%	66.9	33.1	0.0	0.0		
Posting and viewing chats, photos, images and videos	F	195	107	0	0	1.35	0.479
	%	64.6	35.4	0.0	0.0		
Viewing and reading the profiles of other people	F	174	122	5	1	1.45	0.549
	%	57.6	40.4	1.7	0.3		
Discussing academic issues with classmates	F	10	99	193	0	2.61	0.553
	%	3.3	32.8	63.9	0.0		
Connecting with colleagues to do class assignments	F	1	90	211	0	2.70	0.468
	%	0.3	29.8	69.9	0.0		
Average score						1.89	0.504

Key: 1-Always; 2-Sometimes; 3-Rarely; and 4-Never
NOTE: N represents number of respondents; F represents frequency; % represents percent; and St. Dev represents standard deviation.
Source: Researcher's Survey Data, 2022

Table 4.35 shows that 202 (66.9%) of students said they always make friends on social media but 100 (33.1%) students said they sometimes make friends on social sites. Thus majority of students argued that learners go to social sites to make friends. This assertion was backed by a mean score of 1.33 with a standard deviation of 0.471. This result can be corroborated with Aslam and Nazim (2016) who said that academia and learners in India use social media to link with family members or friends via constant chatting. Asad, Anam and Kanwal (2016) said also that youth at University of Sargodha use social media to link up with other users.

On the issue of post and view chats, photos, images and videos on social media 195 students (64.6%) picked always and 107 (35.4%) selected sometimes. The mean value of 1.35 and a standard deviation of 0.479 backed this fact. This can be corroborated with the results by Abdullah, Mariah and Rahmat (2014) who noted that social media allow people to share ideas, images, posts events, interests and events with other users in their social network.

On the issue of students viewing and reading the profiles of other users, Table 4.24 indicated that 174 students representing 57.6% observed they do it always, 122 students representing 40.4% asserted that they sometimes do it, 5 students representing 1.7% noted they rarely do it and 1 representing (0.3%) reported they never do it. These results implied that majority of learners used social media to view and read the profile of other people. The mean score of 1.45 with a standard deviation of 0.549 confirmed this claim.

The mean of 2.61 and standard deviation of 0.553 was got from 10 students (3.3%) who said they always discuss academic issues with classmates, 99 (32.8%) noted that they sometimes discuss academic issues with classmates and 193 (63.9%) said they rarely discuss academic issues with classmates. Thus, this finding showed that most learners rarely use social sites to discuss academic issues with their classmates. Aslam and Nazim (2016) observed that academia and learners in India use social media to share issues related to coursework.

Regarding students using social sites to connect with colleagues to do assignments, 1 student representing 0.3% showed that they always do so, 90 students representing 29.8% observed they sometimes do so and 211 students representing 69.9% argued they rarely do so. This meant that majority of students rarely use social media to link with their colleagues to do class assignments. This idea was backed by a 2.70 mean and 0.468standard deviation.

It was generally concluded from the results got from students that learners use social media to keep their interpersonal relationships with other people. This is supported by the average mean of 1.89 and average standard deviation of 0.504. This finding is similar with the results of Archana and Jyotsna (2015) who noted that users of social media like Facebook and others use them to foster social interpersonal relationships and to keep contact with others people.

4.7.1.2.2 Tutors' views on Interpersonal Relationship and Academic Performance

Table 4.36 gives the rating of tutors on activities students do when on social media to aid them maintain interpersonal relationships with others. This was attained by allowing tutors to rate the items listed on a Likert Scale as shown in Table 4.36.

Table 4.36: Social Media Events fostering Interpersonal Relationships from Tutors

Activities done on Social Media by Students	N= 75	1	2	3	4	Mean	St.Dev
Making new friends	F	46	29	0	0	1.39	0.490
	%	61.3	38.7	0.0	0.0		
Posting and viewing chats, photos, images and videos	F	53	21	1	0	1.31	0.492
	%	70.7	28.0	1.3	0.0		
Viewing and reading the profiles of other people	F	61	11	2	1	1.24	0.566
	%	81.3	14.7	2.7	1.3		
Discussing academic issues with classmates	F	1	11	63	0	2.83	0.415
	%	1.3	14.7	84.0	0.0		
Connecting with colleagues to do class assignments	F	1	15	59	0	2.77	0.452
	%	1.3	20.0	78.7	0.0		
Average score						1.91	0.483

Source: Researcher's Survey Data, 2022

It is evident from 46 tutors (61.3%) that students always make friends on social media while 29 tutors (38.7%) said students sometimes make friends on social sites as seen in Table 4.36. This brought a 1.39 mean value and 0.490 standard deviation which meant students make friends on social media. This finding was in tandem with the results of the study by Archana and Jyotsna (2015) who said social site users use them to search old friends.

On posting and viewing chats, photos, images and videos, 53 (70.7%) tutors argued students always do so, 21 (28.0%) noted students do so sometimes and 1 tutor (1.3%) reported rarely. This implied that most tutors saw that learners use social sites for posting and viewing. This was pivoted by a 1.31 mean score and 0.492standard deviation. Asad, Anam and Kanwal (2016) opined that youth at University of Sargodha used social media to post their comments and ideas by video conferencing.

Most of 61 tutors (81.3%) said students always view and read profiles of other people while 11 (14.7%) tutors reported students sometimes do so. A paltry 2 (2.7%) tutors said students rarely do so and 1 (1.3%) tutor said students never do so. The results implied that most tutors generally agreed that students always view and read profiles of other people. This claim was supported by the mean value of 1.24 and standard deviation of 0.566.

The statement on discussion of academic issues with classmates was opposed by 63 (84.0%) tutors who noted that students rarely do so while 11 (14.7%) tutors noted they sometimes do so but 1 (1.3%) tutor said they always do so. The mean of 2.83 and standard deviation of 0.415 was an indicator to this observation. The same issue was observed by Asad, Anam and Kanwal (2016) who showed that learners use social sites for learning purposes by discussing various topics with their colleagues.

One tutor representing 1.3% perceived that students always connect with their colleagues to do assignments. Fifteen tutors representing 20.0% perceived they sometimes do so and 59 tutors representing 78.7% perceived they rarely do so. This assertion was shown by a mean of 2.77 and standard deviation of 0.452 indicating that students occasionally link with their colleagues on social media to do class assignments.

It was in summary noted from the results gathered from tutors that learners used social media to keep their interpersonal relationships with other people as supported by the average mean score value of 1.91 and the average standard deviation value of 0.483.

The views shown in Tables 4.35 and 4.36 were consistent with the findings from the study by Alloway, Horton, Alloway and Dawson (2013) which said that social media foster social interactions and interpersonal relationships among various people. For instance, Veletsianos and Navarrete (2012) said learners backed each other in their academics when they interact

socially with one another via the groups they form on social media. The responses above got from students and tutors can be corroborated with those of the study by Bozkurt, Karadeniz and Kocdar (2017) which said that use of social media rise the social interaction of distance education learners by 47.1% and 69.4% of them primarily use social sites to be in touch with peers or family (Bozkurt, Karadeniz & Kocdar, 2017). The study by Amukune (2013) gave similar responses by saying university students in Mombasa County in Kenya access social media consistently and especially Facebook to interact and relate with each other and other users like their family members, friends, colleagues and other members of the society.

4.7.1.3 Qualitative Analysis of Interpersonal Relationship and Academic Performance

The results obtained from the Likert Scales above was supplemented by qualitative data from questionnaires and interview guide. For example, an open ended item in the questionnaire required students and tutors to briefly explain other events they thought students engaged in when socializing on social media to keep their interpersonal relationships with others. In this regard, a student labeled R39 at *Red TTC* (bearing a pseudonym) established that: *"most learners use social media to entertain themselves. They mostly download and listen to music while others download video clips to watch them"* (Student R39, Red TTC: 2022).

The opinion of this student marked R39 concurred with Aslam and Nazim (2016) who said academia and learners in India use social media to keep themselves updated and entertained regularly. Similarly, a study by Rosen (2011) noted that 8 to 18 year-old youths use about 7 hours 38 minutes on entertainment daily. Mutua (2011) noted that many youths aged 7 to 24 years in Kenya, Uganda and Tanzania use most of their time for entertainment and listening

to music on social media. Students again use social media to get information on various issues. This fact was raised by a tutor labeled Y7 at *Yellow TTC*. This tutor reported that:

> *"Students use social sites to get very current and latest information on various issues affecting their lives. Such information includes news about Covid-19 pandemic, news on current issues affecting the education sector like unrests in schools, among others"* (Tutor Y7, Yellow TTC: 2022).

The information got from this tutor marked Y7 agreed with Marshall (2009) who noted that different people gather on various online sites to watch or listen to the same news worldwide like news about disasters and others. The study outcomes by Bozkurt, Karadeniz and Kocdar (2017) further asserted that over 82% of distance education students Anadolu University in Turkey mainly use social sites to get information. Another tutor at *Green TTC* marked G4 said social sites are currently used for politics and to follow politics. The tutor reported that:

> *"Both local and international politics can presently be followed online. Students get such current news from various social media sites"* (Tutor G4, Green TTC: 2022).

Social media is further used by students to watch different games, sports and athletics. A student marked P28 at *Pink TTC* said: *"social media bond users by bringing all users sharing the same interests together like football lovers globally come together to watch the same game either physically in football fields or on television"* (Student P28, Pink TTC: 2022).

The thoughts of this student labeled P28 agreed with what Marshall (2009) noted that social media bring users sharing the same values together for instance via gathering on online social forums while watching coverage of events like sports, games, etcetera. This means that the present new generation is currently using social media for social interaction globally. It was noted also that some learners use social media for online marketing since they use it to buy

and sell various products online as well as searching for advertisements. The Principal of *White TTC* who was marked W1 argued that:

> *"Students use various online marketing sites like Jumia to search for various items online and trade by buying items. They also search for adverts of offers on various products online so that they can buy the products"* (Principal W1, White TTC: 2022).

A student labeled Y42 at *Yellow TTC* said they use online sites to check for vacancies online in various companies and organization and apply for such jobs. This student noted that:

> *"Students no longer apply for jobs manually. They search for these jobs online and apply for them online"* (Student Y42, Yellow TTC: 2022).

This qualitative analysis shows that students engage in various events on social sites to aid them to keep their interpersonal relationships with others. It was vital to test inferentially if a correlation existed between interpersonal relationships and academic performance as well as its influence on their academics. The findings of this inference were as discussed below.

4.7.2 Interpersonal Relationship and Academic Performance Inferentials

Null hypothesis three was tested using inferential statistics to check if there is a relationship between interpersonal relationships and academic performance at 0.05 significance level. If p-value was less than 0.05, the null hypothesis was rejected meaning a significant correlation existed and vice versa. Tables 4.37 and 4.38 shows the correlation analysis generated.

4.7.2.1 Correlating Interpersonal Relationship and Academic Performance

Pearson Product Moment Correlation was used to relate the causative and caused variables in hypothesis three. The correlation analysis results from students are shown in Table 4.37.

Table 4.37: Interpersonal Relationship and Academic Performance from Students

		Interpersonal relationship	Performance in end of term exam
Interpersonal relationship	Pearson Correlation	1	.543**
	Sig. (2-tailed)		.000
	N	302	302
Performance in end of term exam	Pearson Correlation	.543**	1
	Sig. (2-tailed)	.000	
	N	302	302

**. Correlation is significant at the 0.05 level (2-tailed).

Source: Researcher's Survey Data, 2022

Table 4.37 shows that the correlation between interpersonal relationship and performance in end of term examination was statistically significant and moderately positive ($r = 0.543$, $n = 302$, $p = 0.000 < 0.05$). This result means that interpersonal relationship correlates with academic performance. Similarly, Table 4.38 shows the correlation analysis got from tutors.

Table 4.38: Interpersonal Relationship and Academic Performance from Tutors

		Interpersonal relationship	Performance in end of term exam
Interpersonal relationship	Pearson Correlation	1	.583**
	Sig. (2-tailed)		.000
	N	75	75
Performance in end of term exam	Pearson Correlation	.583**	1
	Sig. (2-tailed)	.000	
	N	75	75

**. Correlation is significant at the 0.05 level (2-tailed).

Source: Researcher's Survey Data, 2022

The result displayed in Table 4.38 showed that there was a positive statistically significant moderate correlation between interpersonal relationship and academic performance in end of term examination ($r = 0.583$, $n = 75$, $p = 0.000$) at 0.05 level of significance. Hence, interpersonal relationship correlates with level of the academic performance.

Tables 4.37 and 4.38 shows in summary that null hypothesis three was rejected since the p-value got (.000) was below .05. The alternative hypothesis adopted meant that a significant correlation exists. The study noted interpersonal relationship correlated with performance in level of academics of learners in TTCs in the county since they were statistically significant.

4.7.2.2 Regression on Interpersonal Relationship and Academic Performance

The magnitude of this positive correlation between interpersonal relationships and academic performance in the third hypothesis was established using linear regression at a 95% level of confidence. The findings of the analysis are shown in Tables 4.39 and 4.40.

Table 4.39: Regression on Interpersonal Relationships and Academic Performance

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.258[a]	.067	.051	.446

a. Dependent Variable: Academic performance of students
b. Predictors: (Constant), Connecting with colleagues to do class assignments, Viewing and reading the profiles of other people, Posting and viewing chats, photos, images and videos, discussing academic issues with classmates, Making new friends
Source: Researcher's Survey Data, 2022

The Adjusted R Square value of 0.051 in Table 4.39 indicates that the independent variables (connecting with colleagues to do class assignments; viewing and reading profiles of other people; posting and viewing chats, photos, images and videos; discussing academic issues with classmates; and making new friends) has a 5.1% impact on academic performance. This means that interpersonal relationship has a fairly low effect on academic performance since 94.9% of other factors beyond the scope of this research affected it. This was in addition supported by the R value of 0.258 which represented a weak association between the two variables. The responses from tutors on the same issue are presented in Table 4.40.

Table 4.40: Regression on Interpersonal Relationships and Academic Performance

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.473[a]	.224	.167	0.376

Source: Researcher's Survey Data, 2022

Table 4.40 shows that interpersonal relationships accounted for 16.7% of the variations in academic performance as signified by the Adjusted R Square value of 0.167. This implies that 83.3% of other factors not included in this study influence academic performance. This indicates that interpersonal relationships have a low effect on academic performance. This represents a weak relationship between the causative and dependent variables. The R value of 0.473 backed this weak relationship between interpersonal relationships and performance in academics. The facts observed in Tables 4.39 and 4.40 supported the rejection of the third null hypothesis of this research at a significance level of $P < 0.05$.

4.7.2.3 ANOVA on Interpersonal Relationship and Academic Performance

To determine if interpersonal relationship was indeed a significant predictor of performance in academics, ANOVA test was done based on the argument by Creswell (2014). Tables 4.41 and 4.42 shows the ANOVA outcomes obtained from students and tutors respectively.

Table 4.41: ANOVA on Interpersonal Relationships and Academic Performance

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	4.221	5	.844	4.238	.001[b]
	Residual	58.958	296	.199		
	Total	63.179	301			

Source: Researcher's Survey Data, 2022

ANOVA result in Table 4.41, that is, [F (7, 296) = 4.238, p = 0.001 < 0.05] shows that the causative variables (joining with colleagues to do class assignments; viewing and reading the profiles of other people; posting and viewing chats, photos, images and videos; making new friends; and discussing academic issues with classmates) predicted the caused variable statistically since the p-value (0.001) obtained was lower than 0.05. This therefore supported the rejection of the third null hypothesis and acceptance of the alternative hypothesis which stated that there is a significant relationship between interpersonal relationships and level of performance in academics. Table 4.42 shows the ANOVA results got from tutors' responses.

Table 4.42: ANOVA on Interpersonal Relationships and Academic Performance

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	4.930	5	.986	8.887	.000[b]
	Residual	7.656	69	.111		
	Total	12.587	74			

Source: Researcher's Survey Data, 2022

Table 4.42 shows interpersonal relationships influence academic performance significantly as seen from the ANOVA findings [F (5, 69) = 8.887, p < 0.000] at 0.05 significance level. The small p-value of .000 obtained backed the rejection of the third null hypothesis and thus adoption of the alternative hypothesis which states that interpersonal relationships have a negative influence on academic performance of students in TTC in Vihiga County.

4.7.2.4 Coefficients of Linear Regression on Interpersonal Relationship and Academic Performance

The outcomes of the unstandardized and standardized regression beta coefficients shown in Tables 4.43 and 4.44 were used to predict how caused variable varied with a unit rise in each aspect of the interpersonal relationship when all its other aspects were kept constant.

Table 4.43: Coefficients results on Interpersonal Relationships and Academic Performance using Data from Students

Coefficients[a]							
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.829	.752		1.102	.271		
	Making new friends	.057	.163	.059	.353	.724	.112	8.918
	Posting and viewing chats, photos and videos	-.088	.134	-.092	-.656	.512	.160	6.263
	Viewing and reading profiles of other people	.004	.102	.004	.035	.972	.213	4.694
	Discussing academic issues with classmates	.185	.135	.223	1.371	.171	.119	8.387
	Connecting with colleagues to do class assignments	.010	.142	.010	.067	.947	.149	6.725

a. Dependent Variable: Academic performance of students

Regression Equation: $Y = \alpha + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5 + \varepsilon$

Academic performance, $Y = .829 + .057X_1 - .088X_2 + .004X_3 + .185X_4 + .010X_5 + \varepsilon$

Source: Researcher's Survey Data, 2022

The regression coefficients shown in Table 4.43 give the expected change in academic performance for a one-unit rise in the independent variable. The regression model giving the relationship between the variables was: $Y=\alpha+\beta_1X_1+\beta_2X_2+\beta_3X_3+\beta_4X_4+\beta_5X_5+\varepsilon$ where Y was academic performance; α was a constant; and X were the various predictors of interpersonal relationships. The regression model showing the beta coefficients for objective three that was used to check the influence of the various factors of interpersonal relationships in Table 4.43 was: $Y=.829+.057X_1-.088X_2+.004X_3+.185X_4+.010X_5+\varepsilon$. The positive 0.057 unstandardized beta (β) value shows that an increase in one unit of making new friends led to a 10% increase in their academic performance. This meant that academic performance raised

by 0.057 points for every increase of one point in making new friends. An increase of one standard deviation in making new friends moreover led to an increase in academic performance by a standardized beta coefficient of 0.059 standard deviation units. Thus, making new friends has a statistically significant influence on academic performance.

The negative 0.088 β value in Table 4.43 implied that a rise in one unit of posting and viewing chats, photos and videos via social media would make academic performance to drop by 8.8%. A rise of one standard deviation in posting and viewing photos, videos and chats on social sites could further result in a drop of -0.092 standard deviation units in academic performance. This therefore shows a statistically significant effect of posting and viewing chats, photos and videos via social media on academic performance.

The positive 0.004 beta coefficient means that a rise of one unit in viewing and reading the profiles of others on social media would lead to a negligible rise in academic performance by 0.4%. Similarly, a rise of one standard deviation in viewing and reading the profiles of other users on social media was likely to lead to a rise in performance in academics by 0.004 standard deviation units. This implied that there was a small statistically significant impact of viewing and reading the profiles of other users online on academic performance.

The positive 0.185 β value shows that there would be a rise of 18.5% in performance in academics for every unit rise in using social sites to discuss academic issues with classmates. It was further evident that an increase in one standard deviation of social media being used to discuss academics with classmates was to raise academic performance by 0.223 standard deviation units. Thus, this shows that there was a statistically significant effect of using social media to discuss academics with classmates on academic performance.

The positive 0.010 β value finally meant that as connecting with colleagues using social sites to do class assignments rose by one unit, academic performance rose by 1%. A rise of one standard deviation in using social media to join with colleagues to do class assignments likewise raised academic performance by 0.010 standard deviation units. This showed a statistically significant influence of social media aiding learners to connect with colleagues to do class assignments to improve their academic performance.

On rating the contribution of the factors on the caused variable, it was evident that discussing academic issues with classmates had the highest contributing effect of 0.185 on performance in academics then making new friends (0.057). These two factors added more to performance in academics. They were followed by joining colleagues to do class assignments (0.010), viewing and reading the profiles of other people (0.004) and lastly posting and viewing chats, photos and videos (-0.088). The negative β values besides clearly also showed that students' academic performance dropped when there was a rise in posting and viewing chats, photos and videos. However, an increase in making new friends, viewing profiles of other people, discussing academic issues with classmates and joining colleagues to do assignments raised academic performance. These results generally showed that all the various aspects of interpersonal relationships had no statistically significant effect on academic performance as all the p-values got were over .05. This meant that making new friends; posting and viewing photos, videos and chats; viewing and reading profile of others; connecting with colleagues to do assignments; and discussing academic issues with others were not vital in the model since they did not contribute substantially in explaining academic performance. Similarly, the regression coefficients got from tutors are shown in Table 4.44.

Table 4.44 Coefficients results on Interpersonal Relationships and Academic Performance using Data from Tutors

Coefficients[a]							
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	2.231	.328		6.809	.000		
	Making new friends	.056	.154	.066	.363	.717	.338	2.963
	Posting and viewing chats, photos and videos	-.059	.152	-.070	-.388	.699	.343	2.913
	Viewing and reading profiles of other people	.059	.099	.080	.593	.555	.612	1.634
	Discussing academic issues with classmates	.112	.146	.112	.766	.446	.522	1.914
	Connecting with colleagues to do class assignments	-.507	.139	-.557	-3.641	.001	.482	2.076

a. Dependent Variable: Academic performance of students

Regression Equation: $Y = \alpha + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5 + \varepsilon$

Academic performance, $Y = 2.231 + .056X_1 - .059X_2 + .059X_3 + .112X_4 - .507X_5 + \varepsilon$

Source: Researcher's Survey Data, 2022

Table 4.44 shows that the regression equation for the unstandardized beta (β) coefficients for objective three obtained from tutors' responses was: $Y = 2.231 + .056X_1 - .059X_2 + .059X_3 + .112X_4 - .507X_5 + \varepsilon$. The positive 0.056 beta value shows that a rise in one unit of using social media to make new friends raise academic performance by 5.6%. This meant that for every rise of one point in use of social sites to make new friends, academic performance rise by 0.056 points. Increasing making new friends on social sites by one standard deviation furthermore increase academic performance by a standardized beta coefficient of 0.066 standard deviation units. Making new friends on social media thus affects academic performance by only 5.6%.

The negative 0.059 β-value in Table 4.44 meant that an increase in one unit of posting and viewing chats, photos, images and videos on social media results in a 5.9% drop in academic performance. A one standard deviation increase in posting and viewing photos, images, chats and videos on social sites moreover led to a 0.070 standard deviation units drop in academic performance. This shows a significant effect of posting and viewing chats, photos, images and videos on social media on their performance in academics.

β value of positive 0.059 implied that a rise of one unit using social media to view and read the profile of other people led to a rise of 5.9% in academic performance. An improvement of one standard deviation in using social media to view and read the profile of other people besides led to a rise in academic performance by 0.080 standard deviation units. This shows an effect of viewing and reading the profile of other people on academic performance.

The positive 0.112 β value showed that a rise of one unit in using social media to discuss academic issues with classmates results in a 11.2% rise in academic performance. Further, it was evident that a rise of one standard deviation in students using social media to discuss academic issues with classmates would increase academic performance by 0.112 standard deviation units. Thus this shows that there was a statistically significant effect of using social media to discuss academic issues with classmates on academic performance.

The negative 0.507 β value lastly meant that a unit rise in learners using social media to link with colleagues to do assignment in class led to 50.7% drop in academic performance. A one standard deviation rise in using it to link with colleagues to do class assignments also lower academic performance by -0.557 standard deviation units. This means there was a significant effect of using social sites to link with colleagues to do class assignments on academics

If the contribution of each elements of the causative variable on the dependent variable was compared, then it was observed that discussing academic issues with classmates contributed more (0.112) on academic performance followed by viewing and reading the profile of other people (0.059) then making new friends (0.056), posting and viewing chats, photos, images and videos (-0.059) and finally connecting with colleagues to do class assignments (-0.507). To add to that, it was noted from the negative β values that students' academic performance dropped when they join with colleagues to do class assignments as well as when they post and view chats, photos, images and videos.

Both Tables 4.43 and 4.44 noted that the regression model did not violate the assumptions of multi-collinearity but it obeyed all the requirements of a multi-collinearity test for multiple regression analysis as Variance Influence Factor (VIF) of all the aspects of the independent variable were less than 10 and Tolerance was greater than 0.1. This balanced or agreed with the arguments of both Dhakal (2016) and Creswell (2014) who reported that the value of Tolerance > 0.1 and VIF < 10 for any predictor in a linear regression model.

The responses of both students and tutors in Tables 4.43 and 4.44 differ with the findings of Manasijević, Živković, Arsić and Milošević (2016) who showed that academic performance drop as learners use social sites to make new friends, and post clips, texts and images. The present study agreed with Bozkurt, Karadeniz and Kocdar (2017) study which reported that academic performance improved of as distance education learners at Anadolu University in Turkey use social sites like Facebook to collaborate and link with colleagues especially in doing class assignments. Further, Iffat (2016) study noted that ladies in Pakistani universities who use social sites to link with colleagues to discussing academic issues and do assignments

do well in their studies than those who do not. Similarly, this study result concurred with Archana and Jyotsna (2015) study which opined that college learners in India use social sites like Facebook and others greatly to foster interpersonal relationships and keep contact with parents, tutors and search old friends. This makes them to get low grades in their studies since they use most of their time surfing internet to meet new friends.

The study by Gupta, Singh and Marwaha (2013) noted that most distance education learners who spend most of their time using various types of social media like Facebook for personal interaction by viewing and reading profile of people fail in their studies. Aslam and Nazim (2016) said Indian learners who frequently use social sites to relate with others like peers via constant chatting do poorly in their studies. This data agreed with Asad, Anam and Kanwal (2016) study which said that students at University of Sargodha join various groups on social sites to interact with various people like friends. This agreed with Amukune (2013) who said Kenyan university learners in Mombasa County use social sites mainly for personal relations and that they interact with other users like friends thus lowering their academic performance. It was concluded from the results in Tables 4.43 and 4.44 that interpersonal relationship was a significantly predictor of academic performance in TTCs in the county. This was evidenced sufficiently by the rejection of the third null hypothesis and accept the alternative hypothesis.

4.8 Relationship between Online Attacks and Academic Performance of Students

Objective four gave the relation between online attacks and students' academic performance in TTCs in the county using end of term scores. To do so, both descriptive and inferential statistics were analysed and then backed up with qualitative analysis as explained below.

4.8.1 Descriptive Statistics on Online Attacks and Academic Performance

This study analysed descriptive statistics in relation to frequencies, Likert scale and qualitative analysis as explained in the following sections.

4.8.1.1 Frequency Analysis on Online Attacks and Academic Performance

Respondents were required in the questionnaire to state if they thought people are attacked online when using social media. The findings were captured in Table 4.45.

Table 4.45: Online Attacks on Social Media

Online attacks on social media	Students		Tutors	
	F	%	F	%
Yes	162	53.6	41	54.7
No	140	46.4	34	45.3
Total	302	100.0	75	100.0

Source: Researcher's Survey Data, 2022

This table depicted that over a half of both students (53.6%) and tutors (54.7%) reported that students are attacked online. Similarly, 46.4% of students and 45.3% of tutors disagreed students are attacked online on social media. This results showed that students face online attacks when using social media. This was in agreement with the outcome by SIMElab Africa (2019) which said harassments on social sites were increasingly becoming a common occurrence in Kenya since technology remove traditional boundaries which used to protect victims from online attackers. In order to know the gender that is more prone to online attacks, respondents presented the views seen in Table 4.46.

Table 4.46: Gender Commonly Attacked Online on Social Media

Gender attacked online mostly	Students		Tutors	
	F	%	F	%
Males	98	32.5	29	38.7
Females	204	67.5	46	61.3
Total	302	100.0	75	100.0

Source: Researcher's Survey Data, 2022

Table 4.46 showed that about a sixth of both students (204) and tutors (46) noted that females are more prone to online attacks on social sites. Nearly a third of students (98) and tutors (29) asserted that males were at risk of being attacked online on social sites. The results in Table 4.46 showed in summary ladies were more highly prone to online attacks than their male counterparts when using social media. This finding was consistent with the report by SIMElab Africa (2019) which said that ladies are more likely to face online attacks compared to men. Item 15(c) in both students' and tutors' questionnaires rated the magnitude of online attacks people faced when on social media. The outcomes were as narrated in Table 4.47.

Table 4.47: Rating Magnitude of Online Attacks encountered by Students

Rating magnitude of online attacks	Students		Tutors	
	F	%	F	%
High	173	57.3	39	52.0
Moderate	124	41.1	29	38.7
Low	5	1.6	7	9.3
Total	302	100.0	75	100.0

Source: Researcher's Survey Data, 2022

Table 4.47 shows that about a half of both students (173) and tutors (39) said online attacks rate was high. Also, 124 students representing 41.1% and 29 tutors representing 38.7% noted the rate was medium while 5 students representing 1.6% and 7 tutors representing 9.3% said

that the rate was low. Hence, in general slightly over half of students and tutors argued that the rate of online attacks was high. This agreed with the cross-sectional study by Marett and Choo (2016) who said the chances of Malaysian secondary school learners being victimized when using social sites was very high. These results were consistent with the SIMElab Africa (2019) report which noted harassment is rapidly becoming common on social media as the causers of online crimes are few miles away from their victims since technology is replacing the traditional borders. It was thus concluded that the threats posed by usage of social media is increasing exponentially. On probing the issue of online attacks further, question 16(a) in questionnaires intended to know if victims always know the offenders or people who attack them online on social sites. Table 4.48 gave the informants' views in relation to this issue.

Table 4.48: Knowledge of Online Attackers by Victims

Victims knowing online attackers	Students		Tutors	
	F	%	F	%
Yes	72	23.8	6	8.0
No	230	76.2	69	92.0
Total	302	100.0	75	100.0

Source: Researcher's Survey Data, 2022

Table 4.48 showed that over at most a quarter of students (72) and less than a tenth of tutors (6) noted that victims know the people who attack them online on social media. However, 69 tutors (92%) and at least three quarters of students (230) said the victims do not know the online attackers. It was in general concluded that from this results that most victims of online attacks do not know the perpetrators or the people who attack them online when using social media. In an attempt to discover who probably were the perpetrators of online attacks on victims, tutors and students were asked in item 16(b) of the questionnaire to state whom they thought were the main source of online attacks. The results were given in Table 4.49.

Table 4.49: Perpetrators of Online Attacks on Victims

Perpetrators of online attacks	Students		Tutors	
	F	%	F	%
Friends	4	1.4	3	4.0
Family members	1	0.3	0	0.0
Strangers (people they do not know)	297	98.3	72	96.0
Total	302	100.0	75	100.0

Source: Researcher's Survey Data, 2022

Table 4.49 shows that nearly all students (297) and all tutors (72) said strangers were the key perpetrators of online attacks since a small fraction of students (4) and tutors (3) noted that the attackers were friends. One student representing 0.3% and no tutor said that the attackers were family members. Thus people who are not known to victims are the key facilitators of online attacks. Table 4.50 shows the type of social sites where online attacks are common.

Table 4.50: Types of Social Media where Online Attacks were common

Rampantness of online attacks	Students		Tutors	
	F	%	F	%
Facebook	183	60.6	53	70.7
WhatsApp	108	35.7	19	25.3
Twitter	9	3.0	2	2.7
Instagram	2	0.7	1	1.3
YouTube	0	0.0	0	0.0
Total	302	100.0	75	100.0

Source: Researcher's Survey Data, 2022

Table 4.50 shows that a majority 183 of students representing 60.6% found out online attacks were rampant on Facebook followed by WhatsApp at 35.7% as reported by 108 students. A minority 9 students representing 3.0% said online attacks were common on Twitter and 2 students representing 0.7% noted it was common on Instagram. From Table 4.50, 53 tutors

(70.7%) said online attacks were rampant on Facebook, 19 tutors (25.3%) said it happen on WhatsApp, 2 tutors (2.7%) noted it happened on Twitter and 1 tutor (1.3%) said it occur on Instagram. Online attacks do not occur on YouTube. Thus, this results showed online attack was a common phenomenon on Facebook and WhatsApp but it occurs very rarely on Twitter and Instagram. Similarly, Marett and Choo (2016) opined school children who were frequent on social sites like Facebook, Instagram, and others are at high risk of being attacked online. With these increasing cases of online attacks, the research intended to know the views of informants regarding whether people report incidences of online attacks they encounter on social media. Table 4.51 presents their views.

Table 4.51: Reporting cases of Online Attacks by Victims

Reporting online attack cases	Students		Tutors	
	F	%	F	%
Yes	59	19.5	13	17.3
No	243	80.5	62	82.7
Total	302	100.0	75	100.0

Source: Researcher's Survey Data, 2022

Table 4.51 shows that over 80% of both students (243) and tutors (62) noted that people do not report cases of the attacks they face online on social media. A minority a fifth of students (59) and tutors (13) noted that users report incidences of the online attacks they face on social media. This data concluded that most people do not report online attacks cases. Further, the study wanted to know via item 18(c) of the questionnaire where the minority respondents who said YES can report cases of online attacks. Table 4.52 shows the outcomes.

Table 4.52: Reporting of Online Attacks Cases by Victims

Reporting online attack cases	Students		Tutors	
	F	%	F	%
College administration or tutor	5	1.7	3	4
Friends like fellow students	52	17.2	6	8
Family members like parent	23	7.6	4	5.3
Security agency like police	8	2.6	1	1.3
Group or social media administrator	212	70.2	61	81.4
Others	2	0.7	0	0.0
Total	302	100.0	75	100.0

Source: Researcher's Survey Data, 2022

Table 4.52 noted that 212 students representing 70.2% and 61 tutors representing 81.4% can report cases of online attacks to the administrators of the group or of that social media. One tutor (1.3%) and 8 students (2.6%) can tell security agencies like police. Four tutors (5.3%) and 23 students (7.6%) can tell family members like parents. Six tutors (8%) and 52 students (17.2%) can inform friends like their fellow students. Five students (1.7%) and 3 tutors (4%) can tell the collage administration or their tutors. It is evident from this data that most victims prefer to tell the administrators of that social media and their friends about the online attacks they encounter on social sites. Very few students can report such cases to security agencies like the police and college administration or tutors. As such, there was need to know why most people do not report cases of online attacks to security agencies like police. The outcomes from students and tutors were as reflected in Table 4.53.

Table 4.53: Reasons for not Reporting Cases of Online Attacks to the Police

Reasons for not reporting	Students		Tutors	
	F	%	F	%
Fear of Stigmatization	85	28.2	13	17.3
Not aware about the law	173	57.3	38	50.7
Fear to be ashamed	33	10.9	17	22.7
Fear of damage of reputation	11	3.6	7	9.3
Total	302	100.0	75	100.0

Source: Researcher's Survey Data, 2022

Table 4.53 shows that over a half of both students (173) and tutors (38) noted they do not report cases of online attacks to police as they are not aware of laws governing cyber-attacks. This was closely followed with fear of stigmatization especially if the offender was a family member by about a fifth of both students (85) and tutors (13). Below a tenth of both students (11) and tutors (7) said they thought that their reputation would be damaged when they report incidences of online attacks to the police. Besides, over a fifth of tutors (17) and a tenth of students (33) said that they fear to be ashamed after reporting the online attacks they faced to the police. Thus, it was generalized from these findings that lack of awareness of laws and regulations governing social media use was key in the perpetration of online attacks against social media users. This balanced with Azizi (2016) who said most offenders who attacked Malaysian children online are not convicted since the law that must protect children is weak as Malaysia did not have any specific law that criminalize child pornography unlike other countries like United States, South Korea and United Kingdom. The same was said in Abdul (2015) study which explored if the laws in Malaysia are adequate to curb pornography.

Question 19(b) in the questionnaire further required respondents to state other reasons they thought made people not to report cases of online attacks. An interview of the Principal of *Yellow TTC* who was marked Y1 noted that: *"some people do not report online attacks cases since they fear to be harmed by their attackers"* (Principal Y1, Yellow TTC: 2022). A tutor at *Pink TTC* who was named P12 reported that: *"fear of being told to pay the perpetrators a ransom hinders many victims to report online attacks cases"* (Tutor P12, Pink TTC: 2022). In addition to dealing with this challenge of online attacks via reporting, this study explored

other possible ways that people use to deal with this problem. To this end, item 20 of both the students' and tutors' questionnaires required them to state other action students take to deal with this problem when using social media. Their findings were as shown in Table 4.54.

Table 4.54: Other ways of Dealing with the Problem of Online Attacks

Other solutions to problem of online attacks	Students		Tutors	
	F	%	F	%
Change contact or profile information	184	60.9	43	57.3
Block the offender	76	25.2	5	6.7
Leave online activities on social media	35	11.6	27	36.0
Revenge by attacking other people online	0	0.0	0	0.0
Revenge by confronting offender online	6	2.0	0	0.0
Do nothing	1	0.3	0	0.0
Total	302	100.0	75	100.0

Source: Researcher's Survey Data, 2022

The study found out other action students take to deal with this problem when using social media. Table 4.55 showed that majority of both 184 students (60.9%) and 43 tutors (57.3%) said most victims change their contact or profile information to deal with online attacks. Five tutors (6.7%) and 76 students (25.2%) opined users address this challenge by blocking the offenders. In addition, 35 students (11.6%) and 27 tutors (36.0%) noted users leave online activities on social media to tackle the online attack problem. Neither students nor tutors revenge by attacking other users online. Similarly, no tutor and one student (0.3%) said users would do nothing while no tutor and 6 students (2.0%) reported that victims revenge by confronting the offenders online. Hence, it is evident that most victims of online attacks prefer to change their contact or profile information like names and pictures to deal with the problem of online attacks. Victims remove their online profile to prevent them from being

harassed and bullied online when using social media. Some users achieve this by using pseudonym on their social media accounts to hide or conceal their identity.

This result was consistent with prior studies only that the present research was done in Vihiga County. For instance, this result agreed with the SIMElab Africa (2019) study which noted that use of pseudonyms was rampant in Kenya as nearly half of Kenyans (47.7%) use them in online conversations on social media. This SIMElab Africa (2019) study showed that the use of pseudonyms concealed the anonymity of the people who are online hence making the offenders not to be accountable for their actions. This in turn lead to bad behaviours online against other users more so ladies like lurking, deception, flaming, trolling and others. This study moreover wanted to know if online attacks when using social media affect academic performance of students. The responses from participants in relation to question 21 in the questionnaires were as shown in Table 4.55.

Table 4.55: Effect of Online Attacks on Academic Performance of Students

Effect of online attacks on academics	Students		Tutors	
	F	%	F	%
Yes	252	83.4	63	84.0
No	50	16.6	12	16.0
Total	302	100.0	75	100.0

Source: Researcher's Survey Data, 2022

Table 4.55 shows over three quarters of both students (252) and tutors (63) said the attacks faced online on social media affect academic performance. Below a quarters of both students (50) and tutors (12) said online attacks do not affect academic performance of students. In a nutshell, this result shows that online attacks can have an effect on the academics of students.

4.8.1.2 Likert Scale Analysis on Online Attacks and Academic Performance

Item 17(a) of the questionnaires required both students and tutors to rate some types of online attacks which people commonly face when using social media. This was aimed at addressing objective four which focused on evaluating the relationship between online attacks and level learners' academic performance in TTCs. This was attained using a Likert Scale having three ratings to rate the options that best show their opinions. In the rating: 1 = Not often, 2 = Often and 3 = Very often. Tables 4.56 and 4.57 captures the responses of the participants.

4.8.1.2.1 Views of Students on Online Attacks and Academic Performance

The views of students on some types of online attacks which users commonly face when using social media were as tabulated in Table 4.56.

Table 4.56: Students views on Online Attacks faced by People on Social Media

Common Online Attacks on Social Media	N= 302	1	2	3	Mean	St.Dev
Online bullying like getting offensive, humiliating, hurting and insulting text messages or threats	F %	1 0.3	40 13.2	261 86.5	2.86	0.356
Online defamation like attacking your good reputation or name	F %	20 6.6	182 60.3	100 33.1	2.26	0.573
Online sexual harassment like unwanted nasty pornographic photos/videos	F %	3 1.0	249 82.5	50 16.5	2.16	0.390
Online hacking of your online account to destroy your personal information	F %	2 0.7	168 55.6	132 43.7	2.43	0.509
Receiving infected files or programs or viruses through email	F %	0 0.0	50 16.6	252 83.4	2.83	0.372
Average score					2.51	0.440

Key: 1-Not often; 2-Often; and 3-Very often
NOTE: N represents number of respondents; F represents frequency; % represents percent; and St. Dev represents standard deviation.
Source: Researcher's Survey Data, 2022

Table 4.56 shows that online bullying occurs very often on social media as reported by 261 (86.5%) students but 40 (13.2%) students noted it occurs often while not often was reported by 1 (0.3%) student. Hence it is clear that online bullying like getting offensive, humiliating, hurting and insulting text messages or threats are common phenomena on social media as seen by the 2.86 mean and 0.356 standard deviation. This finding balanced with studies that showed online bullying was a common occurrence on social sites among female students in Egypt (Arafa, Elbahrawe, Saber, Ahmed & Abbas, 2018; Arafa & Senosy, 2017).

On online defamation via social media, 20 students representing 6.6% said it does not occur often, 182 students representing 60.3% said it occur often and 100 students representing 33.1% said it occur very often. This results thus noted that online defamation like attacking and tarnishing the good name or reputation of a victim occurs on social media. This is backed by the mean of 2.26 and standard deviation of 0.573.

Online sexual harassment is another type of online attack on social media. The results of not often was reported by 3 students (1.0%), often by 249 students (82.5%) and very often by 50 students (16.5%). This results shows that online sexual harassment like unwanted nasty pornographic images or video was a serious kind of online attack rampant on social sites as shown by 2.16 mean and 0.390standard deviation. This result agreed with the study which said USA ladies get pornographic and unwanted obscene sexual texts severally from people they do not know on social sites (Winkelman, Early, Walker, Chu & Yick-Flanagan, 2015).

In reference to online hacking of online accounts, 2 (0.7%) students argued that it does not occur often, 168 (55.6%) said it occur often and 132 (43.7%) said it occur very often. Hence, most students indicated that online hacking of online accounts of users with the intention of destroying their personal information is a common issue on social sites. This was backed by

a mean score of 2.43 and standard deviation of 0.509. Lastly 50 learners representing 16.6% reported that receiving infected viruses, files and programs via social media happens often while 252 students representing 83.4% reported that it happens very often. Hence, the mean of 2.83 and standard deviation of 0.372 obtained from this finding implied that most students agreed generally that this type of online attack was very rampant on social media.

These results obtained from students supported the fact that online attack is a common thing on social sites as backed by the average mean value of 2.51 and average standard deviation of 0.440. This information was in tandem with the cross-sectional study by Marett and Choo (2016) who showed that the chances of adolescent secondary school students in Malaysia being victimized when using social media was very high. The victimizations were in form of cyber bullying, harassment, unwanted sexual solicitation or aggression on social media.

4.8.1.2.2 Views of Tutors on Online Attacks and Academic Performance

The rating of tutors on some types of online attacks which users commonly face when using social media were captured in Table 4.57

Table 4.57: Tutors views on Online Attacks faced by People on Social Media

Common Online Attacks on Social Media	N=75	1	2	3	Mean	St.Dev
Online bullying like getting offensive, hurting, humiliating and insulting text messages or threats	F %	2 2.7	8 10.7	65 86.6	2.84	0.436
Online defamation like attacking your good reputation or name	F %	6 8.0	39 52.0	30 40.0	2.32	0.619
Online sexual harassment like unwanted nasty pornographic photos/videos	F %	8 10.7	46 61.3	21 28.0	2.17	0.601
Online hacking of your online account to destroy your personal information	F %	1 1.3	51 68.0	23 30.7	2.29	0.487
Receiving infected files or programs or viruses through email	F %	3 4.0	10 13.3	62 82.7	2.79	0.501
Average score					2.48	0.529

Source: Researcher's Survey Data, 2022

Table 4.57 gives tutors' views on online bullying. Two (2.7%) tutors said it does not happen often but 8 (10.7%) tutors observed it happens often and 65 (86.6%) tutors argued it happens very often. This means that most tutors agreed online bullying like getting offensive, hurting, humiliating and insulting text or threats is a common thing on social sites as shown by mean value of 2.84 and the standard deviation of 0.436. This outcome balanced with the study by Rainie, Smith, Funk, Lenhart and Madden (2014) which showed that most of the cases of online bullying more so insulting text messages occur via social media.

Regarding online defamation on social sites, a paltry 6 (8.0%) tutors said it does not occur often, 39 (52.0%) tutors said it occurs often while 30 (40.0%) tutors said it occurs very often. Thus, online defamation like attacking the good reputation or name of victims was reported to be common phenomena on social media. This was backed by the mean value of 2.32 and the standard deviation of 0.619.

In reference to online sexual harassment 21 tutors representing 28% said it occurs very often, 46 tutors representing 61.3% said it occur often and 8 tutors representing 10.7% said it does not occur often. These outcomes implied that many tutors saw online sexual harassment like getting unwanted nasty pornographic images and videos is a common thing on social sites. This fact was affirmed by the mean score of 2.17 and standard deviation of 0.601. This result was in tandem with the survey by Duggan (2017) which reported that ladies were majority prone to cyber sexual harassment than men in USA.

When tutors were asked to comment about online hacking as a type of online attack on social media, 1 (1.3%) tutor said it does not occur often but 51 (68.0%) tutors opined it occur often and 23 (30.7%) opined it occur very often. In summary, the mean of 2.29 and the standard

deviation of 0.487 shows online hacking of online accounts of users to destroy their personal information is rampant on social media.

Three tutors (4.0%) noted users of social media do not get viruses and infected files often but 10 (13.3%) tutors said users get viruses and infected files often and 62 (82.7%) said they get infected files and viruses on social sites very often. Thus, getting viruses, infected files and programs is a common occurrence on social media. This was confirmed by a mean of 2.79 and the standard deviation of 0.501.

This result got from tutors supported the fact that online attacks are a common phenomenon on social media. This assertion was supported by the average mean score value of 2.48 and standard deviation of 0.529. This information balanced with the survey by Marett and Choo (2016) which showed the chances of most adolescent learners in the secondary schools in Malaysia being victimized when online on social media were very high. The victimizations were in form of cyber bullying, harassment, unwanted sexual solicitation or aggression on social media. Thus, school children who frequent social media like Facebook, Instagram, etcetera are at a high risk of being attacked online. These results were consistent with the report by SIMElab Africa (2019) which said 53.5% of men and 46.4% of women indicated they have experienced online harassment including physical threats, sexual harassment and stalking on social sites. More urban area residents faced online harassment than rural area ones. Many people living in low-income areas in Nairobi also faced more severe types of online attacks than those living in the middle and high income areas. As such, social media leads to online bullying, stalking, harassment, spreading of rumors and sharing of illegal images.

4.8.1.3 Qualitative Analysis on Online Attacks and Academic Performance

This Likert Scale result was supplemented by qualitative data from interview schedule and open ended question in questionnaires. For instance, item 17(b) in the questionnaires needed informants to name other types of online attacks other than the ones listed in the Likert Scale. In line with these results, a tutor labeled B5 at *Blue TTC* (bearing a pseudonym) said: *"there is a lot of impersonation on social media"* (Tutor B5, Blue TTC: 2022). Another tutor at *Red TTC* labeled R24 claimed that: *"when some people go online on social media, they face some embarrassments"* (Tutor R24, Red TTC: 2022). The comment of tutor R24 was noted in the SIMElab Africa (2019) report which said online attacks are key challenges encountered by many users on online social sites such as purposeful online embarrassment, behaviours that are abusive and offensive name callings. SIMElab Africa report also said online harassments such as online sexual harassments, stalking and physical threats were rampant on social media. The same issue of online attack was captured by the Principal of *Green TTC* who was marked G1 during the interview sessions. The Principals made the following remarks:

> *"Many people who go online regularly via social media receive many unsolicited dirty and nasty text messages, chats, pictures and even clips. Some of these unwanted photos and videos contain pornographic contents"* (Principal G1, Green TTC: 2022)

Another Principals described the way and extent to which online attacks happen via social media. This Principal of *Red TTC* who was labeled R1 reported that:

> *"Very many people get unsolicited files, programs and viruses via social media that reach them by their emails, WhatsApp accounts, Facebook accounts or by browsing*

in wrong websites. Such viruses corrupt or destroy data in their electronic gadgets like mobile phones, laptops and computers" (Principal R1, Red TTC: 2022)

The open ended question 18(b) required respondents to briefly state why some users of social sites can report online attacks cases. Varied responses were got. For instance, a tutor marked Y29 at *Yellow TTC* made the following observation: *"people get depressed when they are attacked online on social media. Hence, they prefer to report such cases to save themselves from getting into depression"* (Tutor Y29, Yellow TTC: 2022). Another tutor at *Blue TTC* marked B16 remarked that: *"users prefer to report incidences of online attacks when they happen on social media because they want the law to protect them from these attackers"* (Tutor B16, Blue TTC: 2022). Principal W1 of *White TTC* as well commented that:

"It is worth for users of any given online site like Facebook to report cases of online attacks to administrators of that online site. This can aid the owners to improve the version of their software in order to protect their clients from attackers" (Principal W1, White TTC: 2022)

In relation to the same issue, a student at *Green TTC* labeled G43 claimed that:

"It is good to contact the owners of that social media like WhatsApp and report the attackers so that the owners can remove or delete the name of the attackers from that social media" (Student G43, Green TTC: 2022)

An in depth interview with another principal noted that online violence level on social sites among most users is rising exponentially. This Principal of *Pink TTC* named P1 noted that:

"It has been observed that the plight of most people who use social media is on the rise although a number of them do not come out openly to report such cases" (Principal P1, Pink TTC: 2022)

Respondents were asked in item 22 of the questionnaire to indicate why they think online attacks affect the performance of learners' in academics because all crimes that are prompted via social media have dreadful impacts on victims (SIMElab Africa, 2019). A student labeled W61 at *White TTC* showed that: *"when students are attacked online on social sites they get depressed making them not to perform well in studies"* (Student W61, White TTC: 2022)

Another student at *Pink TTC* marked as P53 reinforced these findings by indicating that:

> *"Online attacks cause students to lose their concentration in class when the teacher is teaching because the student is in deep thoughts. This in turn make the student to fail in their examinations"* (Student P53, Pink TTC: 2022)

This connotation was also noted further by a tutor marked G15 at *Green TTC* who said that:

> *"Students always get traumatized when they are harassed and bullied on social media especially by people they do not know. This can affect their performance in academics because they spend most of their time recovering from such traumatic conditions"* (Student G15, Green TTC: 2022)

The above findings were similarly consistent with the views gathered when the Principal of *Red TTC* was interviewed. This Principal who was labeled R1 reported that:

> *"Psychological withdrawal is a symptom of online violence because the students who have been victimized online prefer to keep to themselves and not share or relate with anybody even in their class work. This can result in them performing poorly in their academics"* (Principal R1, Red TTC: 2022)

It was noted from this qualitative data supplied by informants that the various forms of online attacks are a common occurrence on social sites. Hence, to evaluate the association between

online attacks and academic performance, the study used inferential statistics explained in the proceeding sections to predict the effect of the causative variable on the caused variable.

4.8.2 Inferential Statistics on Online Attacks and Academic Performance

Null hypothesis four which stated there is no significant relationship between online attacks and level of academic performance was tested using inferential statistics at 0.05 significance level. If p-value was below 0.05, the null hypothesis was rejected meaning that a significant association existed and vice versa. Tables 4.58 and 4.59 gives the correlation analysis results.

4.8.2.1 Association between Online Attacks and Academic Performance

The association between the two variables in null hypothesis four was tested using Pearson Product Moment Correlation to determine the direction and strength of the association. The results of this correlation analysis as obtained from students was as reflected in Table 4.58.

Table 4.58: Online Attacks and Academic Performance Association from Students

		Online attacks	Performance in end of term exam
Online attacks	Pearson Correlation	1	.538**
	Sig. (2-tailed)		.000
	N	302	302
Performance in end of term exam	Pearson Correlation	.538**	1
	Sig. (2-tailed)	.000	
	N	302	302

**. Correlation is significant at the 0.05 level (2-tailed).

Source: Researcher's Survey Data, 2022

Table 4.58 shows that the association between online attacks and performance in end of term examination was moderately positive and statistically significant ($r = 0.538$, $n = 302$, $p = 0.000 < 0.05$). This result implied that online attacks correlated positively with students'

level of academic performance. In conjunction with this, the findings of the correlation analysis obtained from the responses of tutors was as shown in Table 4.59.

Table 4.59: Online Attacks and Academic Performance Association from Tutors Data

		Online attacks	Performance in end of term exam
Online attacks	Pearson Correlation	1	.447**
	Sig. (2-tailed)		.000
	N	75	75
Performance in end of term exam	Pearson Correlation	.447**	1
	Sig. (2-tailed)	.000	
	N	75	75

**. Correlation is significant at the 0.05 level (2-tailed).

Source: Researcher's Survey Data, 2022

The result shown in Table 4.59 indicated that there was a positive statistically significant moderate correlation between online attacks and academic performance in end of term examination ($r = 0.447$, $n = 75$, $p = 0.000$) at 0.05 level of significance. Thus, online attacks correlate with level of the academic performance significantly.

Tables 4.58 and 4.59 shows in summary that the fourth null hypothesis was rejected because the p-value obtained (that is 0.000) was less than 0.05. This led to the adoption of the alternative hypothesis which meant that a significant correlation exists between the two variables. The study therefore, concluded that online attacks had a significant association with the level of academic performance of students in TTCs in Vihiga County.

4.8.2.2 Regression Analysis on Online Attacks and Academic Performance

A linear regression analysis of the fourth null hypothesis was done to predict the size of this positive correlation between online attacks and level of academic performance at a 95% level of confidence. The outcomes of the analysis are seen in Tables 4.60 and 4.61.

Table 4.60: Regression on Online Attacks and Academic Performance from Students

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.307[a]	.094	.079	.488

a. Dependent Variable: Academic performance of students
b. Predictors: (Constant), Online defamation like attacking your good reputation or name, receiving infected files or programs or viruses via email, Online hacking of your online account to destroy your personal information, Online bullying like getting offensive, humiliating, hurting and insulting text messages or threats, Online sexual harassment like unwanted nasty pornographic photos / videos

Source: Researcher's Survey Data, 2022

The Adjusted R Square value of 0.079 in Table 4.60 implies that the aspects of the causative variables (online defamation like attacking your good reputation or name; receiving infected files or programs or viruses via email; online hacking of your online account to destroy your personal information; online sexual harassment like unwanted nasty pornographic photos / videos; online bullying like getting offensive, humiliating, hurting and insulting threats or text) accounted for 7.9% of the variations in academic performance. This means that online attacks have a fairly low effect on learners' academic performance since 92.1% of other factors which were beyond the scope of this study affect students' academic performance. This was as well backed by the R value of 0.307 which represented a weak correlation between the two variables. Table 4.61 shows the responses of tutors on the same issue.

Table 4.61: Regression on Online Attacks and Academic Performance from Tutors

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.227[a]	.052	.017	0.496

Source: Researcher's Survey Data, 2022

The Adjusted R Square value of 0.017 obtained in Table 4.61 shows that online attacks affect 1.7% of academic performance. This low percentage signified a weak impact of the causative

variable on the dependent variables since 98.3% of other factors not included in this study affect academic performance. These facts in Tables 4.60 and 4.61 therefore supported the rejection of the fourth null hypothesis at a threshold of $P < 0.05$ because the contribution of online attacks on academic performance was small. However, in order to determine if online attack was indeed a significant predictor of academic performance, the fourth null hypothesis was tested further using Analysis of Variance based on the views of Creswell (2014).

4.8.2.3 ANOVA Results on Online Attacks and Academic Performance

The influence of online attacks on academic performance was determined using ANOVA. The ANOVA results are as reflected in Tables 4.62 and 4.63.

Table 4.62: ANOVA on Online Attacks and Academic Performance from Students

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	7.323	5	1.465	6.146	.000[b]
	Residual	70.531	296	.238		
	Total	77.854	301			

a. Dependent Variable: Academic performance of students
b. Predictors: (Constant), Online defamation like attacking your good reputation or name, receiving infected files or programs or viruses via email, Online hacking of your online account to destroy your personal information, Online bullying like getting offensive, humiliating, hurting and insulting text messages or threats, Online sexual harassment like unwanted nasty pornographic photos / videos
Source: Researcher's Survey Data, 2022

As observed in Table 4.62, it was established that the factors of the independent variable (Online defamation like attacking your good name or reputation; Online sexual harassment like unwanted nasty pornographic photos / videos; Receiving infected files or programs or viruses via email; Online bullying like getting hurting, offensive, humiliating and insulting text messages or threats; and Online hacking of your online account to destroy your personal

information;) predicted academic performance significantly as shown by the ANOVA result [F (5, 296) = 6.146, p < 0.05]. This meant that online attacks affected academic performance statistically because the p-value (.000) obtained was below .05. This supported the rejection of null hypothesis four and hence acceptance of the alternative hypothesis which stated that there is a significant relationship between online attacks and academic performance. Hence, it was concluded that online attack was a significant predictor of academic performance. Table 4.63 further shows the ANOVA result obtained from the responses of tutors.

Table 4.63: ANOVA on Online Attacks and Academic Performance from Tutors

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	5.617	5	1.123	2.900	.000[b]
	Residual	26.729	69	.387		
	Total	32.347	74			

Source: Researcher's Survey Data, 2022

Table 4.63 shows that academic performance was affected significantly by online attacks [F (5, 69) = 2.900, p < 0.05] meaning that online attacks led to 1.7% of the variation in academic performance. Null hypothesis four was rejected based on the p-value (0.000) and alternative hypothesis which stated that there is a significant association between magnitude of online attacks and students' academic performance level in TTCs in the county was adopted.

4.8.2.4 Regression Coefficients on Online Attacks and Academic Performance

Beta values were used to show how much the caused variable varied with one-unit rise in an aspect of online attack when all its other aspects were kept constant. These values gave the change expected in academic performance for a one-unit rise in online attacks. Tables 4.64 and 4.65 shows the results obtained from both the students and tutors responses.

Table 4.64: Coefficients on Online Attacks and Academic Performance from Students Data

Coefficients[a]							
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-.475	1.020		-.465	.642		
	Online bullying	.145	.180	.101	.803	.422	.192	5.214
	Online defamation	.237	.069	.267	3.424	.001	.504	1.983
	Online sexual harassment	.506	.190	.388	2.662	.008	.144	6.939
	Online hacking	-.316	.082	-.316	-3.833	.000	.449	2.227
	Receiving infected files	.332	.225	.243	1.479	.140	.113	8.846

a. Dependent Variable: Academic performance of students

Regression Equation: $Y = \alpha + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5 + \varepsilon i$

Academic performance, $Y=-.475+.145X_1+.237X_2+.506X_3-.316X_4+.332X_5+\varepsilon$

Source: Researcher's Survey Data, 2022

Table 4.64 shows that $Y=\alpha+\beta_1X_1+\beta_2X_2+\beta_3X_3+\beta_4X_4+\beta_5X_5+\varepsilon$ was the regression model used to get the influence of online attacks on academic performance. In the model, X were various online attacks indicators; Y was academic performance; and α was a constant. $Y=-.475+.145X_1+.237X_2+.506X_3-.316X_4+.332X_5+\varepsilon$ was the model of beta coefficients of objective four. The positive 0.145 β-value shows that for every rise of one point in online bullying, academic performance rose by 14.5% points. If online bullying besides rose by one standard deviation, it led to a rise in academic performance by a beta value of 0.101 standard deviation units meaning online bullying affect performance in academics. The +0.237 β-value in Table 4.64 meant that a rise in one unit of online defamation made academic

performance to rise by 23.7%. A rise of one standard deviation in online defamation also led to a 0.267 standard deviation units rise in academic performance. This shows a statistically significant effect of online defamation on academic performance The +0.506 β-value means that 1-unit rise in sexual harassment led to a rise in academic performance by 50.6%. Also a 1 standard deviation rise in sexual harassment led to a rise in academic performance by 0.388 standard deviation units implying that sexual harassment impacts on academic performance. The -0.316 β-value shows that there was a drop of 31.6% in academic performance for every unit rise in online hacking. Further, a rise of 1 standard deviation in online hacking reduced academic performance by -0.316 standard deviation units showing the statistical effect of online hacking on academic performance was significant. The +0.332β-value finally meant that as getting infected files rose by 1 unit, academic performance rose by 33.2%. A rise of one standard deviation in getting infected files as well raised academic performance by 0.243 standard deviation units showed that getting infected files affect academic performance.

By comparing the effect of each factor on the caused variable, then online sexual harassment contributed more (0.506) on academic performance followed by getting infected files (.332), online defamation (0.237), online bullying (0.145) and online hacking (-0.316). These results thus showed that all the various aspects of online attacks had no statistically significant effect on academic performance as all the p-values obtained were over .05 except online hacking (.000) and online defamation (.001). This meant getting infected files, online bullying and online sexual harassment were not useful when aspects of online attacks were present in the model and so they did not contribute substantially in explaining academic performance of students. Table 4.65 shows the beta coefficient values obtained from the responses of tutors.

Table 4.65: Coefficients on Online Attacks and Academic Performance from Tutors Data

Coefficients[a]								
Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	T	Sig.	Tolerance	VIF
1	(Constant)	2.530	.471		5.369	.000		
	Online bullying	-.300	.246	-.266	-1.219	.227	.289	3.464
	Online defamation	.176	.186	.221	.947	.347	.252	3.973
	Online sexual harassment	-.169	.211	-.206	-.799	.427	.206	4.851
	Online hacking	-.122	.217	-.121	-.563	.575	.297	3.369
	Receiving infected files	.159	.226	.162	.701	.485	.259	3.860

a. Dependent Variable: Academic performance of students
Regression Equation: $Y = \alpha + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5 + \varepsilon i$
Academic performance, $Y=2.530-.300X_1+.176X_2-.169X_3-.122X_4+.159X_5+\varepsilon$
Source: Researcher's Survey Data, 2022

Table 4.65 shows the regression model of β-values from tutors' responses was: Y=2.530-.300X1+.176X2-.169X3-.122X4+.159X5+ε. The β-value of negative .300 meant that a rise of one unit in online bullying lowered academic performance by 30.0%. Increasing online bullying by one standard deviation furthermore decreased academic performance by a standardized beta value of -0.266 standard deviation units. This implies that online bullying affect academic performance significantly by only 30.0%.

From Table 4.65, the β value of positive 0.176 shows that for every increase of one point in online defamation, academic performance increases by 0.176 points. Further, a one standard deviation increase in online defamation result in a 0.221 standard deviation units increase in academic performance. This is how online defamation affect academic performance.

The -0.169 β value means that an improvement of one unit in online sexual harassment lower academic performance by 16.9%. A one standard deviation improvement in online sexual harassment leads to a drop in academic performance by -0.424 standard deviation units. This shows a significant effect of online sexual harassment on students' academic performance.

The -0.122 β-value in Table 4.65 showed that a rise of 1 unit in online hacking led to a 12.2% drop in academic performance. It was further clear that a one standard deviation increase in online hacking lowered academic performance by -0.121 standard deviation units showing that there was a statistically significant impact of online hacking on academic performance.

A +0.159 β-value meant a unit rise in getting infected files led to a 15.9% rise in academic performance. A 1 standard deviation rise in getting infected files rise academic performance by 0.162 standard deviation units showing its significant impact on academic performance.

On comparing the contribution of each factor on the caused variable, then online attacks in form of online defamation affected academic performance more (0.176) then getting infected files (0.159), online hacking (-0.122), online sexual harassment (-0.169) and online bullying (-0.300). The negative β-values meant that academic performance dropped when students were bullied, sexually harassed and hacked online.

It was similarly observed further from both Tables 4.64 and 4.65 that the collinearity statistics test was fine because the VIF of all the aspects of the causative variable was more than 0.1 and Tolerance was less than 10. This was in accordance with the study by Cameroon (2014) and Dhakal (2016) which asserted that the VIF of all the factors of a causative (predictor) variable should be below 10 while Tolerance should be above 0.1.

The results in Tables 4.64 and 4.65 were consistent with some previous studies. For instance, Marett and Choo (2016) said Malaysian school children using social sites more are at very high risk of being attacked online making them not to excel in academics. Duggan (2017) said USA ladies are prone to cyber sexual harassment than men as they got pornographic or sexual texts from people they do not know on the sites (Winkelman, Early, Walker, Chu & Yick-Flanagan, 2015). This affect the academic performance of female learners negatively. Studies have shown that online bullying was a common thing on social sites among Egyptian female university learners making them to get low grade points in their examinations (Arafa, Elbahrawe, Saber, Ahmed & Abbas, 2018; Arafa & Senosy, 2017).

The results of this study also balanced with Rainie, Smith, Funk, Lenhart and Madden (2014) study which noted most online bullying cases more so insulting texts led to poor academic performance. The SIMElab Africa (2019) report said online attack like sexual harassment or online bullying is rapidly becoming a key issue and Kenyan ladies are more prone to them than men. Tables 4.64 and 4.65 results made null hypothesis four rejected and alternative hypothesis accepted. It was concluded there was a significant effect of online attacks on

academic performance meaning it was a significant predictor of academic performance. Table 4.66 summarizes the conclusions made after testing the four hypotheses of this study.

Table 4.66: Summary of Hypotheses Tested

Hypothesis	Conclusion
H_O1 There is no significant relationship between type of social media used for communication and level of academic performance in TTCs.	Rejected
H_O2 There is no significant relationship between frequency of social media use and the level of academic performance of students in TTCs.	Rejected
H_O3 There is no significant relationship between interpersonal relationships and the level of academic performance of students in TTCs.	Rejected
H_O4 There is no significant relationship between online attacks and the level of academic performance of students in TTCs.	Rejected

Source: Researcher's Survey Data, 2022

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter outlines a summary of the findings of this study, conclusions, recommendations and the possible suggestions for future surveys pegged on the study objectives;

5.2 Summary of the Findings

The findings of this study were summarized based on the objectives of the study.

5.2.1 Use of Types of Social Media and Academic Performance of Students

According to the findings, 53.6% of students and 60% of tutors had WhatsApp as their favourite social media. Facebook was second as noted by students (37.1%) and tutors (28%). YouTube was third as reported by 6.6% of students and 6.7% of tutors. The insignificant ones were Twitter as observed by students (1.7%) and tutors (4%). It was lastly followed by Instagram as said by students (1%) and tutors (1.3%). Thus, learners' academic performance improved as use they use social media types to promote their studies positively.

Pearson Product Moment Correlation results from tutors ($r = 0.663$, $n = 75$, $p = 0.000$) and students ($r = 0.774$, $n = 302$, $p = 0.000$) showed that a strong positive statistically significant correlation existed between the two variables. The first null hypothesis was rejected as the $p < 0.05$. The alternative hypothesis was then accepted.

The Adjusted R Square values got from students (0.207) and tutors (0.111) in the regression analysis shows that types of social media affected 20.7% and 11.1% of performance in academics respectively. Thus, types of social media had a fairly low effect on academic

performance because the remaining 79.3% and 88.9% of other factors not included in this research respectively predicted learners' academic performance in TTCs in the County.

ANOVA result of tutors [$F(7, 67) = 2.324$, $p < 0.05$] and students [$F(7, 294) = 12.225$, $p < 0.05$] meant there was a statistically significant effect of the predictor on the caused variable. Hence, types of social media affect academic performance of learners in TTCs in the county.

5.2.2 Frequency of Social Media Use and Academic Performance of Students

Both 184students (60.9%) and 42 tutors (56%) said learners use social sites very frequently. Nine tutors (12%) and 17 students (5.6%) noted students do not use social media frequently. Most of both students (96.4%) and tutors (75%) observed that students use below three hours on social media daily as they are in class most of the time attending lessons.

Pearson Product Moment Correlation results from students ($r = 0.708$, $n = 302$, $p = .000$) and tutors ($r = 0.598$, $n = 75$, $p = .000$) showed there was a significant strong positive association between the independent and caused variables. This meant academic performance improves as students use social media frequently. The second null hypothesis was rejected as the $p = .000 < 0.05$. The alternative hypothesis was then accepted.

Adjusted R Square values obtained in the regression analysis of tutors (.135) and students (.170) meant that frequency of social media use affected 17% and 13.5% respectively of the variations academic performance. Thus, frequency of social media use had a fairly low effect on academic performance as the remaining 83% and 86.5% of other factors beyond the scope of this study respectively influence learners' academic performance in TTCs in the county.

ANOVA result of tutors [$F(5, 69) = 3.318$, $p < 0.05$] and students [$F(5, 296) = 13.320$, $p < 0.05$] meant that the causative variable influenced dependent variable significantly. Hence,

types of social media influenced academic performance of learners in TTCs in the county.

5.2.3 Interpersonal Relationships and Academic Performance of Students

A majority 46 of tutors (61.3%) and 192 students (63.6%) said interpersonal relationships on social sites was high. Ten students (3.3%) and 9 tutors (12%) said it was low but 20 tutors (26.7%) 100 students (33.1%) and said it was moderate. This analysis shows use of social media improves the level of interpersonal relationships among students since it was high.

Pearson Product Moment Correlation results from students ($r = 0.543$, $n = 302$, $p = .000$) and tutors ($r = 0.583$, $n = 75$, $p = .000$) noted there was a moderate statistically significant positive relationship between the causative and dependent variables. This meant that good interpersonal relationships on social media promote academic performance. Null hypothesis three was rejected as the $p < 0.05$. The alternative hypothesis was then accepted meant that the two variables correlated significantly.

Adjusted R^2 values obtained from tutors (.167) and students (.051) in the regression analysis showed that interpersonal relationships accounted for 16.7% and 5.1% of the variations in academic performance respectively. Thus, interpersonal relationships had a fairly weak effect on academic performance because 83.3% and 94.9% respectively of other factors not discussed in this study affect the academic performance of learners in TTCs in the county.

ANOVA result of tutors [$F (5, 69) = 8.887$, $p < 0.05$] and students [$F (7, 296) = 4.238$, $p < 0.05$] meant that the causative variable predicted dependent variable significantly. Hence, interpersonal relationships predicted learners' academic performance in TTCs in the county.

5.2.4 Online Attacks and Academic Performance of Students

Both 173 students (57.3%) and 39 tutors (52.0%) said the rating online attacks faced by users when using social media was high while 124 students (41.1%) and 29 tutors (38.7%) said it was medium but 5 students (1.6%) and 7 tutors (9.3%) noted that it was low. Likewise, 46 tutors (61.3%) and 204 students (67.5%) said that females were more highly prone to online attacks on social media unlike male as stated by 98 students (32.5%) and 29 tutors (38.7%). Further, 230 students (76.2%) and 69 tutors (92%) reported that victims do not know the perpetrators of online attacks but 72 students (23.8%) and 6 tutors (8.0%) said victims know the people who attack them online when using social media.

Pearson Product Moment Correlation results from students ($r = 0.538$, $n = 302$, $p = .000$) and tutors ($r = 0.447$, $n = 75$, $p = .000$) shows that there was a moderate statistically significant positive correlation between online attacks and academic performance. Null hypothesis four was rejected since the $p = .000 < 0.05$. This led to the adoption of the alternative hypothesis implying that online attacks had a significant association with academic performance.

Adjusted R^2 values obtained from students (.079) and tutors (.017) in the regression analysis showed that online attacks contribute 7.9% and 1.7% on academic performance respectively. Thus, online attacks had a fairly weak effect on academic performance as 92.1% and 98.3% respectively of other factors outside the scope of the study affect academic performance.

ANOVA result of tutors [$F (5, 69) = 2.900$, $p < 0.05$] and students [$F (5, 296) = 6.46$, $p < 0.05$] meant that online attacks affected caused variable significantly. Hence, online attacks impact on level of academic performance of students in TTCs in Vihiga County.

5.3 Conclusions

The key purpose of this research was to predict if a correlation existed between social media and learners' academic performance in Vihiga County. Based on the findings obtained from the data analysis, the following conclusions were made at:

From objective one, it can be concluded that types of social media used for communication affect the level of academic performance of learners in TTCs in the county based on the rejection of the first null hypothesis. This was because the correlation analysis result was obtained was less than the set level of significance (that is, $p = 0.000 < 0.05$) meaning that the two variables had a positive statistically significant correlation.

The rejection of the second null hypothesis by the study concluded that frequency of social media use influence the level of academic performance of learners in TTCs in the county. This was because the two variables had a positive statistically significant correlation based on Pearson Product Moment Correlation coefficient obtained which was less than the significance level that was set for this research (that is, $p = 0.000 < 0.05$).

From the rejection of null hypothesis three and acceptance of alternative hypothesis three, it was concluded that interpersonal relationships affected academic performance of learners in TTCs because the two variables had a positive statistically significant moderately correlation because the correlation value obtained using Pearson Product Moment Correlation was less than the level of significance (that is, $p = 0.000 < 0.05$). It was thus deduced that social media are vital in relation to promoting interpersonal relationships among students in TTCs.

The rejection of the fourth null hypothesis and adoption of its alternative hypothesis meant that a statistically significant moderate positive correlation existed between online attacks and level of academic performance as indicated by the small p-value obtained (that is, 0.000) compared to the significance level of 0.05. It was concluded thus that the high magnitude of online attacks influenced the level of learners' academic performance in TTCs in the county.

5.4 Recommendations of the Study

This study derived the following recommendations based on the conclusion:

i. In view of students in TTCs using various types of social media, the Ministry of Education should enact policies that will govern proper and positive use of various types of social media among learners in all learning institutions. The policies enacted should as well incorporate ways that will make students to use various types of social sites to promote their studies positively since this study has shown that overuse of various types of social media by learners affects their academic performance. This recommendation is indeed a medium term recommendation because the MoE should collaborate with various other stakeholders in the education sector KICD, TSC, KNEC, KEMI, and others in order to come up with such policies.

ii. With the perspective that students in various TTCs use social media very frequently, it follows that the administrations of various TTCs should come up with rules which will govern the use of mobile phones by students in the collage. The managements besides should initiate awareness campaign to enlighten students on the negative impact of overusing social media frequently. This is because this research demonstrated that frequent use of social media affects the academic performance of

students negatively. This recommendation is a short term recommendation since the administrations of various TTCs can easily initiate such awareness programs by making announcement in the college, by organizing seminars within the college, by hanging posters or flyers within the college, among other awareness methods.

iii. In line with the enhancement of interpersonal relationships via social media, the MoE in conjunction with the Communications Authority of Kenya (CAK) should enact regulations that will enhance surveillance of the various kind of social interpersonal interactions which occur on social media among learners in different institutions of learning in Kenya. This recommendation is a medium term one because the MoE has to liaise with CAK to achieve this recommendation. Further, the MoE should come up with regulations that will encourage students to utilize their social interpersonal relationships on social media sites to promote their academic performance.

iv. Based on the conclusion that students in TTCs are attacked online when using social media, the government should formulate laws that will criminalize the various forms of online attacks against learners to curb the challenge of attacking learners online in order to protect them. This recommendation is a long term recommendation because various government agencies like the Parliament should be involved in forming such laws so as to implement this recommendation. The MoE via its various stakeholders like TTC administrators should in addition initiate sensitization campaigns to teach students about cyber security like various types of attacks faced on online media; how to keep their personal safety when online like protecting their identity online; and how to deal with online attacks cases.

5.5 Suggestions for Further Research

This research has delved on issues of how social media impinge on academic performance of students in TTCs in Vihiga County. The study therefore recommended that more survey should be conducted in the following areas in future:

i. The current study only focused on types of social media used by learners in TTCs in Vihiga County. As such, there is need to replicate this research among learners in other institutions of learning such primary schools, secondary schools, polytechnics, technical institutes, universities and other colleges in Vihiga County to ascertain the relationship between types of social media and academic performance of learners.

ii. The conduction of the present study in only one county, namely Vihiga County was a key limitation of the study. Hence, a similar research should be conducted in other counties in Kenya in order to get a good representative picture of the effect of frequency of social media use on level of academic performance of students in the entire nation of Kenya.

iii. This study concentrated only on students. However, there is need for another research to be done among teachers to investigate the impact of interpersonal relationship on social media of teachers in the teaching profession and its influence on the academic performance of students since teachers are key stakeholders in the education sector.

iv. Following the rising cases of online attacks of students on social media, further study should be undertaken to explore the best ways social media should be incorporated in the curriculum to ensure the safety of learners in the teaching and learning process.

REFERENCES

Abdul, J. J. (2015). Combating child pornography in digital era: Is Malaysian law adequate enough to meet digital challenge? *Pertanika Journal of Social Sciences and Humanitie*s,*23*(5), 137-152.

Abdullah, A. A., Mariah, B. M., & Rahmat, B. G. (2014). Usage of social networking sites and technological impact on the interaction-enabling features. *International Journal of Humanities and Social Science*, *4*(4), 46. [Special Issue – February 2014]

Acheaw, M., & Larson, A. (2015). Use of social media and its impact on academic performance of tertiary institution students. *Journal of Education*, *6*, 694.

African Development Bank Group. (2016). *Minding the gaps: Identifying strategies to address gender-based cyber violence in Kenya*. https://www.afdb.org/fileadmin/uploads/afdb/Documents/Generic-Documents/Policy_Brief_on_Gender_Based_Cyber_Violence_in_Kenya.pdf. Accessed 12 Dec 2018.

Alloway, T. P., Horton, J., Alloway, R. G., & Dawson, C. (2013). Social networking sites and cognitive abilities: Do they make you smarter? *Computers & Education*, *63*, 10-16.

Almarabeh, H. & Sulieman, A. (2019). The impact of cyber threats on social networking sites. *International Journal of Advanced Research in Computer Science*, *10*(2), 1 – 9, March-April 2019.

Al-rahmi, W. M, Othman, M. S., & Musa, M. A. (2014). The improvement of students' academic performance by using social media through collaborative learning in Malaysian higher education. *Asian Social Science, 10* (8), 210-221.

Alshenqeeti, H. (2014). Interviewing as a data collection method: A critical review. *English Linguistics Research Journa*l, *3*(1), 39-45. http://dx.doi.org/10.5430/elr.v3n1p39

Amadi, E. C., & Ewa, C. J. (2018). Social media networking and the academic performance of university students in Nigeria: A study of the Rivers State University, Port Harcourt. *International Journal of Innovative Scientific and Engineering Technologies Research*, *6*(1), January-March, 2018, 24-31. https://www.researchgate.net/publication/323522199

American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders - Text revision* (Fourth Edition). APA; Washington, DC, USA.

Amukune, S. (2013). *Effect of social network browsing on learning behaviour of University*

students, Mombasa Kenya. An Act Relative to Bullying in Schools, Chapter 92 of the Acts of 2010.

Annapoorna, S. Reshma R., & Sawad, H. (2015). The impact of social media on youth. *International Journal of Innovative Research in Computer and Communication Engineering*, *3*(Special Issue 7), October 2015, 379-383.

Arafa, A. E., Elbahrawe, R. S., Saber, N. M., Ahmed, S. A., & Abbas, A. M. (2018). Cyber sexual harassment: a cross-sectional survey over female university students in Upper Egypt. *Int J Community Med Public Health*, *5*(1), 61–65. https://doi.org/10.18203/2394-6040.ijcmph20175763

Arafa, A. E., & Senosy, S. A. (2017). Pattern and correlates of cyberbullying victimization among Egyptian university students in Beni-Suef, Egypt. *J Egypt Public Health Assoc*, *92*(2), 107–115. https://doi.org/10.21608/epx.2018.8948

Archana, K., & Jyotsna, V. (2015). Impact of social networking sites on social interaction – A study of college students. *International Journal of Humanities and Social Sciences (IJHSS)*, *4*(2), March 2015, 55-62. https://www.researchgate.net/publication/273144885

Armitage, A. (2007). Mutual research designs: Redefining mixed methods research design. *Proceedings of the British Educational Research Association Annual Conference*, Institute of Education, University of London. London: Education– Line Database. Retrieved from http://www.leeds.ac.uk/educol/documents/167799.htm

Asad, A., Anam, I., & Kanwal, I. (2016). Effects of social media on youth: a case study in university of Sargodha. *International Journal of Advanced Research (IJAR)*, 4(11), 369-372. DOI URL: http://dx.doi.org/10.21474/IJAR01/2093

Aslam, A., & Nazim, M. (2016). Social networking in library and information services: current scenario. *SRELS Journal of Information Management*, *53*(2), 113-118. DOI: 10.17821/srels/2016/v53i2/91270.

Azizi, N. A. (2016, December 22). Teens Chides Netizens Behind Her 'Death'. *New Straits*. Seremban, Malaysia. Retrieve from https://www.nst.com.my/news/2016/12/198658/teen-chides-netizens-behind-her-death#:~:text=SEREMBAN%3A%20S.,%E2%80%9Cdeath%E2%80%9D%20went%20viral%20yesterday.&text=The%20SMK%20Rantau%20student%20said,learning%20about%20the%20false%20news.

Backe, E. L., Lilleston, P., & McCleary-Sills, J. (2018). Networked individuals, gendered violence: a literature review of cyber violence. *Violence Gender*, *5*(3), 135–145. https://doi.org/10.1089/vio.2017.0056

Balogun, N. A., Awodele, T. A., Bello, O. W., Oyekunle, R. A., & Balogun, U. O. (2017).

Impact of social networks on the increase of cyberbully among Nigerian University students in Ilorin Metropolis. *Journal of Sustainable Technology*, *8*(2), 102–111.

Bartlett, J. E., Kotrlik, J. W., & Higgins, C. C. (2001). Organizational research: Determining appropriate sample size in survey research. *Information Technology, Learning and Performance Journal*, *19*(1), 43-50.

Best, J. W. & Kahn, J. V. (2006). *Research in Education*. (10th ed.). Boston: Pearson Education Inc. https://www.academia.edu/5382594/Research_in_Education_Tenth_Edition_?auto=download

Boyd, D. M., & Ellison, N. B. (2008). Social network sites: Definition, history and scholarship. *Journal of Computer Mediated Communication*, *13*(1), 210-230: 211.

Boynton, P.M. (2004). Hands-on guide to questionnaire research: Administering, analyzing and reporting your questionnaire. *British Medical Journal*, *328*(7452), 1372-1375. https://doi.org/10.1136/bmj.328.7452.1372

Bozkurt, A., Karadeniz, A., & Kocdar, S. (2017). Social networking sites as communication, interaction and learning environments: Perceptions and preferences of distance education students. *Journal of Learning for Development (JL4D)*, *4*(3), 348-366.

Bozkurt, A., Karadeniz, A., & Okur, M., R. (2015). *Online social networks as Communication and learning environments: Post-graduate students' attitudes and preferences*. In, Proceedings of 7th International Conference on Education and New Learning Technologies Conference (EDULEARN15), Barcelona, Spain, 4686-4694, 6^{th}-8^{th} July 2015.

Bryman, A. & Cramer, D. (2012). *Quantitative Data Analysis with SPSS Release 10 for Windows: A Guide for Social Scientists*. Philadelphia: Taylor and Francis Group.

Burnett, R. & Marshall, P. D. (2003). *Web Theory: An Introduction*. London: Routledge.

Cameroon. R. (2015). '*The emerging use of mixed methods in educational research', In Meanings for and in Educational Research*, (Eds).

Cameroon, R. (2014). *Mixed Methods Research: The Five Ps Framework*. Central Queensland University, Gladstone, Australia.

Carly, M. G., & Anna, L. (2016). Springer Science + Business Media LLC 2016. M.Gellman (ed.), *Encyclopedia of Behavioral Medicine*. DOI: 10.1007/978-1-4614-6439-6_101953-1

Chandler, D. (2002). *Technological or media determinism*.

http://www.aber.ac.uk/media/Documents/tecdet/tdetold.html (accessed 2 December 2014).

Chandran, E. (2004). *Research Methods: A Quantitative Approach*. Nairobi: Day Star University.

Chiu, P., Cheung, C., & Lee, M. (2008). Online social networks: why do we use Facebook? *Communications in Computer and Information Science, 19*, 67–74.

Chugh, R., & Ruhi, U. (2017). Social media in higher education: A literature review of Facebook. *Education and Information Technologies*, 1-12.

Cohen, L. & Manion, L. (2008). *Research Methods in Education*, New York City, NY: Routledge Falmer.

Communications Authority of Kenya CAK, (2019). *Fourth quarter sector statistics report For the financial year 2017 / 2018* (APRIL-JUNE 2018). https://www.ca.go.ke/document/sector-statistics-report-q4-2017-18/

Creswell, J. W. (2014). *Designing and Conducting Mixed Methods Research*. 2nd ed. Sage Publications.

Creswell, J. W. (2013). *Research design: Qualitative, quantitative and mixed methods approach*. Sage publications. https://ussagepub.com/en-us/nam/reserach-design/book255675

Creswell, J. W. (2012). *Educational Research, Planning and Conducting and Quantitative and Qualitative*. https://scholar.google.co/scholar?q=Creswell,+(2012).+Educational+research,+planning+and+Quantitative&hl=en&as_sdt=0&as_vis=1&oi=scholart

Creswell, J. W. & Plano Clark, V. L. P. (2010). *Designing and Conducting Mixed Methods Research. 2nd Edn.* Thousand Oaks, California, USA: Sage Publications.

Cutlip, S. M., Center, A. H., & Broom, G. M. (2006). *Effective public relations* (8th Edition). New Jersey: Pearson Education.

Cyberbullying Resource Centre. (2011). *Cyberbullying statistics*. retrieved November 28, 2011.

Dagan, N., & Beskin, D. (2015). Effects of social network exposure on nutritional learning: Development of an online educational platform. *JMIR Serious Games*, *3*(2), 7. DOI:10.2196/games.4002.

Davies, T., & Cranston, P. (2008). *Youth work and social Networking. Final research report.*

How youth can work best to support young people to navigate the risks and make the most of the opportunities of online social networking? National youth agency and research. http://www.nya.org.uk/resource/youth-work-social-networking

DeMonte, J. (2013). *High quality professional development for teachers, supporting teacher training to improve student learning*. Washington DC: Center for American Progress.

Duggan, M. (2017). *Online harassment*. Pew Research Center. https://www.pewinternet.org/2017/07/11/online-harassment-2017. Accessed 28 Feb 2019.

Duggan, M. (2015). *Mobile messaging and social media 2015*. http://www.pewinternet.org/2015/08/19/mobile-messaging-and-social-media-2015/

Efstratia, A. & Martijn, B. (2016). Social network sites, individual social capital and happiness. *Research paper published at Springerlink.com*. DOI 10.1007/s10902-016-9808-z

Etkina, E. (2011). Pedagogical content knowledge and preparation of high school teachers. *Journal of Physics Education Research, 6*(6), 20-27.

European Institute for Gender Equality. (2017). *Cyber violence against women and girls*. https://doi.org/10.2839/876816

European Union Agency for Fundamental Rights. (2014). *Violence against women: An EU-wide survey—main results*. https://fra.europa.eu/sites/default/files/fra_uploads/fra-2014-vaw-survey-main-results-apr14_en.pdf. Accessed 10 Mar 2019.

Frankael, J. R., & Wallen, N. E. (2010). *How to design and evaluate research in education* (7th ed.). New York: McGraw-Hill International Edition. https: www.sciepub.com/reference/145554

Gall, M. D., Borg, W. R., & Gall, J. P. (2007) *Educational research: an introduction (8th ed.)*. New York: Pearson Education Inc.

Gardner, J. (2011). *Ethical guidelines for educational research*. London: British Educational Research Association.

Gunby, J. D & Schutz, P.A. (2016). Developing A Mixed Method Proposal. A Practical Guide for Researchers. American Educational Research Journal, Sage Publications, Nov, 2016.

Gupta, P., Singh, B., & Marwaha, T. (2013). Relationship between social media and academic performance in distance education. *Universal Journal of Educational Research, 1*(3), 185-190, 2013. DOI: 10.13189/ujer.2013.010307

Hameed, Z., Maqbool, A., Aslam, E., Hassan, E., & Anwar, M. (2013). Effect of social networking sites on student academic performance and behaviour in the University of Pakistan. *Asian journal of empirical research*, *3*(6), 775-784.

Hassan, F. M., Khalifa, F. N., El Desouky, E. D., Salem, M. R., & Ali, M. M. (2020). Cyber violence pattern and related factors: Online survey of females in Egypt. *Egyptian Journal of Forensic Sciences*,*10*(6), 1-7. https://doi.org/10.1186/s41935-020-0180-0

Hunter, C. (2012). Number of Facebook users could reach 1 Billion by 2012. *The Exponent Online*, January 12, 2012, accessed November 8, 2012. http://www.purdueexponent.org/features/article_8815d757-8b7c-566f-8fbe-49528d4d8037 .html.

Iffat, A. P. (2016). Social media and women: A gratification analysis. *The Women, Research Journal*, *8*, 2016.

Internet World Stats (2021). *Internet Users Statistics for Africa (Africa Internet Usage, 2021 Population Stats and Facebook Subscribers)*. www.internetworldstats.com/stats.htm

Iordache, D. D., Lamanauskas, V. (2013). Exploring the usage of social networking websites: perceptions and opinions of Romanian university students. *Informatica Economică*, *17*(4), 18-25.

Jain, N., Verma, A., Verma, R., & Tiwari, P. (2012). Going Social: The Impact of Social Networking in Promoting Education. *International Journal of Computer Science (IJCSI)*, *9*(1), 483-485. ISSN: 1694-0814. http://eric.ed.gov/?id=ED548379

Jenssen, B. P., Klein, J. D., Salazar, L. F., Daluga, N. A., & Diclemente, R. J. (2009). *Exposure to tobacco on the Internet*. Pediatrics journal[online] 2009. Available from: URL: http://www.ncbi.nlm.nih.gov

Junco, R. (2015). Student class standing, Facebook use and academic performance. *Journal of Applied Developmental Psychology*, *36*, 18-29.

Jwan, J. (2010). *Conducting Qualitative Research: Current Trends and Developments*. Moi University 5th Campus-Wide Research Workshop 3

Khan, S. (2010). Impact of social networking websites on students. *Abasyan journal of social sciences*, *5*(2), 56-75. www.irjims.com.

Kenya National Bureau of Statistics. (2019). *2019 Kenya Population and Housing Census Volume I: Population by County and Sub County*. Retrieved 7 December 2019.

Kolan, B. J. & Dzandza, P. E. (2018). Effect of social media on academic performance of

students in Ghanaian Universities: A case study of University of Ghana, Legon. *Library Philosophy and Practice (e-journal), 1637*. https://digitalcommons.unl.edu/libphilprac/1637

Kombo, D. K., & Tromp, D. L. A. (2011). *Proposal and thesis writing: An introduction.* Nairobi: Acts Press.

Koross, R., & Kosgei, S. (2016). The Role of social media on student unrests in Kenyan public universities. *International Journal of Scientific Research & Innovative Technology*, *3*(6).

Kothari, C. R. (2014). *Research methodology: Methods and Techniques* (3rd Edition). New Delhi: New Age International Publishers.

Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and Psychological Measuremen*t, *1970*(30), 607-610. https://doi.org/10.1177/001316447003000308

Kumar, R. (2014). *Research Methodology* (4th ed.): A Step-by-Step Guide for Beginners. New Delhi: SAGE Publications India Pvt Ltd. https://www.ebooks.com/en-us/book/1619553/research-methodology/ranjit-kumar/

Kuppuswamy, S., & Narayan, P. (2010). The impact of social networking websites on the education of youth. *Internal Journal of Virtual Communities and Social Networking (IJVCSN)*, *2*(1), 67-79.

Lenhart, A. (2007, January 3). Social networking websites and teens: An overview. *Pew Internet and American Life Project*, Retrieved March 18, 2008 from http://www.pewinternet.org/pdfs/PIP_SNS_Data_Memo_Jan_2007.pdf

Lester, J. & Perini, M. (2010). Potential of social networking sites for distance education student engagement. *NewDirectionsforCommunityColleges*,*150*,67–77.

Lewis, R., Rowe, M., & Wiper, C. (2017). Online abuse of feminists as an emerging form of violence against women and girls. *Br J Criminol*, *57*(6), 1462–1481. https://doi.org/10.1093/bjc/azw073

Li, J., Lai, J., & Zhang, G. (2015, July). *Investigating the reasons of hiding personal relationships in SNS*. In Proceedings of the 2nd European Conference on Social Media 2015: ECSM 2015 (p. 278). Academic Conferences Limited.

Liaw, J. O. H. (2016). Waspada Ancaman Jenayah Siber. *Utusan Online*. 12 Julai. http://www.utusan.com.my/rencana/waspada-ancaman-jenayah-siber-1.352440

Manasijević, D., Živković, D., Arsić, S., & Milošević, I. (2016). Exploring students'

purposes of usage and educational usage of Facebook. *Computers in Human Behavior*, 60, 441-450.

Marett, M. J. & Choo, W. F. (2016). Victimization after meeting with online acquaintances: A cross-sectional survey of adolescents in Malaysia. Journal of Interpersonal Violence.

Marilyn, K. S. (2013). Assumptions, Limitations, Delimitations and Scope of the Study. A dissertation and scholarly research. https;//wwwscribd.com/document/360403247/AssumptionsLimitations-Delimitation-and-scope-the-study

Martinez-Mesa, J. (2016). Sampling: How to Select Participants in my Research Study? https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4938277/

Mason, R. & Rennie, F. (2007). Using web 2.0 for learning in the community. *Internet and Higher Eduction,10,* 196-203.

Maya, k. G. (2015). Achievement scripts, media influences on Blacks students' academic performance, self-perceptions and carrier interests. *Journal of Black Psychology, 42*(3), 195-220. DOI: 10.1177/0095798414566510

McCawley, P. (2009). *Methods of conducting an educational needs assessment*. University of Idaho Extension. University of Idaho.

McLuhan, M. (1964). *Technological determinism*. Retrieved 12 September 2012 from http://masscommunicate.files.wordpress.com/2010/04/technological-determinism-marshall-mcluhan.pdf

Mediabistro (2014). *Bookmark it: A comprehensive look at 2014 global Internet and social media stats [DECK]*. mediabistro.com/alltwitter/files/2014/01/wearesocial-social media-penetration-worldwide-e1389183989165.png.

Mingle, J., & Musah, A. (2015). Social media network participation and Academic performance in senior High schools in Ghana. *Library philosophy and practice (e-journal)*, Paper 1286. http://digitalcommons.unl.edu/libphilprac/1286.

Mohajan, H. K. (2017). Good Criteria for Good Measurement in Research: Validity and Reliability. https://mpra.uni-muenchen.de/83458/

Mohd Nawi, M. A. & Chy Ren, C. (2014). Understanding the negative effects of social-networking Facebook on women. *International Women Online Journal of Distance Education, 3*(1), 10–17.

MoE (2018). *Sessional paper on reforming education and training for sustainable development 2018*. Nairobi, Kenya.

Molina, J. & Cameroon, R. (2015). *Emergent MMR management and Marketing*. Oxford Handbook of Mixed and Multimethod Research (Eds), Oxford University Press.

Moshi, T. B., Ndeke, F. N., Asatsa, S., & Ngozi, E. O. (2018). Social media use influence on learning behaviour of secondary school students in Moshi Municipality, Tanzania. *International Journal of Indian Psychology*, *6*(3), 83-92. DIP:18.01.029/20180603, DOI:10.25215/0603.029

Murphay, M. (2016). Population Definition for Comparative Surveys in Education. https://research.acer.edu.ac/cgi/viewcotent.cgi?article=1022&content=ar_misc

Mutua, W. (2011). *East Africa uptake of Facebook among urban youth [online]*. Retrieved, July 15th 2017-blogsy.net/Kenya/technology/east-Africa.

National Crime Prevention Council. (2014). *Stop cyberbullying before it starts*. Retrieved August 24, 2016.

Neubauer, B. E. (2019). How Phenomenology can help us learn from the experiences of others. https://link.spinger.com/article/10.1007/s400347-019-0509-2

Nzambi, N. P. (2012). *Role of the Head Teachers in Instructional Supervision as perceived By Teachers in Secondary Schools in Kitui County, Kenya*.: http://www.library.ku.ac.ke/handle/123456789/7277

Obi, N. C., Bulus, L. D., Adamu, G. M., & Sala'at, A. B. (2012). The need for safety consciousness among youths on social networking sites. *Journal of Applied Science and Management (JASM)*, *14* (1).

O'Keeffe, G. S. & Clake-pearson, K. C. (2011). *The impact of social media on children, adolescents and families*. American Academy of Peadiatrics. pediatrics.aappublications.org

Omoye, M. A. (2014). *New media technologies and advertising practice in Nigeria*. Polish Academy of Sciences, Polónia

Ondiek, J. (2008). *Techniques of Writing Research Proposals and Reports in Education and Social Sciences*. Nairobi: Kanezja Publishers.

Onwuegbuzie, A. J., & Leech, N. L. (2004). *Enhancing the interpretation of significant findings: The role of mixed method research*. The Qualitative Report, *9*(4), 770-792. http://www.nova.edu/sss/QR9-4/onwuegbuzie.pdf

Orodho, J. A. (2010). *Techniques of writing research proposals and reports in education and social sciences.* Nairobi: Maseno, Kanezja HD Enterprises.

Orodho, J.A. *(2009). Elements of education and social science research methods.* Nairobi: Kanezja / Mazola Publishers.

Osharive, P. (2015). *Social media and academic performance of students, conference paper of January 2015*. Retrieved September, 2016 from https://www.researchgate.net/publication/273765340

Owusu, A. & Agatha, G. L. (2015). Use of social media and its impacts on academic performance of tertiary students. A case study of koforidua polytechnic, Ghana. *Journal of education and practice, 6*. https://www.iiste.org/journals/ndex.php/JEP/article/view/20048

Pagoto, S., Waring, M. E., May, C. N., Ding, E. Y., Kunz, W. H., Hayes, R., & Oleski, J. L. (2016). Adapting behavioral interventions for social media delivery. *Journal of Medical Internet Research, 18*(1), 24. DOI:10.2196/jmir.5086.

Pantic, I. (2014). *Online social networking and mental health*. Cyberpsychol Behav Soc Netw *17*, 652-657.

Plano, V. L. C & Ivancova, N. V. (2015). *Mixed Methods Research: A Guide to the Field* (Mixed Methods Research Series). Sage Publications.

Poellhuber, B. & Anderson, T. (2012). Distance students for social media and collaboration. *The International Review of Research in Open and Distance Learning*, *12*(6), 102-125.

Rap, S. & Blonder, R. (2017). Thou shall not try to speak in the Facebook language: Students' perspectives regarding using Facebook for chemistry learning. *Computers and Education, 114*, 69-78.

Republic of Kenya. (2013). *Ministry of Planning, National Development and Vision 2030: Vihiga County Development Profile, 2013*.

Rosen, L. (2011). *Poke me: How social networks can both help and harm our kids*. Washington, DC: American Psychological Association.

Salvation, M. & Adzharuddin, N. A. (2014). The influence of social networking sites upon academic performance of Malaysian Students. *International Journal of Humanities and Social Sciences*, *4*(10), 131-137. www. ijhssnet.com./journal

Selwyn, N. (2012). Making sense of young people, education and digital technology: The role of sociological theory. *Oxford Review of Education*, *38*(1), 81–96.

Shukor, S. A., Musa, N. A., & Shah, H. A. R. (2017) studied the Victimization of children and women on the Internet in Malaysia: A legal discourse. *International Journal for Studies on Children, Women, Elderly and Disabled*, *2*, 1–7.

SIMElab Africa (2019). Social *Media Consumption in Kenya: Trends and Practices*. United States International University-Africa (USIU-Africa)

Šincek, D., Duvnjak, I., & Milić, M. (2017). Psychological outcomes of cyber-violence on victims, perpetrators and perpetrators / victims. *Hrvatska revija za rehabilitacijska istraživanja*, *53*(2), 98–110. https://doi.org/10.31299/hrri.53.2.8

Singh, J. (2015). Violence against women in cyber world: A special reference to India. *Int J Adv Res Manag Soc Sci*, *4*(1), 60–76.

Smith, M. R. & Marx, L. (1994). Technology drive *history? The dilemma of technological determinism*. Cambridge, MA: MIT Press, 1994

Social Media Statistics. (2014). *Digital insights*. blog.digitalinsights.in/social-media-users 2014-statsnumbers/05205287.html.assessed on 15-01-15

Staude-Müller, F., Hansen, B., & Voss, M. (2012). How stressful is online victimization? Effects of victim's personality and properties of the incident. *Eur J Dev Psychol*, *9*(2), 260–274. https://doi.org/10.1080/17405629.2011.643170

Theofanidis, D. & Fountouki, A. (2019). *Limitations and Deli*mitations in the research process. Perioperative nursing (GORNA), E-ISSN:2241-3634, 7(3), 155–162. http://doi.org/10.5281/zenodo.2552022

Tully, M. (2011, March). *Research posts*. Retrieved on 2/8/2017 from http://sites.google.com/site/tullyme/kenyareserach-1/

Veletsianos, G. & Navarette, C. (2012). Online social networks as formal learning environments: learner experiences and activities. *The International Review of Research in Open and Distance Learning*, *13*(1), 144-166.

Winkelman, S. B., Early, J. O., Walker, A. D., Chu, L., & Yick-Flanagan, A. (2015). Exploring cyber harassment among women who use social media. *Univ J Public Health*, *3*(5), 194–201. https://doi.org/10.13189/ujph.2015.030504

World Health Organization. (2017). *Violence against women*. https://www.who.int/news-room/fact-sheets/detail/violence-against-women. Accessed 30 Jan 2019.

Yan, Y. (2019). The research on teacher-student relationship from the perspective of educational philosophy. *Open Journal of Social Sciences*, *7*(12), 448-459. doi: 10.4236/jss.2019.712034. Available at https://www.scirp.org/(S(351jmbntvnsjt1aadkposzje))/journal/paperinformation.aspx?paperid=97536

APPENDICES

APPENDIX 1

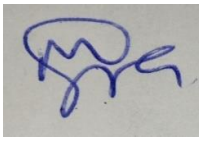
COVER LETTER TO RESPONDENTS

Dear respondent,

You have been identified to participate in this research to predict the social media usage and students' academic performance in Teachers' Training Colleges in Vihiga County. Your answers will be treated with utmost confidentiality. Hence, you are asked to answer the following questions without reservations. Do not discuss your response with other respondents. It is believed that the research outcomes will be helpful to educators, students, tutors, the government and other policy makers. Your response in this survey will be highly valued. Your co-operation in this exercise is highly appreciated in advance.

Thank you.

Yours sincerely,



Humphrey Musera Lugonzo.

APPENDIX 2

STUDENTS' QUESTIONNAIRE

Dear Student,

The aim of this questionnaire is to collect data on the influence of social media on academic performance of learners in Teachers' Training Colleges in Vihiga County so that possible solutions can be identified. Answer the questions genuinely and freely as you can. Your answers will be treated confidently. Please place a tick (√) on the answer you think is right or by giving a short statement.

PART 1: Student's Personal Information

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

1b. What is your age? Below 19 [ ] 20-29 [ ] 30-39 [ ] Above 40 [ ]

1c. What type of college is this? Public [ ] Private [ ]

2a. In which year of study are you? 1st year [ ] 2nd year [ ] 3rd year [ ]

2b. How much time do you spend on your personal studies or academics per day?

Less than 3 hours [ ] 4-7 hours [ ] 8-11 hours [ ] 12 or more hours [ ]

2c. How can you describe your performance in the end of term examination which you did last term (Place a tick)?

Low: 0% to 40% [ ] Medium: 41% to 70% [ ] High: 71% to 100% [ ]

Part 2: Types of social media used for communication and academic performance

3a. Which of the following devices do you use to access social media? **(Tick)**

Desktop [ ] Laptop [ ] Mobile phone [ ] Tablet [ ]

3b. State **ONE** social media that you use frequently among the following?

Facebook [ ] WhatsApp [ ]

Twitter [ ] Instagram [ ] YouTube [ ]

4. Which other social sites do you use on social media. Please specify? _____

5a. Do you use social media for communication? Yes [ ] No [ ]

5b. If Yes, how often do you use social media to communicate with other people?

Rarely [ ] Moderately [ ] Regularly [ ]

6. Do you think the type of social media which students use to communicate affect their academic performance **positively**? Yes [ ] No [ ]

7a. The statements below show how students use social media to promote / support their studies **positively**. Indicate your response to show if you agree or disagree with them by placing a tick in the appropriate column using the following key: **SA-Strongly agree, A–Agree, N-Not sure (neither agree nor disagree), D-Disagree and SD-Strongly disagree**.

No	Response on Social Media use and Academics	Rating				
		SA	A	N	D	SD
1.	Students use social media to discuss and do assignments with fellow students					
2.	Students use social media to make inquiries and ask tutors questions					
3.	Students use social media to attend lectures and classes online					
4.	Students use social media to seek support from college administration like fees inquiries					
5.	Students use social media to chat or post messages / texts					
6.	Students use social media to share / post pictures / images					
7.	Students use social media to share / post videos or clips					

7b. In your opinion, how else do you think the social media used by students to communicate affect their academic performance in this college **positively**? _____

Part 3: Frequency of social media use and academic performance

8a. How frequent do you access or use social media per day?

Not frequent [ ] Frequent [ ] Very frequent [ ]

8b. On average, how many hours do you spend on social media per day?

Below 1 hrs [ ] 2 to 3 hrs [ ] 4 to 5 hrs [ ] Over 6 hrs [ ]

9a. Do you think frequent usage of social media affects or poses a challenge to the academics of students or it affect their academics **negatively**? Yes [ ] No [ ]

9b. If **YES**, rate the **negative** effect of social media on the academic performance of students

High [ ] Medium [ ] Low [ ]

10a. This table indicates the way using social media frequently affect the academics of students **negatively**. Give your response to show if you agree or disagree with the statements by placing a tick in the appropriate column using the following key: **SD-Strongly disagree, D-Disagree, N-Not sure (neither agree nor disagree), A–Agree and SA-Strongly agree**.

No	Response on frequent usage of social media	Rating				
		SA	A	N	D	SD
1.	Social media waste their time of learning by reducing the time they use on their studies					
2.	Social media distract them during lesson time and library sessions					
3.	Social media diverts the attention and concentration of students towards learning					
4.	Social media cause them to postpone doing assignments and therefore submit them late					
5.	It leads to poor or low academic performance by directly affecting their cumulative/average grade point					

10b. Briefly explain how else you think using social media frequently affect the academic performance of students **negatively** _____

Part 4: Interpersonal relationships and academic performance

11. Do you think social media enable students to socialize in order to improve their interpersonal relationships with other people? Yes [ ] No [ ]

12. How can you rate the level of your interpersonal relationships with fellow students in this college when using social media? High [ ] Moderate [ ] Low [ ]

13a. Generally, who do you relate, interact, connect or communicate with mostly on social media among the following to maintain a regular contact with them?

People	Family members like parents and siblings	Teachers	Friends	Strangers	Others
Tick					

13b. Please specify other people that you communicate with using social media apart from the ones listed above _____

13c. The following statements seek your opinion on the activities that students engage in when they are on social media to enable them to maintain interpersonal relationships with other people. State the extent to which you agree by putting a tick (√) on your response using the following scale: **1 = Always, 2 = Sometimes, 3 = Rarely, 4 = Never**.

No	Response on interpersonal relationships	Rating			
		1	2	3	4
1.	Making new friends				
2.	Posting and viewing chats, photos, images and videos				
3.	Viewing and reading the profiles of other people				
4.	Discussing academic issues with classmates				
5.	Connecting with colleagues to do class assignments				

14. Which other activities do you think students engage in when socializing on social media to maintain their interpersonal relationships with other people? _____

Part 5: Magnitude of online attacks and academic performance

15a. Do you think people are attacked online when using social media? Yes [ ] No [ ]

15b. Whom do you think are more prone to online attacks when using social media?

Males [ ] Females [ ]

15c. How can you rate the magnitude of online attacks which people face when using social media? High [ ] Medium [ ] Low [ ]

16a. Do people always know the offenders or people who attack them online when using social media? Yes [ ] No [ ]

16b. Who of the following people do you think are the main source of online attack?

Friends [ ] Family members [ ] Strangers/people you do not know [ ]

16c. On which social media site do you think online attacks are rampant:

Facebook [ ] WhatsApp [ ] Twitter [ ] Instagram [ ]

17a. The table below shows some types of online attacks which people commonly face when using social media. Place a tick to indicate how you rate them using the following scale: **1-Not often, 2-Often and 3-Very often**.

No	Response on Type of Online Attacks	Rating		
		1	2	3
1.	Online bullying like getting offensive, humiliating, hurting and insulting text messages or threats			
2.	Online defamation like attacking your good reputation or name			
3.	Online sexual harassment like unwanted nasty pornographic photos/videos			
4.	Online hacking of your online account to destroy your personal information			
5.	Receiving infected files or programs or viruses through email			

17b. Please specify / name any other type of online attacks that you know about other than the ones listed above _____

18a. Do you think most people report online attack cases which they encounter on social media? Yes [ ] No [ ]

18b. If Yes, briefly state why they can report _____

18c. To whom can students easily or freely report the offender of a case of online attack if they are attacked online when using social media?

College administration or tutor [ ] Friends like fellow students [ ]

Family members like parent [ ] Security agency like police [ ]

Group or social media administrator [ ] Others [ ]

19a. Why do you think some people do not report cases of online attacks to the police?

They fear to be stigmatized more so if the offender is a family member [ ]

They are not aware of the laws that govern cyber violence [ ]

They fear to be ashamed after reporting the online attack which they faced [ ]

They think that their reputation will be damaged when they report the cases [ ]

19b. Briefly state any other reason which you think makes people not to report cases of online attacks _____

20. Other than reporting cases of online attacks, which other action can students take to deal with the problem of online attacks when using social media among the following:

Change their contact or profile information [ ] Block the offender [ ]

Leave online activities on social media [ ] Do nothing / No response [ ]

Revenge by attacking other people online [ ]

Revenge by attacking / confronting the offender online [ ] Others [ ]

21. Do you think being attacked online when using social media frequently can affect the academic performance of students? Yes [ ] No [ ]

22. If YES, why do you think online attacks can affect the academics of students? _____

_____

THANK YOU VERY MUCH FOR PARTICIPATING.

QUESTIONNAIRE CHECKED BY: Humphrey **SIGN:**  **DATE:** 19/4/2022

APPENDIX 3

TUTORS' QUESTIONNAIRE

Dear Tutor,

The aim of this questionnaire is to collect data on social media and students' academic performance in Teachers' Training Colleges in Vihiga County so that possible solutions can be identified. Answer the questions genuinely and freely as you can. Your responses will be treated confidently. Please give your response by either placing a tick (√) at the appropriate place or by giving a short statement.

PART 1: Tutor's Demographic Information

1a. Indicate your gender: Male [ ] Female [ ]

1b. What is your age bracket? Below 29 [ ] 30-39 [ ] 40-49 [ ] Above 50 [ ]

1c. What is the type of this college? Public [ ] Private [ ]

2a. Indicate your highest level of academic qualification:

Diploma [ ] Bachelors [ ] Masters [ ] Doctorate [ ]

2b. For how long have you served as a tutor in this college?

Below 5 years [ ] 6 to 10 years [ ] 11 to 15 years [ ] Over 15 years [ ]

2c. From your experience, how much time do you think students in this college spend on their personal studies or academics per day?

Less than 3 hours [ ] 4-7 hours [ ] 8-11 hours [ ] 12 or more hours [ ]

2d. What is your general assessment of the academic performance of students in this college in the end of term examination which they did last term?

Low: 0% to 40% [ ] Medium: 41% to 70% [ ] High: 71% to 100% [ ]

2e. Indicate below the overall mean of this TTC in the Primary Teacher Examination (PTE) between 2016 and 2020:

Year	2016	2017	2018	2019	2020
Mean					

2e. How can you rate the academic performance of learners in this college in the Primary Teacher Examination (PTE) in the last five years?

High: [ ] Medium: [ ] Low: [ ]

Part 2: Types of social media used for communication and academic performance

3a. Which of the following devices do you think students use to access social media?

Desktop [ ] Laptop [ ] Mobile phone [ ] Tablet [ ]

3b. State **ONE** type of social site that you think your students use frequently when they are on social media between the following? Facebook [ ] WhatsApp [ ]

Twitter [ ] Instagram [ ] YouTube [ ]

4. Which other social sites do you think students use on social media? _____

5a. Do you think students use social media for communication? Yes [ ] No [ ]

5b. If Yes, how often do you think they use social media to communicate with others?

Rarely [ ] Moderately [ ] Regularly [ ]

6. Do you think the type of social media which students use to communicate affect their academic performance **positively**? Yes [ ] No [ ]

7a. The statements below show how students use social media to promote / support their studies **positively**. Indicate your response to show if you agree or disagree with the statements by placing a tick in the appropriate column using the following key: **SA-Strongly agree, A–Agree, N-Not sure (neither agree nor disagree), D-Disagree and SD-Strongly disagree**.

No	Response on Social Media use and Academics	Rating				
		SA	A	N	D	SD
1.	Students use social media to discuss and do assignments with fellow students					
2.	Students use social media to make inquiries and ask tutors questions					
3.	Students use social media to attend lectures and classes online					
4.	Students use social media to seek support from college administration like fees inquiries					
5.	Students use social media to chat or post messages / texts					
6.	Students use social media to share / post pictures / images					
7.	Students use social media to share / post videos or clips					

7b. In your opinion, how else do you think the social media used by students to communicate affect their academic performance in this college **positively**? _____

_____

Part 3: Frequency of social media use and academic performance

8a. How frequent do you think students access or use social media daily?

Not frequent [ ] Frequent [ ] Very frequent [ ]

8b. On average, how many hours do you think students spend on social media per day?

Below 1 hrs [ ] 2 to 3 hrs [ ] 4 to 5 hrs [ ] Over 6 hrs [ ]

9a. Do you think frequent usage of social media affects or poses a challenge to the academics of students or it affect their academics **negatively**? Yes [ ] No [ ]

9b. If **YES**, rate the **negative** effect of social media on the academic performance of students

High [ ] Medium [ ] Low [ ]

10a. This table indicates the way using social media frequently affect the academics of students **negatively**. Give your response to show if you agree or disagree with the statements by placing a tick in the appropriate column using the following key: **SD-Strongly disagree, D-Disagree, N-Not sure (neither agree nor disagree), A–Agree and SA-Strongly agree**.

No	Response on frequent usage of social media	Rating				
		SA	A	N	D	SD
1.	Social media waste their time of learning by reducing the time they use on their studies					
2.	Social media distract them during lesson time and library sessions					
3.	Social media diverts the attention and concentration of students towards learning					
4.	Social media cause them to postpone doing assignments and therefore submit them late					
5.	It leads to poor or low academic performance by directly affecting their cumulative/average grade point					

10b. Briefly explain how else you think using social media frequently affect the academic performance of students **negatively** _____

Part 4: Interpersonal relationships and academic performance

11. Do you think social media enable students in this college to socialize in order to improve their interpersonal relationships with other people? Yes [ ] No [ ]

12. How can you rate the level of interpersonal relationships of students in this college when using social media? High [ ] Moderate [ ] Low [ ]

13a. Generally, who do you think students relate, interact, connect or communicate with mostly on social media among the following to maintain a regular contact with them?

People	Family members like parents and siblings	Teachers	Friends	Strangers	Others
Tick					

13b. Please specify other people that students communicate with using social media apart from the ones listed above _____

13c. The following statements seek your opinion on the activities that students engage in when they are on social media to enable them to maintain interpersonal relationships with other people. State the extent to which you agree by putting a tick (√) on your response using the following scale: **1 = Always, 2 = Sometimes, 3 = Rarely, 4 = Never**.

No	Response on interpersonal relationships	1	2	3	4
1.	Making new friends				
2.	Posting and viewing chats, photos, images and videos				
3.	Viewing and reading the profiles of other people				
4.	Discussing academic issues with classmates				
5.	Connecting with colleagues to do class assignments				

14. Which other activities do you think students engage in when socializing on social media to maintain their interpersonal relationships with other people? _____

_____

_____

Part 5: Online attacks and academic performance

15a. Do you think people (especially students) are attacked online when using social media?

Yes [ ] No [ ]

15b. Whom do you think are more prone to online attacks when using social media?

Males [ ] Females [ ]

15c. How can you rate the magnitude of online attacks which people face when using social media? High [ ] Medium [ ] Low [ ]

16a. Do people always know the offenders or people who attack them online when using social media? Yes [ ] No [ ]

16b. Who of the following people do you think are the main source of online attack?

Friends [ ] Family members [ ] Strangers/people you do not know [ ]

16c. On which social media site do you think online attacks are rampant:

Facebook [ ] WhatsApp [ ] Twitter [ ] Instagram [ ]

17a. The table below shows some types of online attacks which people commonly face when using social media. Place a tick to indicate how you rate them using the following scale: **1-Not often, 2-Often and 3-Very often**.

No	Response on Type of Online Attacks	Rating		
		1	2	3
1.	Online bullying like getting offensive, humiliating, hurting and insulting text messages or threats			
2.	Online defamation like attacking your good reputation or name			
3.	Online sexual harassment like unwanted nasty pornographic photos/videos			
4.	Online hacking of your online account to destroy your personal information			
5.	Receiving infected files or programs or viruses through email			

17b. Please specify / name any other type of online attacks that you know about other than the ones listed above _____

18a. Do you think most people report online attack cases which they encounter on social media? Yes [ ] No [ ]

18b. If Yes, briefly state why they can report _____

18c. To whom can students easily or freely report the offender of a case of online attack if they are attacked online when using social media?

College administration or tutor [ ] Friends like fellow students [ ]

Family members like parent [ ] Security agency like police [ ]

Group or social media administrator [ ] Others [ ]

19a. Why do you think some people do not report cases of online attacks to the police?

They fear to be stigmatized more so if the offender is a family member [ ]

They are not aware of the laws that govern cyber violence [ ]

They fear to be ashamed after reporting the online attack which they faced [ ]

They think that their reputation will be damaged when they report the cases [ ]

19b. Briefly state any other reason which you think makes people not to report cases of online attacks _____

20. Other than reporting cases of online attacks, which other action can students take to deal with the problem of online attacks when using social media among the following:

Change their contact or profile information [ ] Block the offender [ ]

Leave online activities on social media [ ] Do nothing / No response [ ]

Revenge by attacking other people online [ ]

Revenge by attacking / confronting the offender online [ ] Others [ ]

21. Do you think being attacked online when using social media frequently can affect the academic performance of students? Yes [ ] No [ ]

22. If YES, why do you think online attacks can affect the academic performance of students? _____

_____

THANK YOU VERY MUCH FOR YOUR PARTICIPATION AND CO-OPERATION.

QUESTIONNAIRE CHECKED BY: Humphrey **SIGN:**  **DATE:** 19/4/2022

APPENDIX 4

INTERVIEW GUIDE FOR PRINCIPALS

PART 1: Principals' Background Information

1a. Indicate your gender: Male [ ] Female [ ]

1b. What is your age bracket? Below 29 [ ] 30-39 [ ] 40-49 [ ] Above 50 [ ]

1c. Indicate your highest level of academic qualification:

Diploma [ ] Bachelors [ ] Masters [ ] Doctorate [ ]

2. In your view, comment about the general performance of this TTC in primary teacher examination (PTE) in the last five years. (Was it upward or downward?)

3. What can you comment about the extent of using the various types of social media by learners in this college? (That is, from your observations, do the learners in this college use / access social media)

4. Based on your observation how often do students in this college access or go to social media (that is, or how long do they spend on social media).

5. In your opinion, do you think use of social media affects academic performance of learners in this college negatively? If YES, how do you think it affects them?

6. What is your comment about the nature of social interpersonal relationships of the students in this college? (How do they relate socially when using social media)

7. In your opinion, which types of online attacks are learners prone to?

8. Do people report these cases? If YES, why and if NO why?

9. What are your suggestions about the link between online attacks and academic performance of students in this college?

APPENDIX 5

KREJCIE AND MORGAN TABLE

Table 1: Table for Determining Sample Size from a Given Finite Population

N	*S*	*N*	*S*	*N*	*S*
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	10000	370
150	108	750	254	15000	375
160	113	800	260	20000	377
170	118	850	265	30000	379
180	123	900	269	40000	380
190	127	950	274	50000	381
210	136	1100	285	1000000	384

Note: *N* is Population size while *S* is Sample size.
Source: Krejcie & Morgan (1970)

APPENDIX 6

CONSENT FORM

KISII UNIVERSITY

SCHOOL OF EDUCATION AND HUMAN RESOURCE DEVELOPMENT,

BOX 408-40200,

KISII, KENYA.

INFORMED CONSENT FORM

TITLE: Social media usage and students' academic performance in Teachers' Training Colleges in Vihiga County, Kenya.

NAME OF PRINCIPAL RESEARCHER: Humphrey Musera Lugonzo

1. PURPOSE AND BACKGROUND

The researcher is doing the above stated study. So, you are being asked to participate in the research to aid in collecting data that will assist in assessing the link between social media and academic performance of students. You were picked since the researcher believes that you have valuable information which you can provide in the study.

2. PROCEDURES

If you accept to be involved, then you will be needed to answer the questions in the tool given to you. The questions will examine the types of social media, frequency of using social media, interpersonal relationships and online attacks.

3. CONFIDENTIALITY

The information you give in this research will be confidentially kept. Your personal details will not be used in any document made from this research like the thesis. All the information

obtained from this research will be coded separately in order to avoid identifying the respondents directly. This information will then be kept in files and the files locked in a secure place at all times. The files will only be accessed by the research personnel. All the files will then be destroyed at the end of the research in the next six months.

4. VOLUNTARY PARTICIPATION

You are participating in the study voluntary. You can pull out from being involved in the research if you choose to at any time without being forced.

5. BENEFITS OF PARTICIPATION

You are not entitled to any direct or indirect gain for being involved in the study. The study will assist in future predictions and alongside help you to gain insight about the influence of social media on performance of learners' in academics.

6. QUESTIONS

If you have any questions concerning this research, please contact Humphrey Musera Lugonzo via +254723448840 or the email hmusera@yahoo.com for clarification.

CONSENT

By signing on the space below, it shows that you have agreed to participate in this study since you have read and understood all the information in this form; all your questions have been answered; and that you have obtained your copy of this form for you to keep.

Signature: _____ Date: _____

Research Participant

APPENDIX 7

INTERNET USERS STATISTICS IN AFRICA

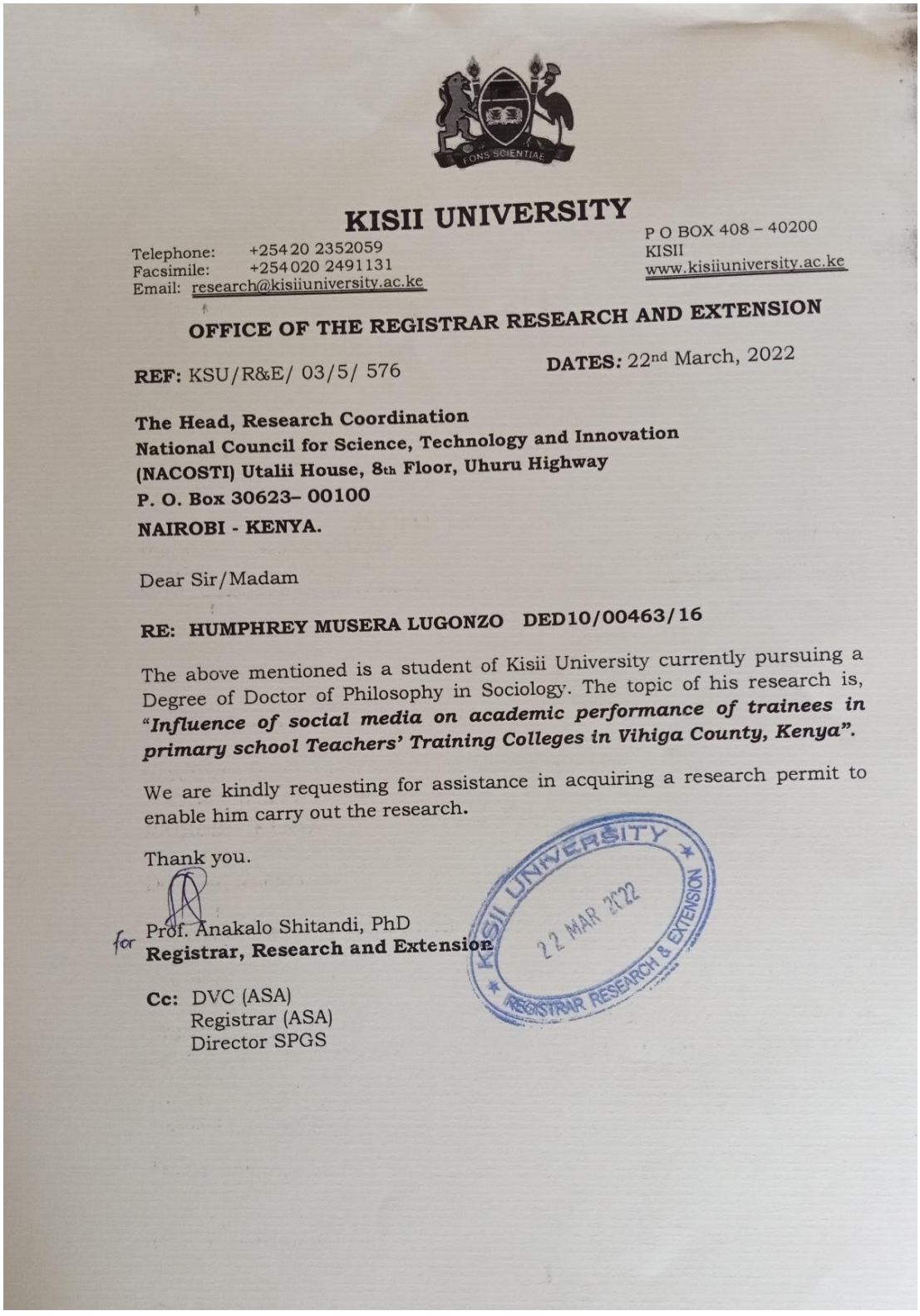
Internet Users Statistics for Africa

(Africa Internet Usage, 2021 Population Stats and Facebook Subscribers)

AFRICA 2021 POPULATION AND INTERNET USERS STATISTICS						
AFRICA	Population (2021 Est.)	Internet Users 31-Dec-2000	Internet Users 31-DEC-20	Penetration (% Population)	Internet Growth % 2000 - 2021	Facebook subscribers 31-DEC-2020
Algeria	44,616,624	50,000	25,428,159	57.0 %	50,756 %	25,140,000
Angola	33,933,610	30,000	8,980,670	26.5 %	29,835 %	2,831,000
Benin	12,451,040	15,000	3,801,758	30.5 %	25,245 %	1,538,500
Botswana	2,397,241	15,000	1,139,000	47.5 %	7,493 %	1,139,000
Burkina Faso	21,497,096	10,000	4,594,265	21.4 %	45,842 %	1,998,200
Burundi	12,255,433	3,000	1,606,122	13.1 %	53,437 %	667,700
Cabo Verde	561,898	8,000	352,120	62.7 %	4,302 %	287,000
Cameroon	27,224,265	20,000	7,878,422	28.9 %	39,292 %	4,267,000
Central African Rep.	4,919,981	1,500	557,085	11.3 %	37,039 %	135,700
Chad	16,914,985	1,000	2,237,932	13.2 %	223,693 %	443,200
Comoros	888,451	1,500	193,700	21.8%	12,813 %	193,700
Congo	5,657,013	500	833,200	14.7 %	166,540 %	833,200
Congo, Dem. Rep.	92,377,993	500	16,355,917	17.7 %	3,271,083 %	3,800,000
Cote d'Ivoire	27,053,629	40,000	12,253,653	45.3 %	30,534 %	5,860,000
Djibouti	1,002,187	1,400	548,832	54.8 %	39,102 %	258,100
Egypt	104,258,327	450,000	54,741,493	52.5 %	12,064 %	48,830,000
Equatorial Guinea	1,449,896	500	362,891	25.0 %	72,478 %	120,900
Eritrea	3,601,467	5,000	248,199	6.9 %	4,864 %	6,200
Eswatini	1,172,362	10,000	665,245	56.7 %	6,552 %	339,900
Ethiopia	117,876,227	10,000	21,147,255	17.9 %	211,372 %	6,745,000
Gabon	2,278,825	15,000	1,367,641	60.0 %	9,017 %	830,000
Gambia	2,486,945	4,000	442,050	19.0 %	11,713 %	419,100
Ghana	31,732,129	30,000	14,767,818	46.5 %	49,126 %	7,944,000
Guinea	13,497,244	8,000	2,551,672	18.9 %	31,795 %	1,938,000
Guinea-Bissau	2,015,494	1,500	250,000	12.4 %	16,566 %	140,000
Kenya	54,985,698	200,000	46,870,422	85.2 %	23,335 %	10,444,000
Lesotho	2,159,079	4,000	682,990	31.6 %	16,974 %	490,900
Liberia	5,180,203	500	760,994	14.7 %	152,098 %	658,200
Libya	6,958,532	10,000	5,857,000	84.2 %	58,470 %	5,857,000
Madagascar	28,427,328	30,000	2,864,000	10.1 %	9,446 %	2,864,000
Malawi	19,647,684	15,000	2,717,243	13.8 %	18,015 %	637,600
Mali	20,855,735	18,800	12,480,176	59.8 %	66,284 %	2,033,300
Mauritania	4,775,119	5,000	969,519	20.3 %	19,290 %	927,300
Mauritius	1,273,433	87,000	919,000	72.2 %	956 %	919,000
Mayotte (FR)	279,515	n/a	107,940	38.6 %	n/a	95,500
Morocco	37,344,795	100,000	25,589,581	68.5 %	25,489 %	21,730,000
Mozambique	32,163,047	30,000	6,523,613	20.3 %	21,645 %	2,756,000
Namibia	2,587,344	30,000	1,347,418	52.1 %	4,391 %	792,000
Niger	25,130,817	5,000	3,363,848	13.4 %	67,177 %	577,800
Nigeria	211,400,708	200,000	154,301,195	73.0 %	101,484 %	31,860,000
Reunion (FR)	901,686	130,000	608,000	67.4 %	367 %	608,000
Rwanda	13,276,513	5,000	5,981,638	45.1 %	119,532 %	806,200
Saint Helena (UK)	6,086	n/a	2,300	37.8 %	n/a	2,300
Sao Tome & Principe	223,368	6,500	63,864	28.6 %	882 %	60,800
Senegal	17,196,301	40,000	9,749,527	56.7 %	24,273 %	3,802,000
Seychelles	98,908	6,000	71,300	72.1 %	1,088 %	71,300
Sierra Leone	8,141,343	5,000	1,043,725	12.8 %	20,774 %	833,400
Somalia	16,359,504	200	2,089,900	12.8 %	852,550 %	2,089,900
South Africa	60,041,994	2,400,000	34,545,165	57.5 %	1,339 %	24,600,000
South Sudan	11,381,378	n/a	900,716	7.9 %	n/a	436,600
Sudan	44,909,353	30,000	13,124,100	29.2 %	43,647 %	1,300,000
Tanzania	61,498,437	115,000	23,142,960	37.6 %	20,024 %	5,223,000
Togo	8,478,250	100,000	1,011,837	11.9 %	912 %	860,500
Tunisia	11,935,766	100,000	8,170,000	68.4 %	8,070 %	8,170,000
Uganda	47,123,531	40,000	18,502,166	39.3 %	46,155 %	3,328,000
Western Sahara	611,875	n/a	28,000	4.6 %	n/a	27,000
Zambia	18,920,651	20,000	9,870,427	52.2 %	49,252 %	2,543,000
Zimbabwe	15,092,171	50,000	8,400,000	55.7 %	16,700 %	1,303,000
TOTAL AFRICA	1,373,486,514	4,514,400	590,296,163	43.0 %	12,975 %	255,412,900
Rest of World	6,502,279,070	356,471,092	4,463,594,959	68.6 %	88.3 %	2,475,026,941
WORLD TOTAL	7,875,765,584	360,985,492	5,053,891,122	64.2 %	100.0 %	2,730,439,841

APPENDIX 8

INTRODUCTORY LETTER



KISII UNIVERSITY

Telephone: +254 20 2352059
Facsimile: +254 020 2491131
Email: research@kisiiuniversity.ac.ke

P O BOX 408 – 40200
KISII
www.kisiiuniversity.ac.ke

OFFICE OF THE REGISTRAR RESEARCH AND EXTENSION

REF: KSU/R&E/ 03/5/ 576 **DATES:** 22nd March, 2022

The Head, Research Coordination
National Council for Science, Technology and Innovation
(NACOSTI) Utalii House, 8th Floor, Uhuru Highway
P. O. Box 30623– 00100
NAIROBI - KENYA.

Dear Sir/Madam

RE: HUMPHREY MUSERA LUGONZO DED10/00463/16

The above mentioned is a student of Kisii University currently pursuing a Degree of Doctor of Philosophy in Sociology. The topic of his research is, ***"Influence of social media on academic performance of trainees in primary school Teachers' Training Colleges in Vihiga County, Kenya".***

We are kindly requesting for assistance in acquiring a research permit to enable him carry out the research.

Thank you.

for Prof. Anakalo Shitandi, PhD
Registrar, Research and Extension

KISII UNIVERSITY
22 MAR 2022
REGISTRAR RESEARCH & EXTENSION

Cc: DVC (ASA)
Registrar (ASA)
Director SPGS

APPENDIX 9

RESEARCH LICENSE

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Ref No: **750100**

Date of Issue: **12/April/2022**

RESEARCH LICENSE

This is to Certify that Mr.. Humphrey Musera Lugonzo of Kisii University, has been licensed to conduct research in Vihiga on the topic: INFLUENCE OF SOCIAL MEDIA ON ACADEMIC PERFORMANCE OF TRAINEES IN PRIMARY SCHOOL TEACHERS' TRAINING COLLEGES IN VIHIGA COUNTY, KENYA for the period ending : 12/April/2023.

License No: **NACOSTI/P/22/16973**

750100

Applicant Identification Number

Director General
NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Verification QR Code

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

RESEARCH LICENSE

THE SCIENCE, TECHNOLOGY AND INNOVATION ACT, 2013

The Grant of Research Licenses is Guided by the Science, Technology and Innovation (Research Licensing) Regulations, 2014

CONDITIONS

1. The License is valid for the proposed research, location and specified period
2. The License any rights thereunder are non-transferable
3. The Licensee shall inform the relevant County Director of Education, County Commissioner and County Governor before commencement of the research
4. Excavation, filming and collection of specimens are subject to further necessary clearence from relevant Government Agencies
5. The License does not give authority to tranfer research materials
6. NACOSTI may monitor and evaluate the licensed research project
7. The Licensee shall submit one hard copy and upload a soft copy of their final report (thesis) within one year of completion of the research
8. NACOSTI reserves the right to modify the conditions of the License including cancellation without prior notice

National Commission for Science, Technology and Innovation
off Waiyaki Way, Upper Kabete,
P. O. Box 30623, 00100 Nairobi, KENYA
Land line: 020 4007000, 020 2241349, 020 3310571, 020 8001077
Mobile: 0713 788 787 / 0735 404 245
E-mail: dg@nacosti.go.ke / registry@nacosti.go.ke
Website: www.nacosti.go.ke

APPENDIX 10

RESEARCH AUTHORIZATION BY COUNTY DIRECTOR OF EDUCATION

MINISTRY OF EDUCATION
STATE DEPARTMENT OF EARLY LEARNING AND BASIC EDUCATION

Telegrams: .....
Telephone: (056) 51450
Email:vieducounty@gmail.com
When replying please quote

COUNTY EDUCATION OFFICE,
VIHIGA COUNTY,
P.O. BOX 640 - 50300
MARAGOLI.

REF: MOE/VC/ADM/100/VOL.3/77

Date: 06/05/2022

TO WHOM IT MAY CONCERN

RE: AUTHORITY TO CONDUCT RESEARCH
Mr. HUMPHREY MUSERA LUGONZO

Reference is made to your letter **Ref No. NACOSTI/P/22/16973 dated 12th April,2022**

Permission is hereby granted to the above-named student from Kisii University to conduct research on "**Influence of social media on academic performance of trainees in primary school Teachers' Training College in Vihiga County, Kenya"** this will to enable him to write a project as required by her institution.

Kindly note, in order for the office to be informed a copy of the same be shared with the County Education office for intervention purposes upon completion of the research.

HELLEN NYANG'AU
COUNTY DIRECTOR OF EDUCATION
VIHIGA COUNTY

THE COUNTY DIRECTOR OF EDUCATION
06 MAY 2022
P. O. Box 640-50300, MARAGOLI
Sign:.....

PP

Cc
County Commissioner
VIHIGA

APPENDIX 11

RESEARCH AUTHORIZATION BY COUNTY COMMISSIONER

REPUBLIC OF KENYA

THE PRESIDENCY
MINISTRY OF INTERIOR AND COORDINATION OF NATIONAL GOVERNMENT

Email: vihigacc1992@gmail.com
Telephone: 0202574852
When replying please quote

COUNTY COMMISSIONER
VIHIGA COUNTY
P.O. BOX 75-50300
MARAGOLI

REF: VC/ED/12/1 VOL.III (201)

6th May, 2022

All Deputy County Commissioners,
VIHIGA COUNTY.

RE: RESEARCH AUTHORIZATION: MR. HUMPHREY MUSERA LUGONZO

This is to introduce to you Mr. Humphrey Musera Lugonzo of Kisii University to conduct research on the topic *"Influence of Social Media on Academic Performance of Trainees in Primary School Teachers Training Colleges"* in Vihiga County for a period ending 12th April, 2023.

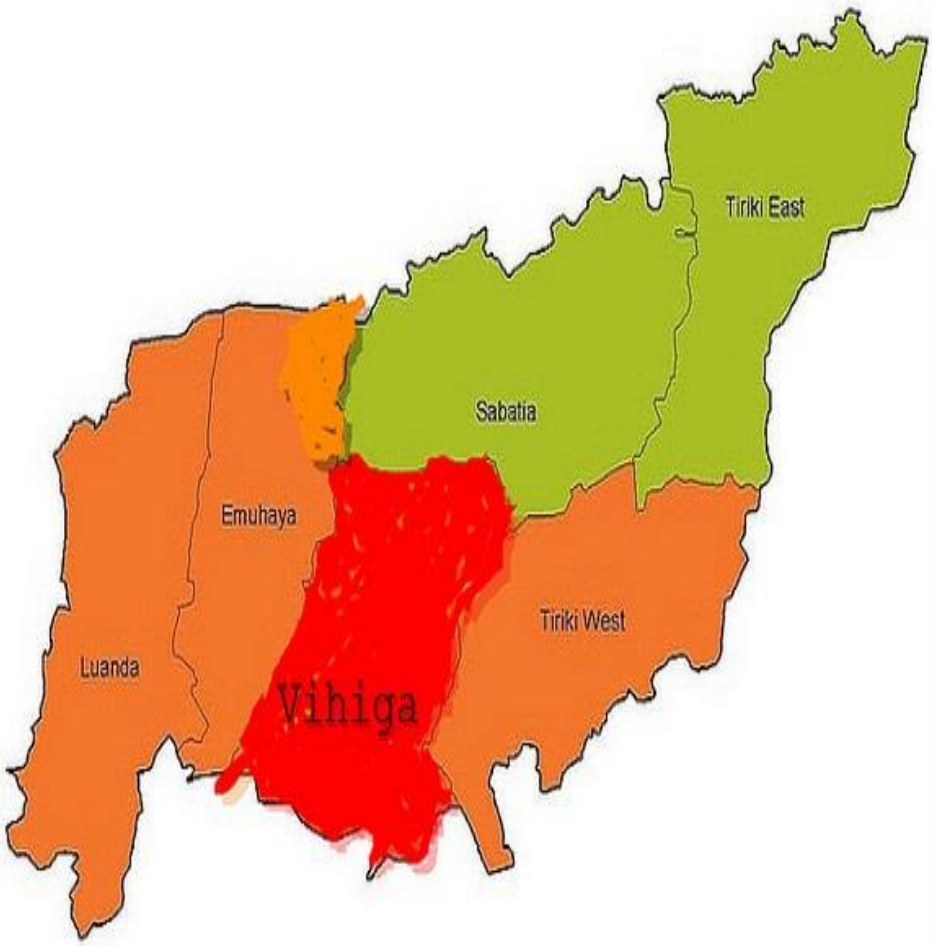
Kindly accord him the necessary assistance.

NAULA J. KONCHELA
FOR: COUNTY COMMISSIONER
VIHIGA COUNTY

Cc. Mr. Humphrey Musera Lugonzo

APPENDIX 12

ADMINISTRATIVE MAP OF VIHIGA COUNTY WITH ITS SUB-COUNTIES



APPENDIX 13

TURNITIN PLAGIARISM REPORT

SOCIAL MEDIA USAGE AND STUDENTS' ACADEMIC PERFORMANCE IN TEACHERS' TRAINING COLLEGES IN VIHIGA COUNTY, KENYA

ORIGINALITY REPORT

14%	14%	4%	7%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	www.ajol.info Internet Source	3%
2	library.kisiiuniversity.ac.ke:8080 Internet Source	2%
3	serek.or.ke Internet Source	2%
4	ejfs.springeropen.com Internet Source	<1%
5	Submitted to Kisii University Student Paper	<1%
6	Submitted to Kenyatta University Student Paper	<1%
7	Submitted to Mount Kenya University Student Paper	<1%
8	ir.mu.ac.ke:8080 Internet Source	<1%
	repository.udom.ac.tz	