

Relationship Between WhatsApp Use and WhatsApp Use Anxiety Among Students in Mixed  
Day Secondary Schools – Kamenu Ward Thika, Kenya

Pauline Wambui Njeri

18/00381

A thesis Submitted in Partial Fulfilment of the Requirements for the Degree of Master of Arts in  
Counselling Psychology.

Institute of Youth Studies

Tangaza University

Nairobi

Sept 2024

## DECLARATION

I, Pauline Wambui Njeri, declare that the thesis is my original work and is not the product of a shared effort. It has not previously been presented to any institution of higher learning. All sources used herein have been duly cited and acknowledged in full.

I consent that the thesis may be available for reference and photocopying at the discretion of the University.

Signature .....

Pauline Wambui Njeri

Date .....

We certify that this thesis is original piece of Pauline Wambui Njeri work, and fulfils all requirements.

First Supervisor

Dr. Sr. Jacinta Ondeng

Signature.....

Date.....

Second Supervisor

Dr. Henry Tucholski

Signature.....

Date .....

## **DEDICATION**

This thesis is dedicated to my beloved mum and brother for their support and the faith they had in me during my MA study.

## ACKNOWLEDGEMENT

My gratitude goes to Dr. Sr. Jacinta Ondeng and Dr.Fr. Henry Tucholski, for their help and intellectual supports accorded to me during my thesis writing. Thank you so much for sharing your knowledge and wisdom anytime I called you for help.

My thanks to the Institute of Youth Studies master's programme for giving me an opportunity to realise my dreams and their guidance all through in my thesis writing without limit.

My sincere gratitude to my family members they have been a great pillar of encouragement and strengthen during my writing of this thesis. May God reward them generously?

To my fellow peers, words cannot express my gratitude; you were there to see I complete this thesis, thank you very much for your words of encouragement and editing my work, thank you.

To my two research assistants Innocent and Vinrian thank you very much for your support you accorded me during my data collection, coding, analysing and editing.

## ABSTRACT

WhatsApp is a platform where interactions take place among people, information is conveyed and socialization occurs with the help of the WhatsApp application. This study investigated the relationship between WhatsApp use and WhatsApp use anxiety among student in Mixed Day Secondary Schools in Kamenu ward Thika, Kenya. The study utilized three objectives which were; to examine what extent are WhatsApp use levels among students, to measure the levels of WhatsApp use anxiety among students, and to establish the relationship between WhatsApp use and WhatsApp use anxiety among students in Mixed Day Secondary Schools in Kamenu ward Thika, Kenya. The study was informed by Cognitive Behaviour Theory and Use and Gratification Theory. A descriptive correlation research design was employed. The sample size was 328 students aged 14-20 years. Data was collected using WhatsApp Use Scale and WhatsApp Use Anxiety Scale. The Statistical Packages for the Social Sciences version 26 was used to conduct the analysis. Data was analysed using descriptive (frequency and percentages) and inferential statistics (the Pearson's product moment). Findings revealed that 83.2% of the students scored high level of WhatsApp use, while 0.3 % in Mixed Day Secondary Schools in Kamenu Ward Thika Kenya, had low level of WhatsApp Usage. It was also found that 80.8% of students reported severe WhatsApp Use anxiety and 2.1% had moderate level of WhatsApp Use anxiety. The study established that there was a significant relationship between WhatsApp Use and WhatsApp Use Anxiety among students in mixed day secondary schools in Kamenu ward Thika, Kenya ( $r = .369^{**}$ ;  $P = .000, \leq 0.05$ ). The study recommended that the school administration in mixed day secondary schools to place stringent strategies to stop use of phones in schools and educate students on positive use of WhatsApp. There is need to engage psychological counselling to help curb the excessive use of WhatsApp on phones. This will facilitate more effective strategy in helping the students on the use of WhatsApp that may not be pathological.

## TABLE OF CONTENTS

<b>DECLARATION.....</b>	<b>i</b>
<b>DEDICATION .....</b>	<b>ii</b>
<b>ACKNOWLEDGEMENT .....</b>	<b>iii</b>
<b>ABSTRACT.....</b>	<b>iv</b>
<b>LIST OF TABLES .....</b>	<b>x</b>
<b>LIST OF FIGURES .....</b>	<b>xi</b>
<b>ABBREVIATIONS AND ACRONYMS .....</b>	<b>xii</b>
<b>OPERATONAL DEFINITION OF VARIABLES .....</b>	<b>xiii</b>
<b>CHAPTER ONE .....</b>	<b>1</b>
Introduction.....	1
Statement of the Problem.....	9
1.3 Purpose of the Study .....	10
Objectives of the Study.....	11
1.4.1 General Objective.....	11
1.4.2 Specific Objectives.....	11
Research Questions .....	11
Significance of the Study .....	12
1.7 Scope and Delimitations .....	13
1.8 Assumptions .....	14
Chapter Summary.....	14
<b>LITERATURE REVIEW .....</b>	<b>15</b>
2.1 Introduction .....	15
2.2 Conceptualization of the Study.....	15
2.2.1 WhatsApp Use .....	15

2.2.2 WhatsApp Use Anxiety .....	16
2.3 Theoretical Literature Review .....	18
2.3.1 Cognitive Behavioural Theory .....	19
2.3.2 Use and Gratification Theory .....	20
2.4 Empirical Literature Review .....	22
2.4.2 WhatsApp use anxiety levels among secondary school students .....	26
2.4.3 Relationship between WhatsApp Use and WhatsApp Use Anxiety among Secondary school students .....	30
2.5 Research Gap .....	35
2.6 Conceptual Framework .....	36
2.7 Chapter Summary .....	38
<b>CHAPTER THREE .....</b>	<b>40</b>
<b>METHODOLOGY .....</b>	<b>40</b>
3.1 Introduction .....	40
3.2 Research Design .....	40
3.3 Research Location .....	40
3.4 Target Population .....	41
3.5 Sampling Design .....	41
3.5.1 Sampling Frame .....	42
3.5.2 Sampling Technique .....	42
3.5.3 Sampling Size Determination .....	43
3.6 Research Instruments .....	44
3.6.1 Pre-testing of Instruments .....	45
3.6.2 Validity and Reliability .....	46
3.6.3 Scoring of Scales .....	47

3.7 Data Collection Procedures .....	47
3.8 Data Analysis .....	48
3.9 Ethical Considerations .....	49
3.10 Chapter summary .....	50
<b>CHAPTER FOUR.....</b>	<b>50</b>
<b>FINDINGS.....</b>	<b>50</b>
4. 1 Introduction .....	50
4.2 Response Rate .....	51
4.3 Reliability of WhatsApp Use Scale and WhatsApp Use Anxiety Scale.....	52
4.4 Demographic information of respondents.....	52
4.5 Levels of WhatsApp Use among Students in Mixed Day Secondary Schools in Kamenu ward Thika, Kenya. ....	54
4.6 Levels of WhatsApp Use Anxiety among Students in Mixed Day Secondary Schools in Kamenu ward Thika, Kenya. ....	57
4.7 Relationship between WhatsApp use and WhatsApp use anxiety among students .....	60
4.8 Limitations of the study .....	62
4.9 Chapter Summary .....	63
<b>CHAPTER FIVE.....</b>	<b>64</b>
<b>DISCUSSION.....</b>	<b>64</b>
5.1 Introduction .....	64
5.2 Participants’ Demographic Characteristics .....	64
5.3 WhatsApp use levels among Students in Mixed Day Secondary Schools in Kamenu ward Thika, Kenya.....	65
5.4 Levels of WhatsApp Use Anxiety among Students in Mixed Day Secondary Schools in Kamenu ward Thika, Kenya .....	66

5.5 Establishing the relationship between WhatsApp use and WhatsApp use anxiety among Students in Mixed Day Secondary Schools in Kamenu ward Thika, Kenya.....	67
5.6 Revisiting the Theoretical Framework.....	69
4. 7 Revisiting the Conceptual Framework .....	70
5.8 Chapter Summary .....	71
<b>CHAPTER SIX .....</b>	<b>72</b>
<b>SUMMARY, CONCLUSIONS AND RECOMMENDATIONS .....</b>	<b>72</b>
6.1 Introduction .....	72
6.2 Summary of findings .....	72
6. 3 Conclusion.....	73
6.4 Recommendations of the Study.....	74
6.5 Recommendations for future research .....	75
<b>REFERENCE.....</b>	<b>76</b>
<b>APPENDICES.....</b>	<b>92</b>
Appendix A.....	92
Tangaza University College Informed Consent .....	92
Appendix B .....	94
Questionnaire .....	94
Appendix C .....	97
Research Permit.....	97
Appendix D.....	98
Ethics Clearance .....	98
Appendix E .....	99
Research Permit.....	99
Appendix F:.....	100

Research Authorization..... 100

Appendix G ..... 101

Permission Email Letter Beck institute ..... 101

Appendix H ..... 102

Map of the study Site..... 102

Appendix I..... 103

Plagiarism Report ..... 103

## LIST OF TABLES

Table 1. Population of the study .....	42
Table 2. Proportional sampling in Kimuchu mixed day secondary school.....	43
Table 3 Response Rate.....	51
Table 4 Reliability of scales .....	52
Table 5. Demographic Characteristics.....	53
Table 6. Demographic Characteristics Access to WhatsApp and Time Spent.....	54
Table 7. Levels of WhatsApp Use among Students.....	55
Table 8. Distribution of Levels of WhatsApp Use among Demographics Features.....	56
Table 9. Levels of WhatsApp Use Anxiety .....	58
Table 10. Distribution of Levels of WhatsApp Use Anxiety among Demographics Features....	59
Table 11. Hypothesis testing on the relationship between WhatsApp use and WhatsApp Use Anxiety .....	62

## LIST OF FIGURES

Figure 1. Formation of Anxiety by Beck .....	20
Figure 2. Conceptual frame work .....	37
Figure 3. Relationship between WhatsApp Use and WhatsApp Use Anxiety, scattered plot.....	61
Figure 4. Relationship between WhatsApp Use and WhatsApp Use Anxiety .....	71

## **ABBREVIATIONS AND ACRONYMS**

**BAI:** Beck Anxiety Inventory

**CBT:** Cognitive Behaviour Theory

**FOMO:** Fear of Missing Out

**ICT:** Information Communication Technology

**PSU:** Problem Smartphone Use

**SM:** Social media

**SPSS:** Statistical Packages for Social Sciences

**TUC:** Tangaza University College

**UGT:** Use and Gratification theory

**WA:** WhatsApp messenger

**WHO:** World Health Organization

**WUAS:** WhatsApp Use Anxiety Scale

**WUB:** WhatsApp use behaviours

**WUS:** WhatsApp Usage Scale

**WU:** WhatsApp Use

## **OPERATONAL DEFINITION OF VARIABLES**

- WhatsApp:** It is a swift communication platform that can be accessed by either surfing the WhatsApp website or downloading the application from, Microsoft store, apple store or play store, and then installed in ones' smartphone, tablets, laptops or computers. The App enables the students to gather information, get entertained, learning in online class and increases their social world.
- WhatsApp Use:** WhatsApp use (WU) is the utilization of the WhatsApp platform in interaction amongst friends, schoolmates and family members using the App to share instant and real time messages, pictures, videos, symbols and audios clips. The reasons for use can range from information gathering and news updates, entertainments and socializing with peers
- Chatting:** This is when the students are exchanging real time messages with friends, family members and other social groups. They share real time messages through texting using short words, symbols, pictures and videos.
- Entertainment:** The students' share and exchange memes, short videos, stickers, emojis and audios as a way of refreshing and creating good moments. Features of the WA includes sharing of videos, audios of any kind which some could be having jokes and comic clips, educative videos which students use to relax and to increase pleasure in their life.
- Information gathering:** Students use the WA to get more ideas, new knowledge from the

people interacting with, video shared, documents shared and audio shared. The students through observing videos shared comments on the chats while using WA gain new insights and get informed.

**Socializing:**

It is when the students interact with other persons in different social chat groups through exchanging of messages. In those chat groups members are made to feel part of the group, acknowledged and sense of belonging is increased. To remain relevant in those groups, active participation is required, actively sharing and responding to chats shared in these social chat groups.

**Anxiety:**

It is an intense fear and worrying thoughts which symptoms has to have lasted over six months, and thwart one's life endeavours.

**WhatsApp use Anxiety:**

This is an intense fear and worrying experienced as a result of interacting on WhatsApp which interferes with one's daily activities. In this study, anxiety meant inability to stay calm, feeling agitate from the message received or sent and lack of concentration in class.

**Lack of concentration:**

This is when student who engage in WA lack focus, fail to perceive knowledge in class, have clogged mind with unnecessary thoughts that make them inattentiveness in class. In this study lack of concentration would mean students who excessively engage on WA and lack the ability to pay attention in class while learning is taking place.

**Feeling agitated:**

Students who frequently experiences nervousness due to comments on the chats and when they do not catch-up with the chat's responses. In

this study feeling agitated meant fear of rejection and bullying in the group chats.

**Inability to stay calm:** Students who interact a lot on WA due to time spend on it and they miss their school assignments they experience strong emotions which make them not able to be still or be at peace with themselves. In this study inability to stay calm meant expression of anger, rage and unnecessary worries.

**Excessive fear:** This is the negative feelings developed by students who excessively use WA through the interaction, their expectations of positive feedbacks from chat groups which they may not receive. The desire to be appreciated, messages read on time, miss (“blue ticks” on their sent messages may bring worry and may have increased negative feelings. In this study excessive fear meant inability to cope with negative feelings and negative responses.

**Student:** In this study students meant, a day school learner both male and female enrolled in a mixed day secondary school, form one to form four aged between 14-20 years in Kamenu ward.

# CHAPTER ONE

## INTRODUCTION

### **Introduction**

In this section, the researcher delves into the study's context, covering the problem statement, research purpose, objectives, and research questions. Additionally, I explored on the study's significance, scope, limitations, assumptions, and summarization of the chapter one

### **Background of the Study**

Formal educational institutions prepare students in acquiring knowledge and skills so as to contribute efficiently to self and national development (Bruno, 2020). A student or a learner is one who is enrolled in an educational institution with the expectation of application and utilization of the knowledge acquired during the learning process (Daiz et al., 2019). However, students may not only acquire knowledge in the formal setup, but learning happens in other avenues such as family, church, social interactions and most recently, it is noted that a lot of learning is done through social media platforms (King, Nelson, & Taylor, 2021). Possibly, students, through the use of WhatsApp (WA) attain knowledge at different domain like modelling, observing others what they do and imitate others whom they recognise as stars or celebrities.

Howe (2012) stated that in the social media platform, about 37% of the population in the world are known to have access to internet connection. Accesses to internet have increased to students' a new education platforms for learning. They are able acquire new knowledge and world news information outside the classroom since they can connect in many social platforms easily. There are many social media platforms namely WhatsApp, X, Facebook, Instagram and

YouTube (Howe, 2012). According to Harper, et al. (2014) the WhatsApp enables the students to gather information, get entertained, learn in online classes and increases their socializing world.

WhatsApp as a communication software, it was developed in the year 2009 by Brian Acton and Jan Koun to solve the problem of instance communication in the world. The App is an instant messaging application that transmits information electronically enhanced by internet connectivity very fast and to individual box and a large group of people at once. It is characterised by chatting, entertainments, information gathering and socializing. The App has an interface that enables human being to connect and communication easily with one another or in a group of people whether far or near. It is software that can be downloaded and installed in Smart phones, tablets, and computer (Thotha &Divatia, 2015; Purkayastha &Chanda, 2018). This software is one of the global media platforms where people interact through sharing of information informs of messages, videos, audios, pictures as well as documents made possible through internet connection therefore, creating a global village.

According to Woodcock et al. (2012), when students use WhatsApp it facilitates knowledge such that it helps them to have access to various knowledge documents and it also provides opportunities for distance learning. Bruno, (2020) reported that the social avenues such as WA may enrich students with knowledge and equip them to become great agents of transformation in society. However, there are many factors that may interfere with students' learning outcome while using WA. These factors may include interruptions in learning process during shorthand texting grammar (Froese et al., 2012), lack of concentration during lecturers because of continuous chatting while in class (Bohlander, &Tindell 2012).

The students who may excessively engage on WA may get disrupted, distracted, negative feelings as a result of consequence of bullying and negative comments from group chats. This

may lead to lack of focus on their learning hence contributing to downgrading in their education performance due to possible interference on their emotions.

Kuss and Griffiths (2011) amplify this by stating that students who overuse WA may slack in studies due to too much engaging in an online social interaction. The healthy face to face social relationship may be compromised and may interfere with students' academic work, hence increasing academic performance anxiety. Wang, et al. (2012) found that students who overuse WA exhibited higher levels of sadness, trait anxiety, and state anxiety, and are unhappy in life. As students exchange messages in several group chats their emotions may be influenced by happy or sad news received or sent. Although WA use has a lot of advantages among students, its negative effects are of concern among students and schools especially if there is no moderation and skills on how to use the App. From these studies, there are evidence concerns of some anxiety symptoms as describe such as lack of concentration in class, interference on emotions which may create agitation, fear of keeping up in group chats, fear of missing out, and students unable to be calm due to overwhelming unlimited texts and desire to respond to them all. Therefore, there is a need to explore the use of WA among the students in mixed day secondary school in Kamenu ward, Thika Kenya.

Brown and Barlow (2014) submitted that WhatsApp Use Anxiety (WUA) is an intense fear and worrying experience while interacting on WA and this interferes with one's daily activities. Due to heavy use and interactions in WA students' emotions may be affected by the communications taking place, the bad and good news which can range from gladness, sadness, disgust shock and rage (Qounsar &Parveen, 2018). These emotions if not well managed may result to lack of concentration in class, increased feeling of agitation, inability to stay calm in class and excessive fear of missing out in the chat groups. Among the adolescents in secondary schools, high levels of anxiety are reported to interfere with students' daily activities whereby

affecting good academic performance and students' discipline (Parveen & Qounsar, 2018). Anxiety disorder is reported by World Health Organisation to be one of the mental disorders that interferes with human activities, and therefore needs early intervention (WHO, 2017). Students are said to be unable to stay calm, repeated protests and indiscipline in schools are frequently reported by media houses in most of their news headlines (DSM-5, symptom of anxiety). Therefore, this study is timely so as to check the actual anxiety level among students who may excessively use WA in order to offer early preventions and interventions in case anxiety levels are high.

In Finland, a study conducted by Ratten Buryetal, (2010) on “habits make smart phone use more pervasive” among 235 youths. The study's findings revealed that when young people fail to respond quickly to messages received, they tend to violate the sender's expectations, which can lead to relationship problems. This pressure could explain why people, particularly teens (53.7%), often check their phones for fresh messages and updates. This study found that some degrees of pressure emanates within an individual when interacting on the social group forums. This therefore pointed out that anxiety that comes from the use of WA among teenagers was a matter of concern. Hence, this study hopes to find out students WhatsApp use anxiety levels whether is in anyway associated to interaction in the WA use.

A systematic review study was carried out by Keles (2020) in the US, examining the impact of social media on depression, anxiety, and psychological distress in adolescents. The findings revealed that social media anxiety and emotional distress correlated with the use of WA (Yan et al., 2017). High school students 58% and 40% of them spent two hour per day. On the sleeping patterns, it was reported that 58% of the students sleep less than eight hours and 72.1% recorded low self-esteem. Among the students they recorded low anxieties of 4.23%. Social media anxiety and lack of focus was reported to disrupt the normal life of students hence

interfering with their academic performance and being unproductive in schools' activities (Hooda & Saini, 2017).

Similarly in India, a study was conducted by Sharma and Shukla (2016) on the impact of social messenger especially WA on youth: sociological study. It was made known (Sharma & Shukla, 2016) that the use of WA among students in secondary schools led to lack of concentration in class. It also indicated that majority (80%) who used WA to chat frequently were found to have some symptoms of anxiety. In order to keep up with constant communication either by replying or sending messages, students reported to be sleeping late at night and neglect their assignments. Sharma and Shukla (2016) pointed a need to understand the anxiety levels of students at early stage therefore; this study is timely to fill in this knowledge gap.

In Cameroon, Bruno and Lawyer (2020) did a study among 180 students, on the impact of WhatsApp use on kids' social-emotional development and performance in school. Results from the study showed that the use of WA was significantly affecting students' social-emotional developments. Also, 82.22% of the students were on WhatsApp video use, 17.88% disagree to be affected on social-emotional development. With regards to online chatting, 79.43% agreed to be affected on social-emotional development, while 21.57% disagree. The study concluded that use of WA significantly affected student's social-emotional developments. This further pointed out that social-emotional could be associated with excessive fears of missing out (FOMO) in chat and catching up with the group interactions, and this may likely cause students to be restless in class and inattentive. The assumption of feeling of being left out on WA while offline could get students agitated. This is due to the desire to stay connected (Bruno & Lawyer, 2020).

In Kenya, WhatsApp according to Mwangi (2017) is an app installed and used in a smart phone, computer, tablet, and laptop. This platform is a most popular instant text-based messenger, with over two billion users in 180 countries. It is the most rated social medium

platform which is used by majority of youngsters to connect to the digital world. Statista (2021) reported that over 100 billion messages are sent per day, and on daily basis, an average of 38 minutes is spent per person on WA. The App is simple to operate in a smart phone and has the following features, group chats, video chats, images sharing, audio, emojis, stickers, symbols, and has the capacity of encoding and decoding information (Ansiem, Preetha, & Pramod, 2018; Bake, 2017; Kibet & Ward, 2018 & Pramod, 2016).

Kariuki (2010) reported that the availability of WhatsApp use (WU) has contributed the socialization among the youths so easily as well as accessing academic materials. He further said there was high pathological WU among the students due to free and unlimited access to the internet (Kariuki, 2010). These giving students more free air to chat, gathering news, entertaining time and socializing with peers. Ogachi, (2011) conducted a study on the connection between pathological internet use and depression among 400 Kenyan university students. According to the report, 1.3% of the respondents had severe pathological WU, compared to 61.3%) who had mild pathological WU. Among the responders, the frequency of pathological WA usage was 16.8%. The finding in this study shows that in general internet use results to severe pathological anxiety. Therefore, this current study wants to investigate the connection between WhatsApp use levels and WhatsApp use anxiety levels among students in mixed day secondary schools in Kamenu ward, Thika west sub-County, Kenya.

Bruno (2020) argued that students who use WA excessively like chatting with friends, sharing videos, gaming, listening to audio and sharing pictures for long hours were reported to be academically affected due to rising cases of anxiety. It was also shown that excessive use of WhatsApp interfered with students' sleeping patterns, distractions during study time, and anti-social behaviours were noticed among the students. The students who score high in WhatsApp

Use Behaviour (WUB) were non-productive academically, and were addicted to WhatsApp use consequent of entertainment emanating from the use of WA (Otieno & Akwala, 2018).

In the UK, Statista (2021) reported that 80% of youngsters between the ages of 17 and 24 have embraced WU. This indicates that WA messenger is popular and highly used among youngsters. It was also revealed that WhatsApp use enhances relationships and it creates a sense of belonging among the teenagers, social bonding strengthened relationships among friends and family members because the users are able to receive and send real time information's, pictures video and chats frequently (Harper, et al. 2014). This is an implication that young individuals are the majority of the users of WA for socializing and expanding their online social world. In human development, adolescents' stage is a time when adolescents seek self- identity, self- exploration and experimentation. They seek for association and a place to belong within their social environment. This WA online social environment may help the youngsters to grow into a healthy personality through meaningful online engagements with others (Hinduja & Patchin, 2013). Chatting is an important aspect of human relationship, through which teenagers desire to participate in this human need of social interaction. However, extreme chatting among teenagers may distract, interfere with concentration, and this could decrease their level of attention.

Madu and Uwaebuka (2017) conducted a study in Nigeria to assess the influence of 244 students' use of WhatsApp on information and libraries. 94.32% of students are reported to utilize WhatsApp. Additionally, it stated that 23% of students who used WA reported that it had a beneficial effect on their academic performance, while 77% of students said that it had a negative effect. Additional statistics revealed that 95% of students use WA to stay in touch with friends and family and course mates rather than for profitable academic ventures. Similar findings by Jude et al. 2019; Johnson, 2014 reported that excessive use of WA led to addictive

use among students, and this resulted to learning distraction. Based on the various findings, WU is seen to be having two possible implications on teenagers, which are positive and negative effects.

Mtega (2021) carried out research in Tanzania on the use of WhatsApp Messenger to raise student engagement in instruction and learning: An example involving Sokoini University Agriculture undergraduate students involving 127 students ages between 15 – 30years. Results showed that the WU enhanced teaching and learning among students and instructors, it increased accessibility of learning materials, improved learning culture, helped learners to contribute in educational group discussions easily. The results also showed that 89.8% of students reported they use the WA on a daily basis, 4.7% of the students chat 1-3 times a week, and 5.5% chat 1-4 times monthly. Thus, 70.8% of students spend on WA more than one hour, 15% of them spend 30 to one hour, while 14.0% of the students spend 30 minutes only. Based on this study, the implication of high rates of chatting on WA is evident that it interrupts students' academic engagement, which may facilitate possible mental distraction.

In Kenya, a study conducted by Mwangi (2017) among 167 youths, on WhatsApp: the modern-day delusion of friendship among young adults in Kenya. Statistics revealed that WA was a favourable platform among the students. Basically, 76% of students use WA to socialize with friends, 66% of students used WA information gathering. It was also shown that 98.5% participants used WA all the time in a day, 18.3% used WA more than 40 times in a day, 96.8% used WA two to ten times in a day, while 10% reported that WU was addictive in nature. The study further investigated to understand whether students felt bothered when the messages sent or received were not responded to, 76.04% of the students claimed that they would be bothered, while 1.6% indicated that they would not be bothered. In addition, 71.2% reported to feel out of touch when offline, while 21.5% said they do not feel out of touch. Regarding shutting down of

WA, 63.4% of the respondents indicated they would be sad if WA was shut down, 22.1% participants reported they would not be sad, while 14.3% said they were not sure of their feelings. In this regard, Mwangi (2017) concluded that Kenyan students highly depend on WA use and therefore moderation measure was necessary when they are engaging on WA.

In Thika, Waweru (2018) did a study among 245 students in the Thika municipality, Kiambu, on the impact of social media on students' academic performance in post-secondary educational institutions County, Kenya. The findings indicated that 90.06% of students use WhatsApp. Some negative effects induced to them of WhatsApp use were reported. The focus of this study was on how social media usage affects students' academic achievement in tertiary institutions located in Thika municipality, Kiambu County, Kenya. Additionally, rather than focusing solely on secondary school pupils, the study also included students at postsecondary educational institutions. There was no investigation on the relationship WA use and WhatsApp use anxiety among secondary school students in Kamenu ward. Therefore, the present study investigates the relationship between WhatsApp use and WhatsApp use anxiety among students in mixed day secondary schools at Kamenu Ward, Thika west sub-county, Kenya

### **Statement of the Problem**

WhatsApp is a social digital platform where students easily interact, exchange ideas, share real time information, catch up with one another, and get academic information in an easy and efficient ways (Bruno, 2020). However, uncontrolled use of this App may create WhatsApp use behaviour such as chatting in class, checking on messages during class time, watching videos, and fear of missing out (FOMO) among friends who are online. The fears of being out of communication usually generate anxiety among some students, and this was reported to interfere with student's life as well as academic activities (Waweru, 2018).

In mixed day secondary school in Kamenu ward, there is a worrying concern of WU among students, cases of mobile phones usage in class among students while the a class is ongoing has been reported in multiple occasions. It has been noted that majority of the mixed day secondary school students in Thika town were seen engaging on their mobile phones on their way from home and on their way to school either trying to create messages or responding to their friends' chats. Reports from the schools' counsellors (2019) pointed out that "there have been growing concerns of small groupings among students surrounding one phone in school compound, drop in academic performance, cases of stealing of phones, late submission of assignments, students fight over phones, anger outbursts and reports of cyber bullying. These are some of the fundamental concerns for the researcher that pointed out the need for this research. There are concerns that could result to mental health issues among students if not attended to. Affirming these concerns, Wu Li and Chang (2016) reported that 97.4 % of secondary school students who use WA are affected on their attitude, behaviour and had increase rate of anxiety. Therefore, with these various concerns observed from secondary schools' students (Wu Li & Chang, 2016) this study investigated the association between WhatsApp use and WhatsApp use anxiety among students in mixed-day secondary schools in Kamenu Ward, Thika, Kenya. The findings of this study will be very usefully in understanding the impact levels and relationships WhatsApp use and WhatsApp use anxiety among students thereby giving room for intervention of the problem at a very early stage with specific methods tailored towards the student's social and academic growth, thereby giving a ripple effect in the society.

### **1.3 Purpose of the Study**

The purpose of the study was to establish relationship between the students who use WhatsApp and their WhatsApp use anxiety levels in mixed day secondary schools in Kamenu Ward, Thika west sub-county, Kenya.

## **Objectives of the Study**

To complete the overall purpose of the study three specific objectives were used to investigate the relationship between WhatsApp use and WhatsApp use anxiety among students in mixed day secondary schools in Kamenu Ward Thika west sub-county, Kenya.

### **1.4.1 General Objective**

The general objective of the study was to examine the relationship between WhatsApp use and WhatsApp use anxiety and their levels among students in mixed day secondary schools in Kamenu Ward Thika west sub-county, Kenya.

### **1.4.2 Specific Objectives**

The specific objectives of the study were to:

1. Examine to what extent is WhatsApp use levels among Students in Mixed Day Secondary Schools in Kamenu ward Thika, Kenya,
2. Measure the levels of WhatsApp use anxiety of among Students in Mixed Day Secondary Schools in Kamenu ward Thika, Kenya.
3. Establish the relationship between WhatsApp use and WhatsApp use anxiety among Students in Mixed Day Secondary Schools in Kamenu ward Thika, Kenya

## **Research Questions**

1. What are the extents of WhatsApp use levels among Students in Mixed Day Secondary Schools in Kamenu ward Thika, Kenya?
2. What are the levels of WhatsApp use anxiety among students in mixed day secondary schools in Kamenu ward Thika, Kenya?
3. What is the relationship between WhatsApp use and WhatsApp use anxiety among students in mixed day secondary schools in Kamenu ward Thika, Kenya?

## **Significance of the Study**

**Students:** This study may generate necessary information on WU levels and WUA levels that will be useful to learners on decent use of WhatsApp for educational purposes. The knowledge could help reduce the level of anxiety and other mental health problems among learners.

**Teachers:** This study could generate necessary information that may be useful to teachers on good use of WhatsApp platform for the purposes of online academic learning and early symptoms of anxiety to support and guide students accordingly.

**The learning Institutions:** The Kenya government through the ministry of Education will gain meaningful insights which would help in policy making on WhatsApp use among students in secondary schools. They will understand early strange behaviour of WhatsApp use anxiety among the mixed day secondary school students, to offer early intervention. The App can be incorporated as one of the learning platforms to enhance student's performance and knowledge growth thus reduce student's anxiety.

**The counselling psychology fraternity:** They will gain knowledge that will help them to manage students struggling with WhatsApp use anxiety from other forms of anxiety. They will be in better understanding of WhatsApp use anxiety levels among mixed day secondary school students in Kamenu ward Thika.

**The counselling psychologist scholars:** They will benefit with the new technology use knowledge of 21<sup>st</sup> century that will emanate from the findings of study and new research areas proposed.

**Parents:** they will play key role in ensuring the students are not buried in the mobile phone, this access time regulation by the parents will be very significant in curbing the WhatsApp use anxiety.

## **1.7 Scope and Delimitations**

Scope discussed the parameters under which the study will take place (Simon & Goes, 2013). WhatsApp software is developed in such a way that it is cheaper to run, very easy to access, real time feedback can be available as the users can tell when the corresponding operator is available at the other end of communication, these reasons makes it an ideal communication platform amongst the students in secondary schools. Anxiety forms the baseline on many mental disorders, when detected earlier it can be easy to manage and cheaper to treat, these reasons makes it ideal case examining its level in a youthful population. The study was conducted among students in public mixed day secondary schools, in Thika West Sub-County, Kamenu ward, Kenya. The day scholars were more likely to have easy access of mobile phones as opposed to the boarders since at home the day scholar may access their guardians or family phone with no trouble. Another reason day scholars will give sufficient data since they have access to phones frequently unlike boarders. Only the data with WhatsApp access was included in the research analysis. This study therefore, attempted to understand whether there is a relationship between WhatsApp use and WhatsApp use anxiety among students in mixed day secondary schools in Kamenu ward, Thika west sub-county, Kenya.

Delimitation is the declarations from the researcher on what the study will cover and what it will not cover in terms of study objectives and methodology employed (Simon &Goes, 2013). This study was specifically limited to the students in mixed day secondary schools at Kamenu ward Thika west sub-county, Kenya. The study did not cover academic performance among WA users. It investigated the relationship between WhatsApp use and WhatsApp anxiety among students in mixed day secondary schools in Kamenu ward, Thika west sub-county, Kenya

## **1.8 Assumptions**

Leedy and Ormrod (2010) describe assumption as a basic issue that if not included the research problems could not happen. Therefore, this study will be based on the following specific assumptions:

1. Learners within mixed day secondary schools in Kamenu ward, Thika Kenya has access to a mobile phone and therefore have an access to WhatsApp.
2. Respondents could freely participate in the study, providing real replies on WhatsApp use and WhatsApp use anxiety among students in mixed day secondary schools in Kamenu Ward, Thika Kenya.
3. Those students who use WhatsApp may be able to identify their symptoms of WhatsApp use anxiety and genuinely tick them from the questionnaire.

## **Chapter Summary**

This chapter provided background information on WhatsApp use and WhatsApp use anxiety. It also included the problem description, research objectives, and significance of the study, scope, constraints, and study assumptions. The following chapter focuses on literature reviews.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

This chapter discusses two variables: WhatsApp use and WhatsApp use anxiety. It discusses theories appropriate for the investigation, as well as an empirical literature assessment that is consistent with the study's aims. It also identifies research gaps and presents the conceptual framework. The chapter concludes with a summary.

#### **2.2 Conceptualization of the study variables**

In this section, the researcher defines the study variables: WhatsApp use and WhatsApp use anxiety.

##### **2.2.1 WhatsApp Use**

WhatsApp is a real time communication platform, it is simple, reliable and it is an effective medium of flow of ideas and as such as made humans to reach out to one another in different parts of the world (Irfan & Dhimmer, 2018). Bruno (2022) opines that WA is one of the widely used social media platform used by students because of its convenience, unlimited texts messages, instant messages, real time messages and easy to use. The students who chat on WA has possible way of meeting their need for socializing and a place to belong, beside that they may gather information from the documents shared. Students patronises WA so as to get entertained through the funny videos, audios and photos they share, and they enjoy unlimited flow of educative materials, information documents which enriches their knowledge from several chat groups. The chat groups may range from class chat group, subject chat groups, church youth chat groups and sporting chat groups (Bruno, 2022).

Irfan and Dhimmer, (2018) stated that with WU humans can interact using various features in the App and one can reach out to all contact persons on their phone individually, The app enables people to encode and decode messages (chatting) in any parts of the world and tell when they messages are read or not. This innovation has further made communication reachable, secure and affordable for the users. However, negative impacts have been associated with WU such as addictive usage (Sultan, 2014) and higher cases of anxiety were reported among students (Han, & Keskin, 2016). WU interactions are reported to be an avenue where the users exchange their feeling, experiences and ideas, in so doing they get used to each other then end up bonding.

Bere (2013) also affirmed that WA is a good tool of socializing and learning among students who forms class groups' chats. The teachers are able to reach out to individual by a drop of a message in the class chat group. During students' interactions knowledge and understanding is gathered among the chat group members therefore enhancing their increase of new knowledge since the environment is conducive as Vygotsky (1978) theory supports of social activities boosts knowledge. According Fernández-Robin, Yáñez and McCoy (2019) WhatsApp use is largely motivated by pleasure, entertainment, and leisure. In their study 72.5% of the cluster reported to use WhatsApp for leisure. The WU is demonstrated by these studies to be a platform that is mostly used for information gathering, socializing, chatting and entertainment for it gives pleasure to the users.

### **2.2.2 WhatsApp Use Anxiety**

Anxiety is a psychological term which is commonly used by people when they are confronted by challenging situations in life. The Diagnostic Statistical Manual edition 5(DSM-5) regards anxiety as excessive worry, soreness, impaired concentration, irritability, fatigue,

restlessness, difficulty sleeping, muscle tensions and mind going blank. Anxiety disorder can be established when symptoms persist for at least six months (Nyuthe& Stein, 2015).

Humans exhibit certain levels of fear and worries in different circumstances in life (Kumar, 2018). The term “WhatsApp use anxiety” is defined as an intense fear and worrying experienced while interacting on WhatsApp which interferes with one’s daily activities, and it comes with several characteristics such as lack of concentration, feeling agitated and irritable, inability to stay calm, High fear of missing out (FOMO), fear of being offline (FOBO), or fear of being ignored (FBI), mental stress of lack of data bundles and credits, low self-esteem as a result of being bullied (Azab, Jbireal& Kumar 2019). Kumar (2018) alluded that the mental health stress emanating from the use of WA has become major concern. For example, among the youths, as soon as they rise from the sleep in the morning, they first have glance over WA. If they realize that there are no messages from friends or loved ones, there is a possibility of them getting upset. The consequence is that their mind is filled with questions, doubts and negativity of oneself leading to destructive feelings of low self-esteem.

One of the proponents of anxiety, Freud (Shill, 2005; Ardiyansyah, 2019) claimed that anxiety is a conflict reaction between the id aggressiveness and the ego impulsiveness. According to Freud (Ardiyansyah, 2019), the id and the ego are seen as defences mechanisms when these conflicts arise for harmony and peace in human being’s mind. The id is the unconscious fear within a human person while the ego focuses on the reality that confronts a person. In an encounter of events, the human mind seeks rational ways of absconding any possible danger for self-preservation.

Taylor (2015) also argued that humans, almost in daily life do experience anxiety, and this generate mental disturbance due to the situations or circumstances they find themselves. In

the educational arena, anxiety may be experienced among students because of involvement in WhatsApp use, new environment, meeting new friends, new teachers, and possible change of educational policies. These may be termed as signal anxiety, and this alerts either positive or negative responses. WhatsApp use anxiety becomes a disorder when the symptoms become very disruptive and as well impair an individual's normal state of mood thus affecting normal daily functions of an individual.

Technically, Kariuki and Stein (2015) stated various enablers of anxiety which are stress, physical conditions, genetic and environmental and social factors. The physical human conditions that are known to cause anxiety, for example, a person with medical conditions is found with increased anxiety, students who are using WA chats, video calls, and sharing images may be bothered if their messages shared has not been read, or persuasive interactions this may cause disturbed and create negative feelings (Munir, et al., 2019). The DSM-5 has highlighted several types of anxiety such as generalized anxiety disorder, panic disorder, compulsive obsessive disorder, social phobia and posttraumatic stress disorder (Nyuthe & Stein, 2015). Therefore, this study will focus on WhatsApp use anxiety among students in mixed day secondary schools in Kamenu Ward, Thika Kenya.

### **2.3 Theoretical Literature Review**

This study was guided by two theories: Cognitive Behavioural Theory (CBT) and Use and Gratification Theory (UGT). Cognitive behavioural theory helped the researcher to understand the anxiety which may be developed by students who interact with WhatsApp. The Use and Gratification Theory helped the researcher to understand the reason for use of WA and how chat platform is used.

### **2.3.1 Cognitive Behavioural Theory**

Cognitive Behavioural Theory was developed by Aaron Beck, an American Psychologist in the 1960s through clinical research on psychiatric therapeutic work with depressed clients. Cognitive Behavioural Theory can be defined as the way a human person perceive an event and interpret that event according to their belief about the event in which the outcome may generate negative or positive thoughts, feelings, emotions and actions (Beck, Finkel, & Beck, 2020). According to this theory, a person's anxiety is caused by a conflict of thoughts and feelings. Anxiety is an emotional state marked by high levels of tension and a never-ending stream of worried thoughts (Beck, Finkel, & Beck, 2020). These thoughts can lead to physical changes in the body, high blood pressure, and other medical problems. For example, students who are bullied by a significant other through WhatsApp messenger could generate distorted beliefs, negative automatic thoughts due to the negative words of the significant other. This could generate possible anxiety that may interfere with their academic performance in school. Also, negative comments from friends through a chat or photos posted on one's status, profile picture and in different group chats may build up to anxiety in a student (Blabst & Diefenbach, 2017).

Additionally, Beck (1979) strongly believed that peoples' emotions and behaviours are influenced by the perceptions one has over the event or situation taking place. This means that the individual interpretation of an event affects their emotions, behaviour and physiological responses (Beck, & Fleming, 2021). For example, a student's interpretation to late response messages or no response to one's messages could either be positively or negatively perceived by a student. If one resorts to negative perception of the delayed or no response message from a WhatsApp chat, anxiety may be built up. In addition, a student's self-esteem may be affected when confronted with an issue of bully and negative opinion of oneself and from others emanating from chat on WA. Beck (1979) claimed that anxiety can also be formed when a

human person has a bad opinion of the self; the graphic in Figure 1 depicts a dismal view of the future and a bad perception of the global community.

**Figure 1**



*Illustrations of the sequence of negative mental process that leads to formation of anxiety  
Adapted from (Beck, 1960s and 1970s).*

This reality can interfere with students' life styles and emotional behaviours during WA interactions. Under these conditions, dysfunctional behaviours and the possibility of negative automatic statements could be noticed knowingly or unknowingly among students and hence may affect students positively or negatively and this may lead the students to view themselves as bad (negative self), the become pessimistic (negative future), and they see school work as bad and as a burden (negative world). One question that occupies the researcher's mind is whether these negativities in anyway may generate anxiety from the use of WA that could distract and disrupt students' concentration, calmness and affect their mental health.

### **2.3.2 Use and Gratification Theory**

Use and gratification theory (UGT) is a communication theory established by Katz, Blumler and Gurevitch (1974). The theory focuses on understanding what mass communication does to the audience and why humans choose the kind of mass media they use. Katz, Gurevitch and Haas (1973) further affirmed that people have both social and psychological needs which are

met by the kind of mass media they use. The reason people subscribe to various social media platforms include wasting time, entertainments, surveillance and communication.

There are numerous reasons why students in secondary school utilize social media sites such as WhatsApp, Facebook, and Instagram. The reasons included: relationship maintenance, passing the time, virtual community, entertainment, coolness, and friendship (Sheldon, 2008). Blumber, Kats, and Li (1974; 2005) argued that these reasons are viewed as requirements to be addressed in order to better understand them. He characterized these demands as cognitive, emotive, personal integrated, social integrated, stress relief, and medium appeal needs, among others.

Kats, and Li (2005) together with Sheldon,(2008) alludes that students in secondary school may strive to meet their needs, for example, the need to belong, the need to participate in social forum and the need to relate with other through WhatsApp platform. In the process of striving to satisfy their needs by chatting with others through the WhatsApp platform they may get bullied, overwhelmed by the numbers messages to respond to and fear of missing out in chatting groups may generate anxiety in them. Duration time on WA engagement with others through chatting could interfere with their sleeps, thus skipping assignments and this could lead to poor academic performance. According to Musa, Azmi, and Ismail (2015), students may get distracted while studying and simultaneously chatting with several chat groups. Therefore, inadequate grasp of reading may pave way for examination anxiety hence the consequence of uncontrolled need. The reason behind the use of this theory is to help the researcher understand whether the students are using WA for information gathering, personal identity, entertainment, integration in the social community, or escaping from responsibility, and therefore waste a lot of time on chat. This theory will contribute by helping the researcher to understand the reason

behind the use of WA among students. Hence the researcher finds the theory appropriate for the study since WA is one of the social media platforms.

There have been cases reported by school counsellor where students were seen crowding on a smart phone on their way home, growing indiscipline in school, using of phones while in class and lack of concentration during classes (Jane, 2021). Therefore, this study hopes to find out whether students are frequently engaged on WhatsApp platform, whether this has any relationship with their WhatsApp use anxiety caused by bothering conversations and negative response or no responses in their chatting groups.

## **2.4 Empirical Literature Review**

Nakano and Muniz (2018) claimed that empirical literature review is the presentation of previous researches done by other researchers that are similar to an individual's topic and the findings could be replicated using the same methodologies of the previous studies. In this section, the researcher examines selected literature relevant to the study's objectives.

### **2.4.1 WhatsApp use levels among secondary school students**

WhatsApp is an instantaneous messaging application that connects through internet. Its features have met the needs of the audience and for that reason it is said to be popular among young people (Tzuk, 2013). Notably, 37 percent of the world's population has good connection of internet and therefore, are able to join on social platforms (Howe, 2012). These days it seems hard to escape the presence of technology and majority of people are connected to social media for social and psychological needs (Whiting & Williams, 2018).

WhatsApp is one of the efficient and effect apps in social media platform and mostly used on Smartphone's, tablets, iPhone and computers (Cohavi, 2013). It has several features such as real time instant text messaging, chatting groups, attaching images, taking real time photos,

and audio files, video files downloading documents and linking to web addresses. Every day, 31 billion messages are sent, demonstrating the messenger's popularity and widespread use (Tzuk, 2013). For example, in an educational setting, WhatsApp groups are used for four key purposes: interacting with students, fostering a social atmosphere, stimulating discourse, sharing among students, and functioning as a learning platform.

Whiting and Williams (2018) maintained that there were many reasons people make use of social media platform like WA messenger. These reasons are communication; information sharing, friendship chatting, and sense of belong. These needs were categorized in two major classes “psychological and social needs”. Furthermore, these needs are broken down into several needs which are; social interactions, information seeking, passing time, entertainments, relaxations, communicatory utility and convenience utility (Whiting & Williams, 2018).

Globally, in India, Anitha Lakshimi, and Meenakshi (2019) conducted research on “the impact of use of WhatsApp among students in Vaishnav College of women Chrompet Chennai”, between ages 17 to 23. The study indicated that 52% were ages 17 to 20years, 37% were 20 to 23 years and 11% above 23 years. Majority of them 208 reported to use WhatsApp on their phones while 22 of them used WhatsApp on their tablets. Based on the time spent on WhatsApp, 186 students reported they spend more than four hours on WhatsApp, 30 of them spend two to four hours while 14 of them spend less than two hours on WhatsApp. In the same study the students expressed their purpose of using WhatsApp as entertainments, staying in touch with family members, connecting to friends, sharing information and seeking new knowledge as ranking from one to five respectively. For the ranking of most satisfying features of WhatsApp, the instant message was number one followed by photo sending, status update feature, voice call, group creation feature, and finally the audio message feature. These clearly indicated that chatting was leading with 81.9%, photo sharing with 76.4%, status up dating at 75.4%,

information sharing with 67.8% and calling at 66.1%. From this study Chatting is reported to be the leading feature among others. Similarly in India, Sharm and Shukla (2016) reported that 80% of students between the ages 17 and 22 regularly access WhatsApp, 14.5% use WhatsApp on limited time and 5.5% quietly often use it. They also noted that academic writing and spelling were also affected greatly since the students frequently used slangs. In same study it further revealed that 65% were affected academically, 23% were not affected while 12% did not know if they were affected. The finding here informs us that WA is used frequently by students and has negative relationship on their school life and health life.

In African context, a study was carried out by Anireh et al. (2020) in Nigeria among 100 college students in Port Harcourt in order to find out the effectiveness of WA use among the students. Reporting on average mean and standard deviation, results showed that 2.5 mean and below agreed that WA facilitate learning and encouraged learners in their research collaboration, 2.49 and below disagreed that WA is a learning facility which can encourage research collaboration. Therefore, WA is a beneficial tool for learners. The effectiveness of the use of WA was revealed that 2.5 mean agreed that it is an effective tool, while 2.49 and below disagreed that it is an ineffective tool. Hence majority the students agreed that WA is an innovative tool for students (Anireh, et al. 2020).

In Uganda, Luyima, Walibwa, and Sentongo (2021) conducted a study among 240 private secondary schools to assess the impact of WA-supported instructional resources in out-of-classroom teaching learning procedures on students' attitudes about chemistry. Results from experimental school B (M=1.89) showed a better attitude than control school Z (M=2.38), confirming that the usage of WhatsApp-supported educational resources contributed to an improvement in students' attitudes toward chemistry at experimental school B. Consequently, there was no statistically significant difference in students' opinions toward chemistry between

the two schools. More findings showed that apps like WhatsApp allowed students to communicate with study materials as well as their lecturers and peers, thus helping them to learn more effectively. A similar study was conducted among universities students in Uganda, to investigate integration of social media in students' learning as well as teaching processes (Mirembe & Lubega, 2019). The outcome of the study showed that 94.8% of students uses WhatsApp platform, 86.5% make use of Facebook, 82.1 % use YouTube, 53.8% patronize twitter, 39.8% use Instagram, while 9.2% make use of snap chat. The study affirmed that 91.1% of students use social media for educational purposes. This clearly indicates that students use and engage with WA during their studies.

In Kenya, WhatsApp is one of the social medium platforms that facilitates social interaction is commonly used among the secondary school students. Nyongesa, Kiprop, and Chumba (2019) carried a study on how social media affects student discipline in Kenyan secondary schools. This study was done among 600 students from 40 secondary schools. It was found that the use of WA among secondary school students was quite popular. Also, the research indicated that students spend lots of time interacting with friends or strangers online. This has made students anxious and addictive to WA (Chumba, 2019). Furthermore, the influence of social media on students can be huge. Nyongesa et.al (2019) established that through the use of WhatsApp, students send and receive pornographic contents. According their claims, 82% of student consented that WhatsApp use expose them to pornographic contents, 4% of participants were undecided, and 14% disagreed. It was also reported that WhatsApp use caused distraction in learning process and 72% of respondents admitted that WhatsApp use distract their learning process, 22% disagreed, while 6% of the students had no idea. Students' memory is affected the more they get absorb in social media. Most of the students (64%) admitted that WhatsApp use does interfere with their memory while studying, 31% disagreed, while 5% of respondents were

undecided. These studies have shown that students in secondary schools heavily use WA and no levels of use indicated and therefore the researcher investigated the extent of WhatsApp use levels among students in mixed day secondary schools in Kamenu Ward, Thika West Sub-County, Kenya.

#### **2.4.2 WhatsApp use anxiety levels among secondary school students**

Anxiety in general may be seen as an intense fear and worrying thoughts which symptoms has to have lasted over six months, and thwart one's life endeavours. Also, it is an emotional condition that develops in the face of impending risk and manifests in the anticipations of negative outcomes. Some noticeable characters highlighted are worries, helplessness, self-doubt, a lack of sufficient power in the face of external stimuli, and an exaggeration of their potency and strengths (Nag, et al. 2019). Beck (1974) has classified anxiety in four levels. These levels are low, moderate, high and severe. When one scores severe anxiety it is termed as pathological and quick action is required for interventions. Anxiety may come from different situations in life such as travelling, being in a strange land, the process of giving birth, and waiting for interview and examination results (Yalom, 2019). In the education institution, and specifically in the secondary, studies show that the secondary school students make use of WhatsApp while in school, and hence experience some WhatsApp use anxiety (Bruno, 2020).

According to Clement and Ravi (2018), WhatsApp use anxiety can be defined as an intense fear and worrying experienced while interacting on WhatsApp and this interferes with one's daily activities, and as well creates a Borderline Personality Disorder (BPD) which is characterized by feeling of emptiness, getting bored easily while with others, unstable self-image and increase of the proneness for the use of WhatsApp. Kumaran (2018) affirmed the presence of WhatsApp use anxiety among secondary school students and noted that strange behaviours are

reported among students who use WhatsApp, and these behaviours included being upset in school, lacking class concentration, distracted when their WhatsApp messages are not responded to. Rideout (2016) made it known that adolescent students around the world dominate social media platforms for example, WU noting that they spending a significant amount of time on the platform and therefore causing students to skip classes, and other psychological issues like stress, anxiety, depression and addictions.

Wolniewicz, Tihamiyu, Weeks, and Elhai (2018) in their study in America on Problematic smartphone use (PSU) and relations with negative effect, fear of missing out, and fear of negative and positive evaluation, a total of 299 students were examined. The male were 42% and female were 57% with an average of 20years. The findings indicated that the problems of smartphone use (PSU) on fear of missing out (FOMO) was ( $r=0.42$ ), and PSU correlated with the social smartphone use (SSU) at ( $r=-0.19$ ) and non-social use was ( $r=0.12$ ). WhatsApp is mostly used in Smartphone and therefore from this study the use of WA has negative influence on the user on fears of missing out on the communications on chats. The findings further revealed that FOMO was significantly associated with social smartphone use such as WhatsApp platform. This fears of missing out if left an attended they may grow to unhealthy anxiety which could possibly cause damage to students and interfere with their school life.

In India, anxiety has been reported to be on the rise among high school students. A cross-sectional study conducted among 400 high school students in the Teliamura municipality region of Tripura. Findings showed that students had mild anxiety (49.4%), moderate anxiety (43.3%), and severe anxiety (7.3 percent). The students' average anxiety score was  $16.90 \pm 9.02$ . In comparison to male students, female students were at (10.9 percent) experienced more acute anxiety (3.8%) and this difference of different grades of anxiety with gender was statistically significant (Nag, et al, 2019). This study has given us a general anxiety but did not highlight the

anxiety levels from the use of WhatsApp. The current study will attempt to examine WhatsApp use anxiety levels of students who use WA since anxiety can be a serious mental health issue if not well managed among secondary school students at an early stage.

A similar study in Jordan was carried out by AiAzzam, et al. (2021) among secondary school students indicated that anxiety was high among the students. With regards to gender, the results show that the females' levels of anxiety were 49.9%, while the males' levels of anxiety were 27.6%. It was further revealed that some of the students are living a false life and desire to be popular as they see others online. There is social comparison that this could lead to unfulfilled life among high school students (Bloomfield, Neira& Barber, 2015; Chou & Edge, 2012). The study encouraged psychosocial support for high school students.

In Nigeria, Aluh, Chukwuobasi, and Mosanya, (2019) conducted across-sectional survey of social media anxiety among 228 students. The researchers found that the most frequently used social media platform was WhatsApp (58.8%). On the use of media and social media anxiety, the finding showed non- significance while negative association between social media use and social media anxiety was recorded at ( $r=0.05$ )  $P=0.4450$ . More than half of the students 55.7% reported to have used social media. The finding concluded that there was no correlation between social media use and social media anxiety. However, Asare-Donkoh (2018) conducted a study among 500 students about social media's impact on Ghanaian high schools. Social Media use was common among high school students. Based on the findings, short messages (SM) was said to elevate students' anxiety levels. This could be because of the interactions taking place. Most of the high school students have extensive access to internet-connected gadgets such as laptops, tablets, and cell phones. Instant messaging applications such as WhatsApp are used to connect to social networks. The downside is that they spent so much time on WhatsApp that hindered their academic concentrations in classes (Tariq et al, 2012).

In Tanzania, Kabuga (2016) conducted research on anxiety and academic performance among 92 secondary school students. It was made known that anxiety is caused by several things. Notably, 87.0% of students indicated corporal punishment as a major source of students' anxiety, 43.5% of student claimed that school strict rules and regulation are the cause of anxiety, 33.7% of students stated that teachers' harshness was responsible for students' anxiety. The study further revealed some signs of anxiety the students experienced, which were failure to write, respiration, body aches (40%), sudden heartbeat (85%), and hand trembling (52.4%), and stomach upset was seen as the lowest experience (8%). The study concluded that anxiety has severe negative effect on the students' academic performance. This was an interesting study that revealed the effects and possible causes of anxiety. However, the study could not show whether WhatsApp use among students has a relationship with their WhatsApp use anxiety levels. The current study will investigate WhatsApp use anxiety levels among mixed day secondary school students at Kamenu ward, Thika West sub-county, Kenya.

Locally, the issue of WhatsApp use anxiety among the Kenyan secondary schools' students is not an exception. Secondary school students have been struggling with this anxiety and other related mental health disorders such as depression. Anxiety and depression symptoms have been reported amongst 26.4% of students in Kenya (Nyayieka, Nzyuko, & Nyagwecha, 2020). In a study conducted in Homabay County, on correlation between clinical depression, anxiety and academic performance of adolescents in selected secondary schools in Kenya, 126 students were sampled among students aged 14 - 19 years. Among the participants, 54% were 14-16 years, while 46% were ages 17-19. The results indicated that there was no relationship of anxiety and performance, with performance ( $P= 0.651$ ). The anxiety, distance correlation Mean =  $1.65984 \pm$ , (SD: .47603). Academic performance was calculated as Mean =  $1.6984$  (SD: .81260). There was no significant link between anxiety and academic performance ( $p=0.651$ ). According

to the correlation coefficient analysis, there was no correlation between anxiety and academic performance among the pupils. However, academic performance mean score =1.6984 (SD: .81260) was compared to anxiety mean 1.65984 (SD:.47603). Academic performance was also a major source of worry ( $p=0.055$ ).

According to Nyayieka, Nzyuko, and Nyagwenda (2020), the study indicated that academic performance may increase or create anxiety among students therefore interfering with their school work and learning process. These symptoms need to be identified for earlier interventions program to be engaged so as to manage this heightens levels of disorders in good time. Kabuga (2016) discovered several factors of anxiety among secondary school students. These factors were; school strict rules, social media, teacher's harassments, teachers' harshness, students' capacity, inappropriate preparation, failure to adhere to examination instructions, inability to speak English properly as well a corporal punishment. The use of WA was not mentioned as one of the possible key factors that can enhance and increase anxiety among students. Thus, this study examined WhatsApp use anxiety levels among students who frequently use WA.

### **2.4.3 Relationship between WhatsApp Use and WhatsApp Use Anxiety among Secondary school students**

WhatsApp is a popular social media platform used among young people. Because of its widespread use, this platform has the potential to have new physiological, psychological, and societal effects on the users.

In the UK, Wood and Scott (2016) conducted a study among 467 teenagers aged 11 to 17 in secondary school and 11 to 15 in elementary school. The study looked at how students' use of social media affected their quality sleep, self-esteem, anxiety, and depression levels. Quality

sleep among student is vital and there was a concern on students when they do not get enough sleep. Sleep affects concentration and students end up getting distracted in class therefore affecting their academic performance and their anxiety levels (Zhang, Dimitriou& Halstead, 2021). In a similar study done by Espinoza (2011), he stated that out of 268 adolescents, 37% loss quality sleep at night as they engage on social network sites. Wood and Scott (2016) in their study had several themes that they were tested. These themes were; poor sleep, anxiety and depression levels, emotional investment, overall and night time specific social media. Findings indicated that 35% scored poor sleep with positive skewed, 47% reported to be anxious with a score of 8 or above the cut off score, 21% were depressed, with a cut of 8.

Furthermore, the study found that poor sleep and higher general social media usage had a  $r = .24$ ,  $p.001$  association, while night time specific and social media use had a  $r = .34$ ,  $p.001$  relationship. With  $r = .21$ ,  $p.001$ , increased anxiety levels were linked to more general uses of social media. This research clearly demonstrates that adolescents who use social media for a long period are more likely to develop anxiety, which, if left untreated for a long time, can lead to significant mental health problems (Wood & Scott, 2016). WhatsApp is said to have captivated the interest of a significant number of young individuals. Their behaviour, lifestyle, and academic achievement have all been altered as a result of their frequent usage of WhatsApp. According to Yeboah and Ewur (2014), using WhatsApp disrupts studies and puts pressure on students' academic performance. This study by Wood and Scott (2016) concentrated on teenagers aged 11 to 17 in secondary school and 11 to 15 in elementary school, and it discusses students' use of social media and its effect on their quality sleep, self-esteem and anxiety. There was no investigation on the relationship between WhatsApp use and WhatsApp use anxiety. Therefore, this current study hopes to carry out an investigation on the relationship between WhatsApp use

and WhatsApp use anxiety among students in mixed day secondary schools in Kamenu ward, Thika west sub-county, Kenya.

In Ghana, Appiah (2020) conducted research on the influence of WhatsApp on study habits of university students. The study comprised of 200 respondents aged 20 years and below. Participants below 20 years were at 48% while 53% were above 20 years. Appiah (2016) previously reported that, majority of students spent time on WhatsApp. Among the students, 40% were reported to spend 15 – 30 minutes on WA, 26% spent 1 -10 minutes, 20% spent 30-45 minutes and 13.3% spent 45 -60 minutes in a day. The results imply that in a day, all students spend more than 10 minutes on WhatsApp. When students were asked about feeling after visiting contacts status feature, 66.7% said they frequently feel dissatisfied and depressed, 26.7% said sometimes they experience discontentment and depressed and 6.7% reported that they do not feel any negative feelings of depression or discontentment. Results indicated that 66.7% of students were disturbed psychologically, and were likely to developed stress and anxiety therefore an influence of use of WhatsApp among the students (Appiah, 2020).

In Tanzania, Moshi (2018) investigated the impact of social media on learning behaviours among secondary school students in Moshi Municipality. Following Tanzania's internet penetration of 30%, the study looked at 125 students aged 16 to 19. According to the findings, students' use of social media has both beneficial and bad consequences on their learning behaviours. Moshi (2018) revealed that majority students use social media in their school lives. The researcher reported 63% agreed and 37% disagreed that students use social media in their school life. On most favourable social media, WhatsApp was the leading and popular social media with 53%, Facebook with 30%, followed by Instagram 6%, twitter 5%, Skype 4% and LinkedIn 3%. The positive use of WhatsApp as reported by students, 99% said it is easy to access the learning information, the excitement of using the WhatsApp as a learning tool, 85%

agreed to it while 69% love and enjoy use of video and audio to enhance their learning. However, 94% of students reported negative effect of WhatsApp use as an influence to premarital sex, 74% reported to have increased desire to use drugs while 64% agreed to have increased poor attitude toward class attendance. It was also stated that WhatsApp use among these students was mostly use to conduct negative harm to self and others (Moshi, 2018). Due to this, students are drawn to general life risks, which may generate social media anxiety and this interfered with the student's health life. Therefore, this study examined the relationship between WhatsApp use and WhatsApp use anxiety among students in mixed day secondary schools in Kamenu ward, Thika west sub-county, Kenya

In Kenya, it is recorded that day public school students are informed and they have access to many social media sites. According to Kiplagat and Ombiro (2016), 1132 students participated in a study on social media usage and academic achievement in secondary school in Kenya. Findings revealed that 96.6% are cognizant of several social media sites while 3.1% are not cognizant of any social media sites. Result also showed that 93.4% students reported to have subscribed to social media sites, while 66% are not subscribed to any of the social media sites. The most favourite social media sites used by students were Facebook with 43.6%, WhatsApp with 27%, Instagram is 6.2%, YouTube is 5.4%, Twitter is at 5.0% and 11.9% students do not access any social media sites.

In the same study, Kiplagat and Ombiro (2016) revealed that majority of the students use social media sites for information gathering were 43.9%, for entertainment 22.5%, 12.8% use social sites for pornography view, 9.6% for chatting while 11.2% is to feel digitalized. On time spent on social media 66.8% spend time on education learning sites, while 33.2% do not spend time on education sites, 77.9% agreed that social media affects their academic studies while 22.1% said social media sites do not affect their academic studies. In the negative influence of

their study, 60.8% agreed to that fact, while 26.5% reported to be influenced positively and 12.7% were not affected in anyway (Kiplagat & Ombiro, 2016). Ooko (2021) carried a similar study in United States International University (USIU) in Kenya on the relationship between problematic of smartphone use and social anxiety among USIU student. He reported that social anxiety of male was 90% low and 9.1% high, while female students had 69.9% low social anxiety with 20.5% high. There was a positive correlation and statistical significance ( $r=0.222$ ,  $P=0.02$ ) This means the students with recorded problems of smartphone use like WhatsApp use are likely to express high social anxiety. Kiplagat and Ombiro (2016) further said that 96.6 percent of students appeared to be aware of social media sites and 27% of students are subscribed to WhatsApp. Similarly, the influence of social media was recorded to interfere with academic performance, behaviour and habits, time wasting on social media and interference of learning language.

There have been concerns about stress, anxiety as well as depression in the course of WhatsApp use. Nyongesa, Kiprop and Chumba (2019) established that social media, like WhatsApp use increases students' stress, anxiety, depression and misery. Findings indicated that 58% of secondary school students agreed that WhatsApp use increases students' stress, anxiety, depression and misery, 34% disagreed, while 8% were not sure. Duley (2015) alluded that a lot of anxious personality disorders were caused by spending too much time online, which leads to social media addiction. This disorder disrupts students' intellectual ability. Students, who are unable to manage their anxiety, may get wrong solutions from online interaction as a coping mechanism. Due to their curiosity hence, they practice what they see and the outcome may result into unwanted pregnancy, drug and substance use or other mischievous behaviour (Kimemia & Mugambi, 2016).

In mixed day secondary schools in Kamenu ward, it is quite not clear as what could be responsible for behaviours changes and indiscipline issues among the students hence the need to examine the possible relationship between WhatsApp use and WhatsApp use anxiety among secondary students in mixed day secondary schools in Kamenu ward, Thika West sub-county, Kenya.

## **2.5 Research Gap**

The use of WA has both positive and negative benefits among students across the globe. It has been rated to be one of the most frequent social media apps, used by students and non-students. The extreme use of WA if not well managed can be inimical especially to students (Kariuki, 2017). Research carried out by Meenakshi, Anitha and Lakshimi (2019) on impact of use of WhatsApp among students in Vaishnav College of women in India. Students were aged 17 to 23 years old, and the participants were only females, and also test of WhatsApp use anxiety levels were not examined. This study investigated the WhatsApp use levels and WhatsApp use anxiety levels among males and females' students in secondary school who use WA. In Nigeria a study was conducted by Anireh, Uchena, Amadi and Eleanor (2020) among 100 college students in Port Harcourt in order to determine the efficacy of WA use among the students. The study was focused only on college students, and it did not examine the possible relationship between WA use and WU anxiety among secondary school students. This study therefore filled in these gaps.

In Tanzania, Moshi (2018) carried out an investigation on the impact of social media on learning behaviours among secondary school students in Moshi Municipality. The sample size of the study was 125 students, which may be seen as not sufficient for generalization. Also, the study focused on "the impact of social media on learning behaviours among secondary school students", and relationship between WA use and WU anxiety were not examined, and hence the need to fill these gaps. Furthermore, in Kenya, Nyongesa, Kiprop and Chumba (2019)

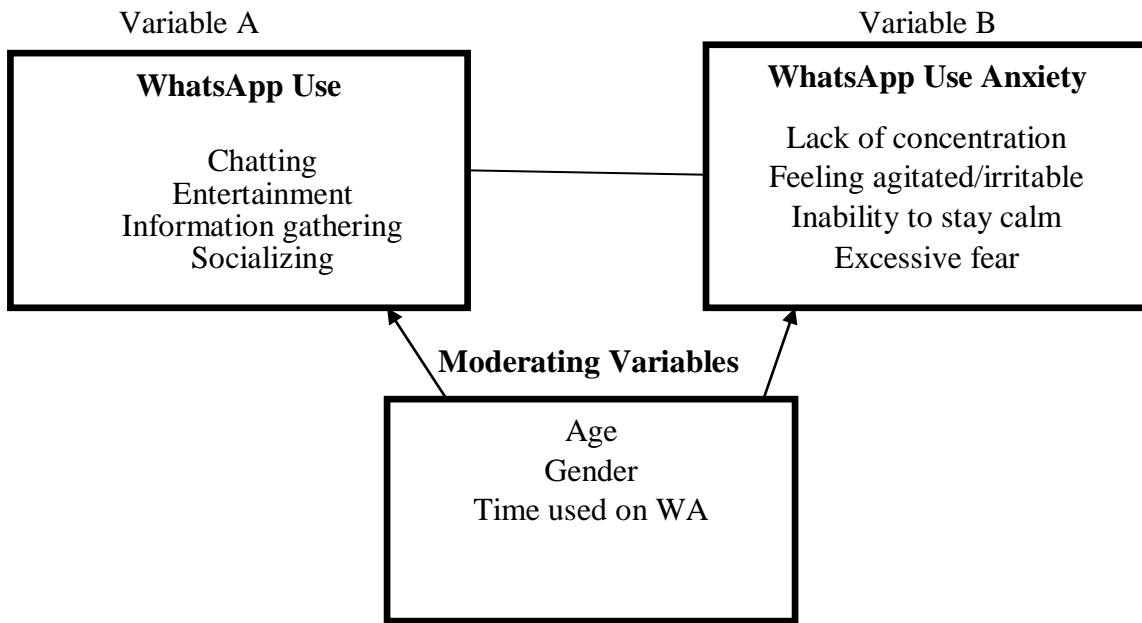
established that social media, like WhatsApp use increases students' stress, anxiety, depression and misery. Findings indicated that 58% of secondary school students agreed that WhatsApp use increases students' stress, anxiety, depression and misery, 34% disagreed, while 8% were not sure. The study was rich but did not record the anxiety levels if mild, moderate or high. This study investigated the relationship between WhatsApp use levels and WhatsApp use anxiety levels among students in mixed day secondary schools in Kamenu ward, Thika West sub-county, Kenya.

## **2.6 Conceptual Framework**

Conceptual framework is a structure that shows how the study's core concepts are structured, as are the variables' influences on one another. It explains and helps in understanding the phenomenon under the study (Shikalepo, 2020). The conceptual framework in figure 2, it shows a possible relationship between WhatsApp use (Variable A) and WhatsApp use anxiety (Variable B), and how the moderating variables influence the Variable A and variables B.

**Figure 2**

*Conceptual framework*



*Source: Njeri, 2024*

WhatsApp use is the interaction which has the following indications; chatting, information gathering, entertainment and socializing. Students who get absorb in WhatsApp use like chatting for entertainment and socializing and may waste a lot of time, neglecting their daily engagements due to negative responses from people they interact with, and this may generate some negative feelings that may build up to stress bringing about anxiety.

WhatsApp use anxiety is an emotional condition that develops in the face of impending risk and manifests in the anticipation of unpleasant outcomes while interacting on the WhatsApp. It comes with the following indicators: lack of concentration, feeling agitated/ irritable, and inability to stay calm and excessive fear. These manifestations of WhatsApp use anxiety may

interfere with students' emotions that could hamper their mental health as well as their academic progress.

Demographic variables which are age, gender and time used on WA are the moderating variables. The moderating variables may have some influence on WhatsApp use anxiety emanating from use of WA. The time spent on WhatsApp, this may generate WhatsApp use anxiety due to content shared and received, either by using the WA responsibly or abusing the use by overusing the platform. Students if they spent time on WhatsApp irresponsibly, they may get distracted in their school work and this may generate feelings of fear and being afraid due to unfinished assignments, fear of missing out online, irritated and sleepy a result of late sleep and skipping assignments.

Students who spend more time either in individual chatting or entertained online may have insufficient time to have quality sleep therefore unable to concentrate in class due to inadequate sleep at night therefore interfering with their emotions and other engagements. However, for students who spend reasonable time may be responsible and therefore may not be affected since they are able to balance their school activities and therefore are able to cope with their WhatsApp use anxieties.

## **2.7 Chapter Summary**

This chapter conceptualized two variables, which were WhatsApp and WhatsApp use anxiety. It also discussed relevant theories for the study and conducted an empirical literature review in accordance with the study's aims. The main research gaps this study is filling in are: gender, it will equally examine both male and female students hence the relevancy of mixed school. Age, from the previous studies there is a variation in age selection while approaching this study I believe knowing the actual age that is affected by WhatsApp use anxiety can be achieved

if a range is given that capitalizes on the very young adolescents who are trying to find themselves hence I worked with as young as 14 years of age students. I believe determining the level of WhatsApp use anxiety is very relevant as just knowing that it exists or not is not enough to give relevant management measures, knowing the level with aid a lot in planning and knowing what measures to work with. It identified the research gaps, and then ended with the conceptual framework. The next chapter focuses on the methodology.

## **CHAPTER THREE**

### **METHODOLOGY**

#### **3.1 Introduction**

This chapter will outline the appropriate approaches for conducting this research. The research design, research site, target population, sampling technique and sample size, research instruments, pre-testing, data collection procedure, data analysis, ethical considerations, and the study's expected relationship between the two variables will all be covered.

#### **3.2 Research Design**

A research design is a strategic plan that describes the project's overall scope and key components (Mugenda and Mugenda, 2003). Polit and Beck (2010) define research design as the researcher's overall approach to answering the research question or testing the study hypothesis. This study followed a correlation research strategy. The quantitative research method, a numerical scale study with a large sample size, was used. It was suitable to identify trends in the study, in this case the correlations between WhatsApp use and WhatsApp use anxiety among the students in mixed secondary school –Kamenu ward Thika, Kenya was identified. At the same time this study design allowed the research to analysis data statistically, measured variables and identified any patterns and relationships. The research findings can be generalized to the larger population.

#### **3.3 Research Location**

The study was conducted in Thika constituency which is divided in to two sub- County; West and East Sub- counties. Thika constituency has a population 350,000 according to the 2019 population census (Kenya Bureau of Standard, 2019). The town is close to Nairobi city with about 40km away and 45mins drive. Thika town is an industrial town which is well located

between urban and rural so well connected with internet. Thika has many manufacturing companies which has attracted a large labour force and therefore has a growing population and economical empowered. It is a cosmopolitan town so the data will not be bias to one cultural background. The research will be carried out in Thika west Sub- County public mixed day secondary schools, the number of sample size will be sufficient. Thika West Sub-County has two wards; hospital ward and Kamenu ward. There are three public mixed day's secondary schools namely; Kimuchu, Broadway and Queen of holy rosary public mixed secondary schools. Using simple random sampling technique, Kimuchu and Broadway were selected for data collection while Queen of holy rosary for pre-testing. Queen of holy rosary mixed day school was used as a pre-test school and no data from this school was used in final results.

### **3.4 Target Population**

According to Kombo and Tromp (2006), the target population is the number of respondents selected by the researcher to achieve the study's objectives. This study's target group consisted of 2,612 students from two public mixed-day secondary schools in Thika West Sub-County, which were the only public day schools in the area. Participants may need to have previously accessed or used WhatsApp on their personal phones or borrowed phones, laptops, or desktops. These enabled the researcher to collect relevant and reliable data for the study's objectives.

### **3.5 Sampling Design**

Sampling design is the process of picking a group of individuals or items from a population so that the selected group reflects characteristics common to the entire group (Selvam, 2017). The researcher used proportional and simple random to identify the right respondents. This was to give every student right to participate in the study.

### 3.5.1 Sampling Frame

The sampling frame refers to the list of items, such as persons, places or schools. These lists form the population where samples will be picked from (Kumar, 2014). This study had a list of the only two public mixed day secondary school in Thika West Sub- County, for all classes (Form 1-4) and genders as shown in table 1.

**Table 1**  
*Population of the Study*

Kimuchu Mixed Secondary School				Broadway Mixed day High school			
Class	Girl	Boy	Total	Class	Girl	Boy	Total
F1	122	199	321	F1	158	205	363
F2	128	208	336	F2	160	219	379
F3	132	153	285	F3	159	215	374
F4	84	144	228	F4	165	161	326
			1170				1442

*Source: Njeri, 2024*

As seen in table 1, targeted population from Kimuchu Public mixed secondary school was 1,170 students, while Broadway mixed high school was 1,442 students. Therefore, the total target population was 2,612 secondary school students.

### 3.5.2 Sampling Technique

According to Kombo and Tromp (2006), sampling techniques and sample size are critical in defining the sample's relationship to generalize about a population. In this study, the researcher used random sampling technique. This is where the researcher calculates the sample using proportional sampling technique. At random a student was selected for sampling. This proportional sampling technique gave equal rights to all students and therefore avoiding biasness

**Table 2*****Proportional sampling in Kimuchu and Broadway mixed day high schools***

The number of students to be sample was arrived by dividing the total of every class by the sum total of 2,612 then multiplied by the sample size. For example, in Kimuchu girls in form one is  $122/2612$  time the 335 = 15.64 rounded up to 16 students. This was repeated in all classes and schools. In the tables 2 shown above, a total of 151 students of F1 to F4 were sampled in Kimuchu mixed day secondary school, while a total of 184 students of F1 to F4 were sampled in Broadway Mixed day High school. The total sample was 335 students. Table 2 here below further shows the distribution

<b>Kimuchu Mixed Day Secondary School</b>							
	<b>Girl</b>	<b>Sample</b>	<b>%</b>	<b>Boy</b>	<b>Sample</b>	<b>%</b>	<b>Total Sample</b>
F1	122	16	25.60	199	25	27.49	41
F2	128	17	28.33	208	27	29.67	44
F3	132	17	28.33	153	20	21.98	37
F4	84	11	18.33	144	18	19.78	29
		<b>61</b>	<b>100%</b>		<b>90</b>	<b>100%</b>	<b>151</b>

<b>Broadway Mixed Day High School</b>							
	<b>Girl</b>	<b>Sample</b>	<b>%</b>	<b>Boy</b>	<b>Sample</b>	<b>%</b>	<b>Total sample</b>
F1	158	20	24.39	205	26	25.49	46
F2	160	21	25.61	219	28	27.45	49
F3	159	20	24.39	215	27	26.47	47
F4	165	21	25.61	161	21	20.59	41
		<b>82</b>	<b>100%</b>		<b>102</b>	<b>100%</b>	<b>184</b>

*Source: Njeri, 2024*

**3.5.3 Sampling Size Determination**

Kothari (2004) stated that a sample size should be neither too large nor too small in order to generate accurate results. As a result, the sample size for this investigation was calculated using the Krejcie and Morgan formula (1970). This formula employs a 95% confidence interval and 5% estimated error.

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

Where:

**S** = the required sampling size

**X<sup>2</sup>** = the table value of chi-square for 1 degree of freedom at the desired confidence level  
(3.841)

**N** = the population size

**P** = the population proportion (0.50 is used to provide the maximum sample size)

**1-P** = estimated proportion of failures

**d<sup>2</sup>** = Square of the maximum allowance for error between the true proportion and sample proportion (in this study, it is at 5%)

$$S = \frac{3.841 \times 2,612 \times 0.5 \times (1-0.5)}{(0.05)^2 (2,612-1) + 3.841 \times 0.5 \times (1-0.5)}$$

$$S = \frac{10032692}{29951}$$

$$S = 334.9701846349$$

$$S = 334$$

The sample size of this research was rounded up to 335; therefore, the sample size of this study was 335 students.

### 3.6 Research Instruments

A research instrument is a tool used by researchers to collect measurement data. It can be tests, surveys scales and questionnaires, and the instruments must be reliable and valid (Selvam, 2017). WhatsApp Use Scale (WUS) is a 5-pointslikert scale. The WUS has 14 items and was adopted and has three dimensions constructs namely reason for use of WhatsApp questions (6 to

12), positive opinion questions (13 to 16) and negative opinions of usage questions (17 to 19). It is open tool in public domain to be used among the youths in different geographical site. The 5-point Likert scale measurement is a self-reporting scale ranging from 1- Strongly Disagree, 2- Disagree, 3- undecided, 4 Agree, 5 Strongly Agree. The highest score a participant could get is 70 and the lowest a participant could get is 14. Higher scores show high level of use and low score shows low level of use of WhatsApp (Soyturk, Memis & Schenker, 2020).

The second instrument that was used was WhatsApp use anxiety scale (WUAS). Researcher adopted from the Beck's anxiety inventory (BAI), four constructs (lack of concentration, feeling agitated /irritable, inability to stay calm and excessive fear) and formulated a scale that reflects the phenomenon under the study. The tool is in the public domain to be used among the youths in different geographical site. In this case the WhatsApp use anxiety scale formulated has 16 items which measures four factors in the questionnaire. These are lack of concentration (20-23), feeling agitated (24-27), inability to stay calm (28-31) and excessive fear (32-35). A self-reporting instrument of 5-point Likert scale ranging from 1- Strongly Disagree, 2- Disagree, 3- undecided, 4 Agree, 5 Strongly Agree will be used. The total score was calculated by finding the sum of the 16 items which is 80. Higher scores would mean high level of WhatsApp use anxiety and low score would indicates low level of WhatsApp use anxiety.

### **3.6.1Pre-testing of Instruments**

A pre-testing study is a type of early research carried out before a full-scale investigation is carried out (Mugenda Mugenda 2003). A pre-testing of the study instruments was performed to allow the researcher to validate the instruments and gain a sense of the reality in which the study was conducted. A pre-testing research was conducted in a medical ward at Queen of the Holy Rosary Mixed Day Secondary School in the Thika West sub-country.

The questionnaires were administered to the participant's pre-selected using simple randomised method. The Pre-testing included 33 respondents who were 10% of the total sample population of the study as recommended by Mugenda and Mugenda on his sampling of sample size of pre-testing (2003). Pre-testing was used to verify the reliability of the instruments. This study applied Cronbach Alpha to measure reliability and validity of questionnaire.

### **3.6.2 Validity and Reliability**

The validity of a research instrument refers to how well study tools measured what they were designed to test (Orodho, 2005). The consistency of a test's outcomes is measured by its validity as a measure of how well a test works. The purpose of determining the validity of a test as a measure is to determine if the instruments measured what they were designed to measure. The researcher ensured that no unclear terminology is used in the questionnaire, and the supervisors will provide the required direction. The goal of this study is to use both content and construct validity. Content validity, as defined by Heale and Twycross (2015), determines whether a test is representative of the population. The internal consistency of the WhatsApp Use Scale (WUS) was tested by Soy Turk and Memis (2020) among students in Turkey. It was found to have a good internal validity of Cronbach alpha .850.

The concept of dependability is heavily reliant on quantitative research's extensive statistical procedures as a means of ensuring the data's reliability. According to Mugenda & Mugenda (2003), dependability is defined as the degree to which a given research process produces similar results over a number of trials. It also relates to an instrument's consistency in producing identical results at different times, as argued by Orodho (2005). The test and retest procedure were used in order to confirm the study's steadiness. Cronbach alpha was used in this study to assess the reliability of the questionnaire. This was done to determine the reliability

correlation coefficient. After pre-test of WhatsApp use anxiety scale (WUAS) reliability Coefficient Cronbach alpha was .862, as compared to the original BAI scale which has internal consistency for Cronbach's  $\alpha=0.92$  Test-retest reliability (1 week) for the BAI = 0.75 (Beck, Brown, Epstein, & Steer, 1988), while WhatsApp Use Scale Reliability Coefficient Cronbach alpha was .735. These are good indication of the reliability of the scales.

### **3.6.3 Scoring of Scales**

The first scale will be WhatsApp use scale (WUS) adopted from Soyuturk, Memis and Schenker (2020) with 14 items. The scoring was done by adding up the items. The highest was 70 and lowest was 14; the findings are reported in high use level, moderate use level and low use level. Levels of WhatsApp use was scored and consolidated in ranges as follow: 14-34 (Low level of WhatsApp use), 35-51(Moderate level of WhatsApp use), and 52-70 (High level of WhatsApp use).

In addition, the second instrument was WhatsApp use anxiety scale (WUA). Four constructs (lack of concentration, feeling agitated /irritable, inability to stay calm and excessive fear) were adopted from Beck's anxiety inventory (BAI) scale and constructed to fit the phenomenon under study. WhatsApp use anxiety scale have 16 items. The total scoring was calculated by finding the sum of the 16 items which was 80. WhatsApp use anxiety was reported in 4 levels, severe, high, moderate and low levels. The scoring ranges from: 16-20 = low WhatsApp use anxiety, 21-41= moderate WhatsApp use anxiety and 42-61 = high WhatsApp use anxiety and 62 -80 = severe WhatsApp use anxiety.

### **3.7 Data Collection Procedures**

The data collecting procedure is the process of acquiring and measuring information from the variables of the investigation. The procedure enables the researcher to answer the research

questions, test hypotheses and evaluate the outcome of the study (Kabir, 2018). The study employed questionnaire method to collect data. Before going to the field to collect data, the researcher got an Ethic authorisation letter from Tangaza University College and a research permit from the National Commission for Science, Technology, and Innovation (NACOSTI). The letter of authorisation from the ministry of education Thika sub-County for the three secondary schools was obtained on time. Two research assistants of both genders were recruited and trained on data collection. The researcher scheduled appointments with the selected mixed-day secondary schools in Thika sub-County, as well as with the school principals, to explain the purpose and logistic to collect data. The participants were introduced to the researcher and research assistants. The questionnaires were administered to the participant's pre-selected using simple randomised method per gender per class per school. Students were informed about the study and then issued with the consent form together with the questionnaire. Ten extra copies of surveys were included to mitigate attrition.

### **3.8 Data Analysis**

Data analysis is a crucial component of the appraisal process (Richmond 2006). Data analysis is the process of organizing received data by categorizing it into patterns, categories, and descriptive units, as well as looking for linkages between them. Richmond (2006) defines data analysis as a systematic, continuous, and rigorous procedure that includes some generic ideas. The data analysis consists of three sub-processes, the first of which is the collecting of data from the field, where units of data from the total population were chosen. Data display is the process of gathering information in various formats and developing conclusions based on those results.

The researcher checked the field questionnaires for completeness and coding. The quantitative data received from respondents was analyzed using the Statistical Package for Social Sciences (SPSS) version 26. Descriptive statistics were utilized; demographic was analysed as

categorical unpaired grouped data and reported in frequencies and percentages. The research objective one was analysed to examine the extent of WhatsApp use levels among the students, and findings was presented in frequencies and percentages, ranges of WhatsApp use levels high, moderate and low. The research objective two was presented in composite scores, which was in four levels; low, moderate, high and severe. The Pearson's coefficient correlation and scattered plot analysis was performed to investigate research question three: the relationship between WhatsApp use and WhatsApp use anxiety among mixed-day secondary school students in Thika West Sub-County, Kenya.

### **3.9 Ethical Considerations**

Ethical issues refer to some concerns regarding dilemmas during research process to avoid creating harmful conditions for the respondents when collecting data from the field. The researcher got ethical clearance from Tangaza University before proceeding for data collection. It will further obtain permission from National Commission for Science, Technology, and Innovation (NACOSTI). The researcher also obtained clearance from the sub-county administrations where data was collected. The researcher included an opening letter in the questionnaire for self-identification. The participants were informed of the voluntary nature of the study, and also were informed of no monetary rewards, and that they are free to withdraw any time they wanted to. Participants were assured of confidentiality and that their names would not be mentioned neither used in publication of the final report. The research had no intention of causing harm to the participants. The informed consent was given in the study through clear authorization and explanation of intention to carry out the study, moreover, the consent was given the minors by the school principle. The participants were allocated 20-35 minutes to respond to the questionnaires. Debriefing took place after the data collection.

### **3.10 Chapter summary**

This chapter explored the appropriate approaches for the study. These included the research design, research location, target demographic, sampling technique, and sample size. The research instruments were discussed. It also discussed the study instruments, pre-testing, instrument scoring, data collection technique, data analysis, ethical considerations, and chapter summary.

## **CHAPTER FOUR**

### **FINDINGS**

#### **4. 1 Introduction**

This chapter describes the study's findings. It begins with the response rate of the research respondents, followed by the demographic information of respondents, the reliability statistics of the scales, and then culminates with findings in line with the objectives of the

research, which are; to examine WhatsApp use among Students in Mixed Day Secondary Schools, to measure the levels of WhatsApp use anxiety among Students in Mixed Day Secondary Schools, and finally to establish the relationship

#### 4.2 Response Rate

This section shows the return rate of the questionnaires distributed to the research participants. The outcomes are presented in Table 3.

**Table 3**

*Response Rate*

Sample size	Distributed Questionnaires	Returned Questionnaires	Spoiled	Properly Filled	Percentage
335	345	345	17	328	95.6%

As seen in Table 3, the sample size of this study was 335. In order to address the concern of attrition, the researcher added 10 extra questionnaires to make up 345 questionnaires. Therefore, the number of questionnaires that were distributed to the students who participated in this study was 345. Out of the 345 questionnaires that were distributed, 345 questionnaires were returned, 17 of the questionnaires were spoiled and hence discarded. They were discarded because some of them were half-filled, while others had missing pages, hence rendering the 15 questionnaires invalid. The remaining 328 questionnaires that were properly filled were used for data analysis. Thus, this research had a 95.6% response rate; as Mugenda and Mugenda (1999) said, “in research the 50% is deemed adequate, and 70% is considered to be good while above 70% is excellent”.

### 4.3 Reliability of WhatsApp Use Scale and WhatsApp Use Anxiety Scale

A test was carried out to ascertain the reliability of the internal consistency of the positive living and social support scales respectively. Cronbach's Alpha provides a measure of the internal consistency of a test or scale; The SPSS version 25 was used to carry out this investigation. According to Cronbach (1951), the alpha of  $\alpha < .5$  is considered undesirable;  $.5 \leq \alpha < .6$  is considered poor;  $.6 \leq \alpha < .7$  is considered acceptable;  $.7 \leq \alpha < .9$  is considered good; and  $\alpha \geq .9$  is considered excellent. Findings are presented in Table 4.

**Table 4**

*Reliability of scales*

Name of scales	Cronbach's Alpha	N of Items
WhatsApp Use Scale	.735	14
WhatsApp Use Anxiety	.862	16

According to Table 4, results of the reliability of Cronbach's Alpha test show that the WhatsApp Use scales (of 5-point Likert scale) had an alpha of  $\alpha = .735$ , having the total number of 14 items, and this is considered acceptable. The WhatsApp Use Anxiety scale also (on a 5-point Likert scale) had an alpha of  $\alpha = .862$ , having the total number of 16 items and this is considered to be good. Therefore, the two scales had reliable internal consistency.

### 4.4 Demographic information of respondents

Descriptive statistical analysis on unpaired grouped data was conducted to find out the demographic information of the research participants. Data was gathered under the following demographics; age, gender, educational level, time spent on WhatsApp and access to WhatsApp. The outcomes are presented in Table 5.

**Table 5***Demographic Characteristics of Age, Gender and Education level*

<b>Age</b>	<b>Frequency</b>	<b>Percent</b>
14- 15 years	116	35.4
16- 17 years	149	45.4
18- 19 years	60	18.3
20-21 years	3	0.9
Total	328	100
<b>Gender</b>	<b>Frequency</b>	<b>Percent</b>
Female	154	47
Male	174	53
Total	328	100
<b>Education level</b>	<b>Frequency</b>	<b>Percent</b>
Form 1	88	26.8
Form 2	93	28.4
Form 3	79	24.1
Form 4	68	20.7
Total	328	100

**Table 6***Demographic Characteristics Access to WhatsApp and Time Spent*

<b>Access to WhatsApp</b>	<b>Frequency</b>	<b>Percent</b>
Phone	257	78.4
Laptop	26	7.9

Computer	9	2.7
Tablet	36	11
Total	328	100
<b>Time spent</b>	<b>Frequency</b>	<b>Percent</b>
30 min – 1hr	87	26.5
1hr – 2hrs	101	30.8
2hrs -3hrs	59	18
3hrs and above	81	24.7
Total	328	100

Findings in Table 5 and Table 6 shows a frequency distribution tables of demographics, less than 1% of the our respondents are between ages 20-21 years. Male students constituted 53% of the total students who reported in my study. The classes response were normally distributed in my study with each class constituting more than 20% and less than 30% and thus making the data unbiased towards a particular class. Computers are less popular among students in these specific day schools with regard to WhatsApp access point with less than 3% usability. Students tend to spend between 1 to 2 hours and 30 minutes to 1 hour on WhatsApp, this is show by close percentages dominance with this those two intervals reporting 30.8% and 26.5% respectively of the respondents in Mixed Day Secondary Schools in Kamenu ward Thika, Kenya.

#### **4.5 Levels of WhatsApp Use among Students in Mixed Day Secondary Schools in Kamenu ward Thika, Kenya.**

The first objective of this study was to examine what extent are WhatsApp Use levels among Students in Mixed Day Secondary Schools in Kamenu ward Thika, Kenya. Descriptive statistics was used to examine the use of WhatsApp. In this regards, 14 items (6-19) were used

for this analysis. The highest score a participant could get is 70 and the lowest a participant could get is 14. Higher scores show High WhatsApp use. a self-reporting instrument of 5-point scale ranging from 1- Strongly Disagree, 2- Disagree, 3- undecided, 4 Agree, 5 Strongly Agree. Levels of WhatsApp use is as follow: 1-24 (Low level of WhatsApp use), 25-47(Moderate level of WhatsApp use), 48 and above (High level of WhatsApp use). Results are presented in Table 7.

**Table 7**  
*Levels of WhatsApp Use among Students*

Levels	Ranges	Frequency	Percentage
High	48 +	273	83.2%
Moderate	25 - 47	54	16.5%
Low	14-24	1	0.3%
Total		328	100%

As seen in Table 7, findings revealed that 83% of the students score high level of WhatsApp, while less than 1% of the students in Mixed Day Secondary Schools in Kamenu ward Thika Kenya, had low level of WhatsApp Use.

The Chi-square test for categorical unpaired grouped data was used to analyse the demographic features in relation to WhatsApp Use among the participants of this study. The outcomes are tabulated in Table 8.

**Table 8**  
*Distribution of Levels of WhatsApp Use among Demographics Features*

		WHATS APP USE LEVEL		
		Low	Moderate	High
		Count	Count	Count
AGE	14-15Years	1	24	91

	16-17Years	0	20	129
	18-19Years	0	9	51
	20-21Years	0	1	2
WHATS APP USE LEVEL				
		Low	Moderate	High
		Count	Count	Count
GENDER	Female	0	29	125
	Male	1	25	148
WHATS APP USE LEVEL				
		Low	Moderate	High
		Count	Count	Count
CLASS	Form 1	0	16	72
	Form 2	1	16	76
	Form 3	0	11	68
	Form 4	0	11	57
WHATS APP USE LEVEL				
		Low	Moderate	High
		Count	Count	Count
ACCESS TO WHATSAPP	Phone	1	47	209
	Laptop	0	5	21
	Computer	0	1	8
	Tablet	0	1	35
WHATS APP USE LEVEL				
		Low	Moderate	High
		Count	Count	Count
TIME SPENT	30-1hr	1	14	72
	1hr-2hrs	0	27	74
	2hrs-3hrs	0	6	53
	3Hrs and	0	7	74
	Above			

The above Table 8 shows that close to 40% (39.33%) of the students aged between 16 to 17years reported high levels of what app use. Male students reported high usage at 45%. Form Two's and form One's students significantly showed high levels of WhatsApp usage which stood at 23.1% and 21.9% respectively. Mobile phone is significantly the access point of WhatsApp as it stood at distinctively 63.7%, Students tend to spend between 1 to 2 hours and

more than three hours on WhatsApp, this is shown by the equal percentage dominance with this those two intervals each reporting 23% of the response.

#### **4.6 Levels of WhatsApp Use Anxiety among Students in Mixed Day Secondary Schools in Kamenu ward Thika, Kenya.**

The second objective of this study was to measure the levels of WhatsApp Use Anxiety among students in Mixed Day Secondary Schools in Kamenu ward Thika, Kenya. In this regards, 16 statements were used to measure the levels of WhatsApp Use Anxiety. Every statement was measured on a 5-point scale and was scored give; 1 = Strongly disagree, 2 = Disagree, 3 = Undecided, 4 = Agree, and 5 = Strongly agree. The lowest possible score any participant could get was 16 and the highest score any participant may get was 80. The levels of WhatsApp Use Anxiety were further scored; 1-21 (low level of WhatsApp Use Anxiety), 22-41 (Moderate level of WhatsApp Use Anxiety), 42-60 (high level of WhatsApp Use Anxiety), and 61-80 (severe level of WhatsApp Use Anxiety). The outcomes are presented in Table 8.

**Table 9**

*Levels of WhatsApp Use Anxiety*

Levels	Ranges	Frequency	Percentage
Low	16-21	0	0.0
Moderate	22-41	7	2.1
High	42-60	56	17.1

Severe anxiety	61-80	265	80.8
Total		328	100%

Table 9 revealed that close to 81% (80.8%) of respondent's experienced severe anxiety.

The demographic features which were age, gender, education level, WhatsApp use and WhatsApp access among the respondents in relation to WhatsApp Use anxiety was tested to reveal how they interact. The Chi-square for categorical unpaired grouped data was used to analyse among the participants of this study. The outcomes are tabulated in Table 10.

**Table 10***Distribution of Levels of WhatsApp Use Anxiety among Demographics Features*

		WHATS_USE_ANXIETY_SCORE (Binned)			
		Low	Moderate	High	Severe
		Count	Count	Count	Count
AGE	14-15Years	0	2	32	82
	16-17Years	0	3	16	130
	18-19Years	0	2	8	50
	20-21Years	0	0	0	3
		WHATS_USE_ANXIETY_SCORE (Binned)			
		Low	Moderate	High	Severe
		Count	Count	Count	Count
GENDER	Female	0	2	28	124
	Male	0	5	28	141
		WHATS_USE_ANXIETY_SCORE (Binned)			
		Low	Moderate	High	Severe
		Count	Count	Count	Count
CLASS	Form 1	0	1	18	69
	Form 2	0	1	20	72
	Form 3	0	2	10	67
	Form 4	0	3	8	57
		WHATS_USE_ANXIETY_SCORE (Binned)			
		Low	Moderate	High	Severe
		Count	Count	Count	Count
ACCESS TO WHATSAPP	Phone	0	7	43	207
	Laptop	0	0	9	17
	Computer	0	0	1	8
	Tablet	0	0	3	33
		WHATS_USE_ANXIETY_SCORE (Binned)			
		Low	Moderate	High	Severe
		Count	Count	Count	Count
TIME SPENT	30-1hr	0	2	23	62
	1hr-2hrs	0	1	19	81
	2hrs-3hrs	0	0	7	52
	3Hrs and Above	0	4	7	70

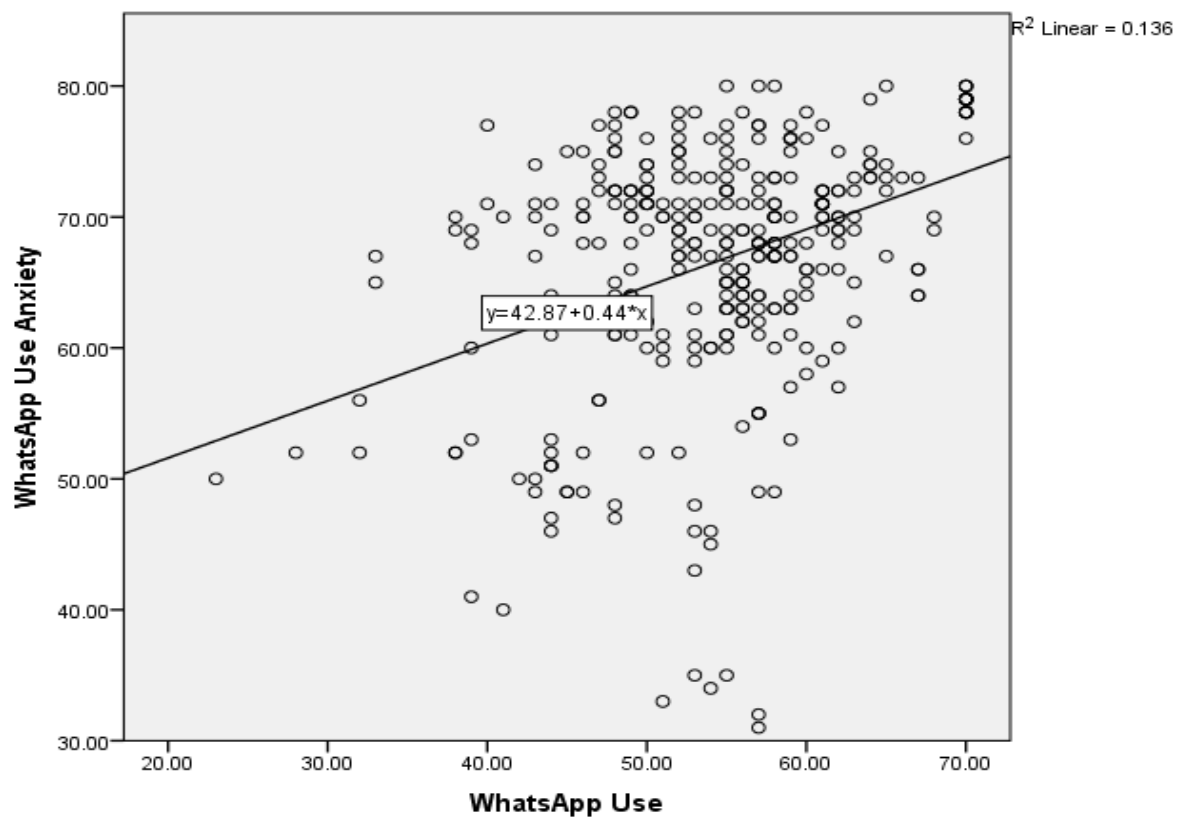
The findings in Table 10 indicate that close to 40% (39.63%) of the students aged between 16 to 17 years reported severe levels of WhatsApp use anxiety. Male students reported severe WhatsApp usage anxiety at 43% (42.99%). Form 2 and form 1 students significantly showed severe levels of WhatsApp usage anxiety which stood at 22% and 21% respectively. Mobile phone is significantly the access point of WhatsApp use anxiety as it stood at distinctively 63.1%, Students tend to spend between 1 to 2 hours and more than three hours on WhatsApp, this is show by close percentages dominance with this those two intervals reporting 25% and 22% respectively on WhatsApp use anxiety of the respondents in Mixed Day Secondary Schools in Kamenu ward Thika, Kenya.

#### **4.7 Relationship between WhatsApp use and WhatsApp use anxiety among students**

The third objective of this study sought to establish the relationship between WhatsApp Use and WhatsApp Use Anxiety among Students in mixed day secondary schools in Kamenu ward Thika, Kenya. A simple scattered plot was conducted to establish the relationship between WhatsApp Use and WhatsApp Use Anxiety. Also, the Pearson's correlation coefficient analysis was conducted so as to realize this objective. The results are presented in Figure 5 and Table 11 respectively.

**Figure 3**

*Relationship between WhatsApp Use and WhatsApp Use Anxiety scattered plot*



As seen in Figure 5, the data showed uphill pattern from left to right. The inspection of the scatter plot was conducted in order to evaluate the assumption of homoscedasticity and assess the linear association between WhatsApp use anxiety levels and WhatsApp use levels. The outcome of the inspection of the scatter plot demonstrated that the assumption of homoscedasticity was met and that a linear (0.136) association existed between WhatsApp use and WhatsApp Use Anxiety surveys.

**Table 11*****Hypothesis testing on the relationship between WhatsApp use and WhatsApp Use Anxiety***

H<sub>0</sub>: The relationship between WhatsApp use and WhatsApp use anxiety is insignificant

H<sub>1</sub>: The relationship between WhatsApp use and WhatsApp use anxiety is significant

		WhatsApp Use	WhatsApp Use Anxiety
WhatsApp Use	Pearson Correlation	1	.369**
	Sig. (2-tailed)		.000
	N	328	328
WhatsApp Use Anxiety	Pearson Correlation	.369**	1
	Sig. (2-tailed)	.000	
	N	328	328

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

Table 11 revealed findings of Pearson product-moment correlation analysis. The results indicated that there was a moderate positive relationship between WhatsApp Use and WhatsApp Use Anxiety among students in mixed day secondary schools in Kamenu ward Thika, Kenya ( $r = .369^{**}$ ;  $P = .000$ ), since the P value ( $.000$ )  $\leq 0.05$ , indicating a significant relationship between the two variables hence we accept the alternative hypothesis( H<sub>1</sub>) and reject the null hypothesis (H<sub>0</sub>). As WhatsApp use increases, the WhatsApp use anxiety also increases among the students.

#### **4.8 Limitations of the study**

Limitations in the research include the challenges the researcher encountered and how they are fixed and the data is collected. In the current study, major challenge experienced was to get all streams of students' classes available to fill and complete questionnaires due to the school tight programs. After approaching the school principals, the researcher requested for one teacher who could assist in distributing the interval numbers for picking the sample students, assembling

them in one hall for the data collection. The help of the two research assistances worked wonders. The students were seated, explained why they were picked from the bigger number and the consent form, questionnaire about research was distributed and explained in detail. The students picked from the bigger group express dissatisfaction but the research explained to them the information given was not to victimize them but was to be used purely on academic work and was to be confidential and no name was to be written on the questionnaire. It took the researcher five days to get the questionnaires filled and completed from the two sampled schools.

#### **4.9 Chapter Summary**

This chapter gave the outcomes of the study. It presented the response rate of the research respondents, it showed the demographic information of respondents, the reliability statistics of the scales, the findings in line with the respective objectives of the research which were; to examine what extent is WhatsApp use levels among Students in Mixed Day Secondary Schools, to measure the levels of WhatsApp use anxiety of among Students in Mixed Day Secondary Schools, and to establish the relationship between WhatsApp use and WhatsApp use anxiety among Students in Mixed Day Secondary Schools in Kamenu ward Thika, Kenya. The next chapter focuses on the discussions

## **CHAPTER FIVE**

### **DISCUSSION**

#### **5.1 Introduction**

This chapter discusses the findings from the analysis. The conversations are conducted in accordance with the study's objectives, which are to examine WhatsApp use levels, WhatsApp use anxiety levels, and the relationship between WhatsApp use and WhatsApp use anxiety among students in mixed day secondary schools in Kamenu Ward, Thika, Kenya. The chapter revisits to the theoretical and conceptual foundation before concluding with a chapter summary to see if the assumptions of the study are verified by the study findings.

#### **5.2 Participants' Demographic Characteristics**

Less than 1% of the respondents are between ages 20-21 years. Male students constituted 53% of the total students who reported in this study. The classes response were normally distributed in the study with each class constituting more than 20% and less than 30% and thus making the data unbiased towards a particular class. Computers are less popular among students in these specific mixed day schools with regard to WhatsApp access point with less than 3% usability. Students tend to spend between 1 to 2 hours and 30 min to 1 hour on WhatsApp, this is show by close percentages dominance with this those two intervals reporting 30.8% and 26.5% respectively of the respondents in Mixed Day Secondary Schools in Kamenu ward Thika, Kenya.

This study agrees with the findings of Meenakshi et al. (2019) who reported that majority of students (208) reported to use WhatsApp on their phones while 22 of them used WhatsApp on their tablets. This shows that students mainly use the phones to access WhatsApp, followed by tablet, laptop and then computer.

### **5.3 WhatsApp use levels among Students in Mixed Day Secondary Schools in Kamenu ward Thika, Kenya**

The initial goal was to examine the extent of WhatsApp use among students at mixed-day secondary schools in Kamenu Ward, Thika Kenya. findings revealed that 83% of the students score high level of WhatsApp, while less than 1% of the students in Mixed Day Secondary Schools in Kamenu ward Thika Kenya, had low level of WhatsApp Use. Based on this finding, it is evident that the students in Mixed Day Secondary Schools in Kamenu ward Thika strongly make use of WhatsApp for different reasons. This high use of WhatsApp among the students is a matter of concern, as this may distract students from learning both in school and at home.

WhatsApp use among students in secondary school possibly facilitates knowledge such that it helps students to have access to various knowledge documents and as well providing opportunities for distance learning (Lantaron, et al.2022). Bruno (2020) argues that the social avenues such as WhatsApp may enrich students with knowledge and equip them to become great agents of transformation in society. However, an extreme use of WhatsApp among student could interfere with students' learning in school. Also, this may lead to lack of full concentration in their learning therefore contribute to poor academic performance due to possible interference of negative messages on their emotions and feelings (Froese et al. 2012).Kuss and Griffiths (2011) affirm that students who overuse WhatsApp are likely to slack in studies consequence of too much engaging in an online social interaction.

These findings of the High use of WA (83%) in the current study consistent with those of Meenakshi et al. (2019) in India who reported high usage of WhatsApp among female students, 208 acknowledged. The findings also corroborate with the findings of Bruno and Lawyer (2020) in Cameroon; was reported that the use of WhatsApp significantly affected the students due to a high level of usage (82.22%) of WhatsApp among the students. The findings agree also with the

study conducted by Mwangi (2017) in Kenya, and reported that 98.5% from 167 participants were at high level WhatsApp use.

The study concluded that mixed day secondary school students in Kamenu ward Thika, Kenya has high level of WA usage and the usage is abused and therefore moderation measure are necessary when they are engaging on WhatsApp.

#### **5.4 Levels of WhatsApp Use Anxiety among Students in Mixed Day Secondary Schools in Kamenu ward Thika, Kenya**

The second goal was to measure WhatsApp use anxiety levels among students in Kamenu ward, Thika, Kenya, revealed that close to 81% (80.8%) of respondents experienced severe anxiety. This means that the use of WhatsApp has shown to develop anxiety among the users. This outcome calls for an urgent concern on the severity and high levels of WhatsApp use anxiety among the students. Possibly, students are prone to experiencing anxiety from the use of WhatsApp when messages do not favour them, and when no one is available to engage them on WhatsApp, anxiety also creeps in. Waweru (2018) amplifies this by asserting that the fears of being out of WhatsApp communication usually paves ways for anxiety among some students, and this interfere with student's life as well as academic activities. Thus, this WhatsApp platform has the potential to have new physiological, psychological, and societal effects on the users.

WhatsApp use anxiety is an intense fear and worrying experienced while interacting on WhatsApp which interferes with a student's daily activities. Kumar (2018) alludes that the mental health stress emanating from the use of WA has become major concern on young adults. Due to extreme use and interactions on WA, students' emotions are affected by the communications taking place; news which can range from gladness, sadness, disgust shock and rage build up anxiety (Qounsar &Parveen, 2018).

These findings relate with the findings by Sharma and Shukla (2016) in India, which examined the impact of social messenger especially WhatsApp on youths. It was established that majority (80%) of the youth who used WA to chat frequently were found to have high level of anxiety. Similarly, in India, the findings of this current study corroborated the study by Kaushik Nag et al. (2019), in India. This study reported Anxiety was on the rise among high school students, in which had mild anxiety (49.4%), moderate anxiety (43.3%), and severe anxiety (7.3 percent) was a matter of concern (Kaushik Nag, 2019). The students' average anxiety score was 16.90-+9.0.

The findings of this study are similar with the study by Nyongesa et al. (2019) in Kenya. Findings indicated that 58% of secondary school students agreed that WhatsApp use increases stress, anxiety, depression and misery, 34% disagreed, while 8% were not sure. Duley (2015) alluded that a lot of anxious personality disorders were caused by spending too much time online on phone.

The study concluded that mixed day secondary school students in Kamenu ward Thika, Kenya spend much time on WA and this has developed WhatsApp anxiety level (80%) and therefore moderation measure to curb WhatsApp use anxiety level need to be addressed and positive use of WA educated to students engaging on WhatsApp.

### **5.5 Establishing the relationship between WhatsApp use and WhatsApp use anxiety among Students in Mixed Day Secondary Schools in Kamenu ward Thika, Kenya**

The outcome showed that there was a moderate positive relationship between WhatsApp Use and WhatsApp Use Anxiety among students in mixed day secondary schools in Kamenu ward Thika, Kenya ( $r = .369^{**}$ ;  $P = .000$ ), since the P value ( $.000 \leq 0.05$ ), indicating a significant relationship between the two variables. This finding implies a direct relationship; which means that as WhatsApp use among student's increases, WhatsApp use anxiety also

increases among the students. This possibly demonstrates that the students do not only use WhatsApp for academic purposes, but also for other engagements such as keeping in touch with friends and relatives,

It is also possible that students who do not have the finance to subscribe to data bundle so as to access WhatsApp may feel out of touch with others, and the fear of missing out (FOMO) may also enhance some degrees of anxiety. Also, when expectations are not met in chatting, such as having a reciprocated response, and the viewing and commenting on status from others, anxiety may creep in. In spite of the psychological challenges that may emanate from the use of WhatsApp among students, one may hardly refute the importance of WhatsApp use. Purkayastha and Chanda (2018) affirm this by stating that WhatsApp Use has made human relationships much easier such that people are able to socialize, share real time information and exchange ideas. However, Waweru (2018) contends that uncontrolled use of WhatsApp among students may create WhatsApp use behaviour such as chatting in class, checking on messages during class time, and the fears of being out of communication usually generate anxiety among some students.

The findings of this study confirm the findings by Wood and Scott (2016) in the UK. Although their study focused on social media use and anxiety. They established that higher social media usage was positively and significantly correlated with anxiety ( $r = .24, p.001$ ). It was also found that an increased anxiety levels were linked to more general uses of social media ( $r = .21, p.001$ ). The study found that kids who spend a lot of time on social media are more likely to acquire anxiety, which, if left untreated, can lead to serious mental health and academic problems.

The findings of this current study are likewise similar to those of Ooko (2021) in Kenya, who investigated the association between problematic smartphone use and social anxiety among

USIU students. There was a significant positive connection ( $r=0.222$ ,  $P=0.02$ ) between WhatsApp use and high social anxiety. It is clear that students' excessive usage of WhatsApp causes psychological issues such as anxiety.

## **5.6 Revisiting the Theoretical Framework**

This study used two theories which are; Cognitive Behavioural Theory (CBT) and Use and Gratification Theory (UGT). Based on the Cognitive Behavioural Theory, Beck (1979) posited that a person's anxiety is caused by a conflict of thoughts and feelings experienced from different situations and avenues. Anxiety is an emotional state marked by high levels of tension and a never-ending stream of worried thoughts. These thoughts can lead to physical changes in the body, high blood pressure, and other medical problems. Beck (1979) strongly argued that peoples' emotions and behaviours were influenced by the perceptions they have over the event or situation taking place. This means that the individual interpretation of an event affects their emotions, behaviour and physiological responses (Beck, & Fleming, 2021). Hence, anxiety can be formed when a human person has a negative perception of the self, a gloomy outlook on the future and the world. This theory was utilized in the study to understand whether WhatsApp Use among students generate anxiety.

Additionally, Use and gratification theory (UGT) focuses on understanding what mass communication do to the audience and why humans choose the kind of mass media they use. Katz et al. (1973) affirmed that people have both social and psychological needs which were met by the kind of mass media they use. The reason people subscribe to various social media platforms included wasting time, entertainments, surveillance and communication. Blumberg, Kats and Li (1974; 2005) also stated that these reasons are seen to be the needs to be met by humans. He classified these needs as; cognitive needs, affective needs, personal integrated needs,

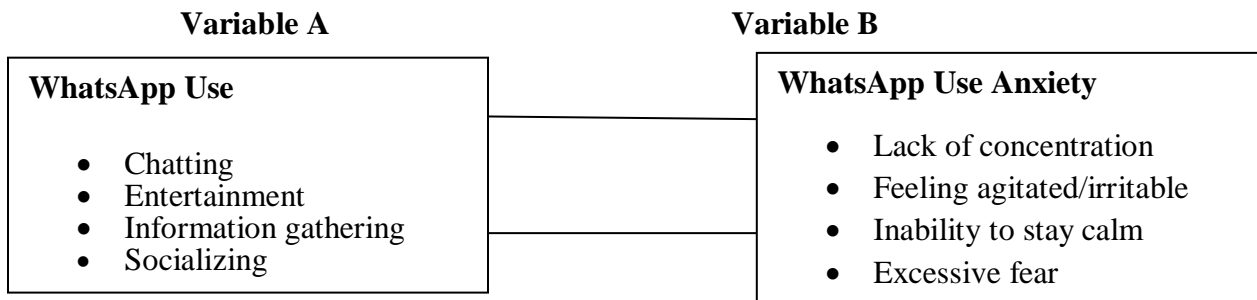
social integrated needs, stress release needs, and medium appeal needs were among the different needs classified. This research has made use of the Cognitive Behavioural Theory (CBT) and Use and Gratification Theory (UGT) in understanding the phenomenon under investigation which indicated that the two variables of the current study were related. The correlational outcome ( $r = .369^{**}$ ;  $p = .000, \leq 0.05$ ) was positively significant among students in mixed day secondary schools in Kamenu Ward, Thika Kenya. The outcomes of this quantitative correlational study did not bring any change on the theoretical framework of the study. The two theories of this study are therefore, relevant and they informed this research appropriately.

#### 4.7 Revisiting the Conceptual Framework

This study investigated relationship between WhatsApp Use and WhatsApp Use Anxiety among Students in Mixed Day Secondary Schools – Kamenu Ward Thika, Kenya. This study had initially proposed that WhatsApp Use to be variable A, and WhatsApp Use Anxiety as variable B, and envisaged a possible relationship between WhatsApp Use and WhatsApp Use Anxiety.

**Figure 4**

*Relationship between WhatsApp Use and WhatsApp Use Anxiety*



*Source: Njeri, 2024*

As demonstrated in Figure 3 above, this study found that there was a moderate positive relationship ( $r = .369^{**}$ ;  $p = .000, \leq 0.05$ ) between WhatsApp Use and WhatsApp Use Anxiety.

The model depicted that; the higher the WhatsApp Use, the higher the WhatsApp Use Anxiety. This therefore confirmed the initial proposed conceptual framework of this study

## **5.8 Chapter Summary**

This chapter conducted discussions based on the findings of the examined data and the respective study objectives. The chapter also reviewed the theoretical and conceptual frameworks. The next chapter focuses on the study's summary, results, and recommendations.

## CHAPTER SIX

### SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

#### 6.1 Introduction

This chapter provides a summary of the findings and conclusions. It provides additional policy and future research recommendations.

#### 6.2 Summary of findings

This study focused on the relationship between WhatsApp use and WhatsApp use anxiety among Students in Mixed Day Secondary Schools in Kamenu ward Thika, Kenya. Findings indicated less than 1% of the respondents are between ages 20-21 years. Male students constituted 53% of the total students who reported in this study. The classes response were normally distributed in the study with each class constituting more than 20% and less than 30% and thus making the data unbiased towards a particular class. Computers are less popular among students in their specific mixed day schools with regard to WhatsApp access point with less than 3% usability. Students tend to spend between 1 to 2 hours and 30 min to 1 hour on WhatsApp; this is shown by close percentages dominance with this those two intervals reporting 30.8% and 26.5% respectively of the respondents in Mixed Day Secondary Schools in Kamenu ward Thika, Kenya.

According to the first goal of this study, findings revealed that 83.2% of the students scored high on WhatsApp use while less than 1% of the students in Mixed Day Secondary Schools in Kamenu ward Thika Kenya, had low level of WhatsApp Use.

Based on the second objective, it was revealed that close to 81% (80.8%) of respondent's experienced severe anxiety.

The third objective of this study established that there was a relationship between WhatsApp Use and WhatsApp Use Anxiety among students in mixed day secondary schools in Kamenu ward Thika, Kenya ( $r = .369^{**}$ ;  $P = .000, \leq 0.05$ ).

### **6. 3 Conclusion**

This study investigated the relationship between WhatsApp use and WhatsApp use anxiety among Students in Mixed Day Secondary Schools in Kamenu ward Thika, Kenya. It was guided by three objectives namely examining WhatsApp use levels, measuring WhatsApp use anxiety and establishing the relationship between WhatsApp use and WhatsApp use anxiety among students in mixed days schools in Kamenu ward Thika.

On examining the WhatsApp use levels among students in this area of study the findings from the likert scale shows that 83.2% of the respondents were recorded as high level users of this particular application from the finding it is true to say that almost 90% of the students in Mixed day school in Kamenu ward had a high levels of WhatsApp use

Researcher used the likert scale to measure the levels of WhatsApp use anxiety, 81% of the respondents indicated that their WhatsApp use anxiety levels were rated as severe, from the finding it is true to say that almost 90% of the students in Mixed day school in Kamenu ward had a severe levels of WhatsApp use anxiety.

There is a positive correlation between the WhatsApp use levels and WhatsApp Use anxiety levels, with a correlation coefficient of 0.136, from the scatter plot the concentration points is evident in levels between 50 to 70 on use level corresponding to the Use anxiety levels which was between 60 to 80, it is true to conclude that WhatsApp use level is positively and linearly contributing to WhatsApp use anxiety levels.

## 6.4 Recommendations of the Study

The study made the following recommendations;

**Students in mixed day secondary schools:** This study recommends that the students in mixed day secondary schools in Kamenu ward Thika, Kenya, who are at high level of WhatsApp Use and severe level of WhatsApp Use Anxiety who majority are categorised in form one and two be helped in counselling and psychological assessments so as to possibly identify issues that could be responsible for the high use.

**The School Administration:** The school administrations of mixed day secondary schools in Kamenu ward Thika should intensify their ban on mobile phone usage in school. This may facilitate more effective strategy in helping the students on the use of WhatsApp that may not be pathological.

**Counselling Psychology Practitioners:** Counselling psychology practitioners may be called upon to give effective counselling services to the students who may be experiencing WhatsApp use anxiety especially on the male students who are the most likely victim of WhatsApp use anxiety. The counselling psychologists could organize seminars on psychological themes so as to widen the students' understanding about mental health issues that may emanate from extreme WhatsApp use. They could be educated on the relationship between WhatsApp use and WhatsApp use anxiety.

**Parents:** parents should regulate the amount of time the students are spending on the their mobile phones at home and provide alternative to mobile phones that may boost the child's overall development.

## **6.5 Recommendations for future research**

This study proposes the following areas for future research, and they are presented as follows:

From the challenges the researcher encountered during the data collection, I do recommend the same study to be carried out but with a different data collection approach. For instance, a lot of information was left out, our subject would give more information if open-ended questionnaires were used. The time of the study is significant to be considered, this is so because under stressed conditions the students' responses were subject to biasness.

I strongly believe that to validate these findings, a more comprehensive study of the same would be very ideal. This study was in an environment where the students are less exposed to mobile gadgets and their use time was at most 2 hours. The levels reported by the findings are a little bit extreme and may be caused by other factors. To dispute this finding, carrying out this study in secondary schools where mobile usage is encouraged may give more information on the relationship between WhatsApp use levels and WhatsApp use anxiety levels.

## REFERENCE

- Abdulla, J. M. D (2017). The Impact of Using social media and Internet on Academic Performance: Case Study Bahrain Universities. *EAI Endorsed Transactions on Scalable Information Systems* 4 (13). 12- 2016 - 01 2017 e2.
- Adu-Kumi, B. (2016). *Sexuality going viral: using WhatsApp as a site for sexual exploration among college students in Ghana.*
- Adwas, A. A., Jbireal, J. M., &Azab, A. E. (2019). Anxiety: Insights into Signs, Symptoms, Etiology, Pathophysiology, and Treatment. *East African Scholars Journal of Medical Sciences*, 2(10), 580-591.
- Ahad, A. D., & Lim, S. M. A. (2014). Convenience or nuisance? The ‘WhatsApp ‘dilemma. *Procedia-Social and Behavioural Sciences*, 155, 189-196.
- Ahmad, A., &Cavus, N. (2018). The Efficacy of Employing Social Media for Educational Practice in the Unrest Regions of the World. *Journal of Learning and Teaching in Digital Age*, 3(2), 22-26.
- Ahrberg, K., Dresler, M., Niedermaier, S., Steiger, A., & Genzel, L. (2012). The interaction between sleep quality and academic performance. *Journal of psychiatric research*, 46(12), 1618-1622.
- Alkhatnai, M. (2019). Instant mobile messaging (WhatsApp) and teaching translation: views elicited from Saudi translation teachers and students. *International Journal of English Linguistics*, 9(5), 98.
- AlAzzam, M., Abuhammad, S., Abdalrahim, A., &Hamdan-Mansour, A. M. (2021). Predictors of Depression and Anxiety Among Senior High School Students During COVID-19 Pandemic: The Context of Home Quarantine and Online Education. *The Journal of School Nursing*, 1059840520988548.
- Ali, M. F., Kundra, S., Alam, M. A., &Alam, M. (2021). Investigating stress, anxiety, social support and sex satisfaction on physical education and sports teachers during the COVID-19 pandemic. *Heliyon*, 7(8), e07860.
- Ali, M. S. S., &Kootbodien, A. (2017). The effectiveness of whatsapp as an interpersonal communication medium among Abu Dhabi university students. *International Journal of Media, Journalism and Mass Communications*, 3(1), 11-19.
- Aluh, D. O., Chukwuobasi, T., &Mosanya, A. U. (2019). A cross-sectional survey of Social Media Anxiety among students of University of Nigeria. *BioRxiv*, 666701.

- Amry, A.B. (2014, August). The Impact of WhatsApp Mobile Social Learning on the Achievement and Attitudes of Female Students Compared with Face-to-Face Learning in the Classroom. *European Scientific Journal*.10(22), pp. 116-136.
- Anireh, U. N., &Amadi, E. A. (2020). WhatsApp an Innovative Research Collaboration Tool for Institutions of Higher Learning in Rivers State.
- Appiah, M. K. (2016). Influence of WhatsApp on study habit of university students in Ghana. *International Journal of Research in Economics and Social Sciences*, 6(3), 280-292.
- Abend |& Gabriel. (2013), *The Meaning of Theory. Sociological Theory; Swanson, Richard A. Theory Building in Applied Disciplines. San Francisco: 26 (June 2008) 173–199 CA: Berrett-Koehler Publishers*
- Ardiyansyah, R. (2019). The Major Character Anxiety Reflected in Coetzee’s Disgrace (*Doctoral dissertation, UNNES*).
- Asare-Donkoh, F. (2018). Impact of social media on Ghanaian High School students. *Library Philosophy and Practice*, 0\_1-33.
- Atiso, K., &Kammer, J. (2018). *User beware: Determining vulnerability in social media platforms for users in Ghana*.
- Awada, G. (2016). Effect of WhatsApp on critique writing proficiency and perceptions toward learning. *Cogent Education*, 3(1), 1264173.
- Babu, C., & Kumar, K. R. (2018). Effects of WhatsApp on psychological, physical and personal self: a health perspective. *International Journal of Creative Research Thoughts (IJCRT)* 1812255 (6), 2: 2320-2882
- Bano, S., Cisheng, W., Khan, A. N., & Khan, N. A. (2019). WhatsApp use and student's psychological well-being: Role of social capital and social integration. *Children and Youth Services Review*, 103, 200-208.
- Bano, S., Cisheng, W., Khan, A. N., & Khan, N. A. (2019). WhatsApp use and student's psychological well-being: Role of social capital and social integration. *Children and Youth Services Review*, 103, 200-208.
- Barhoumi, C. (2015). The Effectiveness of WhatsApp Mobile Learning Activities Guided by Activity Theory on Students' Knowledge Management. *Contemporary Educational Technology*, 6(3), 221-238.
- Barrense-Dias. et al., (2019). Does personal social media usage affect efficiency and well-being? *Computers in Human Behaviour* p. S12.Brooks, S., 2015. 64(2) *Journal of Adolescent Health*, 46, pp.26-37.

- Beck, A. T. (2019). A 60-year evolution of cognitive theory and therapy. *Perspectives on Psychological Science*, 14(1), 16-20. <https://doi.org/10.1177/1745691618804187>
- Beck, A. T. (Ed.). (1979). *Cognitive therapy of depression*. Guilford press.
- Beck, A. T., Epstein, N., Brown, G., & Steer, R. A. (1988). An inventory for measuring clinical anxiety: psychometric properties. *Journal of consulting and clinical psychology*, 56(6), 893.
- Beck, A. T., Finkel, M. R., & Beck, J. S. (2020). The theory of modes: Applications to schizophrenia and other psychological conditions. *Cognitive Therapy and Research*, 1-10.
- Beck, J. S. *History of Beck Institute*, Part Three: 2021 and beyond.
- Beck, J. S., & Fleming, S. (2021). A Brief History of Aaron T. Beck, MD, and Cognitive Behaviour Therapy. *Clinical Psychology in Europe*, 3(2), 1-7.
- Becker, M. W., Alzahabi, R., & Hopwood, C. J. (2013). Media multitasking is associated with symptoms of depression and social anxiety. *Cyberpsychology, behaviour, and social networking*, 16(2), 132-135.
- Bere, A. (2013). *Utilising m-learning for enhancing student participation at a South African university of technology*.
- Bhatt, M. A., & Arshad, M. (2016). Impact of WhatsApp on youth: A sociological study. *Social Sciences*, 4(02), 2016.
- Bhatt, M. A., & Arshad, M. (2016). Impact of WhatsApp on youth: A sociological study. *Social Sciences*, 4(02), 2016.
- BlomfieldNeira, C. J., & Barber, B. L. (2014). Social networking site use: Linked to adolescents' social self-concept, self-esteem, and depressed mood. *Australian Journal of Psychology*, 66(1), 56–64. <https://doi.org/10.1111/ajpy.12034>
- Bouhnik, D., & Mor, D. (2014). WhatsApp Goes to School: Mobile Instant Messaging between Teachers and Students. *Journal of Information Technology Education Research*, 13, 217-231.
- Bruno, L. E. (2020). Teacher Readiness in Adapted Physical Education: Teaching the “Able,” Not the “Label”. *Journal of Physical Education, Recreation & Dance*, 91(4), 14-21.
- Bruno, B., & Lawyer, D. B. (2020). The effect of WhatsApp use on student's-emotional development and academic achievement. *European Journal of Education Studies*.
- Brown, T. A., & Barlow, D. H. (2014). *Anxiety and related disorders interview schedule for DSM-5 (ADIS-5)-adult and lifetime version: Clinician manual*. Oxford University Press.

- Centres for Disease Control and Prevention. (2015). *Youth risk behaviour survey data*. Retrieved June, 1, 2019.
- Chassiakos, Y.R., Radesky, J., Christakis, D., Moreno M.A., & Cross, C. (2016). Children and adolescents and digital media. *Pediatrics*, 138(5).
- Chou, H.-T. G., & Edge, N. (2012). “They are happier and having better lives than I am”: the impact of using Facebook on perceptions of others’ lives. *Cyberpsychology, Behaviour and Social Networking*, 15(2), 117–121. <https://doi.org/10.1089/cyber.2011.0324>
- Church, K., & De Oliveira, R. (2013, August). What's up with WhatsApp? Comparing mobile instant messaging behaviours with traditional SMS. In *Proceedings of the 15th international conference on Human-computer interaction with mobile devices and services* (pp. 352-361).
- Clement Babu, P., & Ravi Kumar, P. (2018). Effects of WhatsApp on psychological, physical and personal self: A health perspective. *Int J Creative Res thoughts*, 6, 235-9.
- Cohavi, A. (2013). How did WhatsApp become the strongest social network? Calcalist.
- Coleman, E., & O’Connor, E. (2019). The role of WhatsApp® in medical education; a scoping review and instructional design model. *BMC medical education*, 19(1), 1-13.
- Collins, H. (2010) *Creative Research: The Theory and Practice of Research for the Creative Industries*. New York: AVA Publications.
- Creswell, J. (2014). *Research design: Qualitative, quantitative, and mixed methods approach*. Loss Angeles: Sage Publications Ltd.
- Creswell, J.W. (2013a, 2014). *Research design: qualitative, quantitative and mixed methods approach*. California: Sage Publication.
- Crowther, D., & Lancaster, G. (2008). *Research Methods: A Concise Introduction to Research in Management and Business Consultancy*. Oxford: Butterworth-Heinemann.
- Deb, S. (2001). A study on the negative effects of academic stress. Paper presented at the *International Seminar on Learning and Motivation*, Kedah DarulAman, Malaysia
- Dean, B. (2021). *WhatsApp 2021 User Statistics: How Many People Use WhatsApp?* <https://backlinko.com/whatsapp-users>
- Deepa, M.&Priya, V.K. (2020). Impact of social media on mental health of students. *International Journal of scientific and Technology* 9(03) 2277-8616
- Díaz-Iso, A., Eizaguirre, A., &García-Olalla, A. (2019). Extracurricular activities in higher education and the promotion of reflective learning for sustainability. *Sustainability*, 11(17), 4521.
- Duley, L. (2012). *Effects of Social Media on Teens*. Ohio, USA: University of Ohio.

- Easterby-Smith, M, Thorpe, R. & Jackson, P. (2008). *Management Research*: London: Sage Publication.
- Espinoza, G. (2011). The pervasiveness, connectedness, and intrusiveness of social network site use among young adolescents. *Cyberpsychology, Behaviour & Social Networking*, 14(12), 705-709
- Etim, P. & Udosen, I. & Ema, I. (2016). *Utilization of Whatsapp and Students' Performance in Geography in Uyo Educational Zone, Akwa Ibom State*. 5. 2349-5219.
- Fathima, F., Priya, V. V., & Gayathri, R. (2019). Social media and anxiety-A survey. *Drug Invention Today*, 12(9).
- Fatiregun, A. A., & Kumapayi, T. E. (2014). Prevalence and correlates of depressive symptoms among in-school adolescents in a rural district in southwest Nigeria. *Journal of adolescence*, 37(2), 197-203.
- Fernández-Robin, C., Yáñez, D., & McCoy, S. (2019). Intention to use whatsapp. In *Artificial Intelligence-Scope and Limitations. IntechOpen*. <https://www.intechopen.com/predownload/64306>
- Froese, A. D., Carpenter, C. N., Inman, D. A., Schooley, J. R., Barnes, R. B., Brecht, P. W., & Chacon, J. D. (2012). Effects of classroom cell phone use on expected and actual learning. *College Student Journal*, 46(2), 323-332.
- George, A., Preetha, S., & Pramod, S. (2018). Whatsapp Use Behaviour in Relation to Social Interaction Anxiety and Personality among Students. *International Journal of Engineering & Technology*, 7(2), 1071-1077.
- George, A., Preetha, S., & Pramod, S. (2018). Whatsapp Use Behaviour in Relation to Social Interaction Anxiety and Personality among Students. *International Journal of Engineering & Technology*, 7(2), 1071-1077.
- Gicheru, M. (2014). 67% Of Mobile Phones Sold in Kenya are Smartphones. *Africa's Technology News Leader*.
- Grant, C., & Osanloo, A. (2014). *Understanding, selecting, and integrating a theoretical framework in dissertation research*: Creating the blue print for your house. December 2014.
- Gurikar (2015). Information Technology Usage Scenario in Academic Libraries of Higher Education in Chhattisgarh: Challenges and Opportunities. *Journal of Library & Information Technology*. 4(35), pp. p273-280
- Hallebone, E. & Priest, J. (2009). *Business and Management Research: Paradigms and Practices* Palgrave Macmillan.

- Han, T., & Keskin, F. (2016). Using a mobile application (WhatsApp) to reduce EFL speaking anxiety. *First Education and Learning Research Journal*, 12, 29-50.
- Heale, R., & Twycross, A. (2015). Validity and reliability in quantitative studies. *Evidence-based nursing*, 18(3), 66-67.
- Hinduja, S., & Patchin, J. W. (2013). Social Influences on Cyberbullying Behaviors Among Middle and High School Students. *Journal of Youth and Adolescence*, 42(5), 711-722.
- Hooda, M., & Saini, A. (2017). Academic anxiety: an overview. *Educational Quest*, 8(3), 807-810.
- Howe, C. (2012) Neuroscience and Knowledge Acquisition in Curriculum context: Modelling conceptual development in school science. *British Journal of Educational Psychology Monograph Series*, (11) 8 pp. 83-93.
- Hussain, Z., Griffiths, M. D., & Sheffield, D. (2017). An investigation into problematic smartphone use: The role of narcissism, anxiety, and personality factors. *Journal of behavioral addictions*, 6(3), 378-386.
- Ibrahim, J., Ros, R. C., Sulaiman, N. F., Nordin, R. C., Ze, L., & Yuan. (2014). Positive Impact of Smartphone Application: Whatsapp & Facebook for Online Business Jamaluddin Ibrahim, Rafidah Chee Ros, NurulFaatihah Sulaiman, Roszaini Che Nordin, & Li Ze. *International Journal of Scientific and Research Publications*, 4(12), 01-04,
- Irfan, M., & Dhimmar, S. (2019). Impact of WhatsApp messenger on the university level students: a psychological study. *International Journal of Research and Analytical Reviews*, 6(1), 572-586.
- Irfan, M., & Dhimmar, S. (2019). Impact of WhatsApp messenger on the university level students: a psychological study. *International Journal of Research and Analytical Reviews*, 6(1), 572-586.
- January, J., Madhombiro, M., Chipamaunga, S., Ray, S., Chingono, A., & Abas, M. (2018). Prevalence of depression and anxiety among undergraduate university students in low- and middle-income countries: a systematic review protocol. *Systematic reviews*, 7(1), 1-5.
- James, D. (2022). Influence of social media on secondary school students' behaviour in Machakos sub-County, Machakos County, Kenya (*Doctoral Dissertation, Machakos University Press*).
- Johnson, Y. & George D. E. (2014). The Impact of Whatsapp Messenger Usage on Students Performance in Tertiary Institutions in Ghana: *Journal of Education and Practice* 5, (6). [www.iiste.org](http://www.iiste.org) ISSN 2222-1735 (Paper) ISSN 2222-288X (Online)

- Kabir, S.M.S(2018). *Method of data collection. Basic guidelines for research: An introductory approach for all discipline*. Bangladesh: Zone Publication.
- Kamaku, M. N., &Mberia, H. (2014). The influence of social media on the prevalence of sexual harassment among teenagers: A Case study of secondary schools in Kandara sub-county, Kenya. *International Journal of Academic Research in Business and Social Sciences*, 4(4), 420.
- Kumaran, P. (September, 2018) *Good morning WhatsApp messages rather no response to them is causing anxiety in students teachers are in panicmode/articleshow/65760024.cms*  
<https://bangaloremirror.indiatimes.com/author/author-kumaran-p-479249086.cms>
- Kapahi, A., Ling, C. S., Ramadass, S., & Abdullah, N. (2013). *Internet addiction in Malaysia causes and effects*.
- Karapanos, E., Teixeira, P., & Gouveia, R. (2016). Need fulfillment and experiences on social media: A case on Facebook and WhatsApp. *Computers in human behavior*, 55, 888-897.
- Kariuki, N. F. W. (2017). Use of WhatsApp as an organizational communication Platform: A case of Kenya’s Safaricom technology division (*Doctoral dissertation, United States International University-Africa*).
- Kariuki-Nyuthe, C., & Stein, D. J. (2015). Anxiety and related disorders and physical illness. *Comorbidity of mental and physical disorders*, 81-87.
- Kariuki, V.W ( 2010). *Uses and Gratifications of the Internet: a Survey Study of Mt. Kenya University and Gretsia University in Thika Municipality*. Unpublished Thesis. University of Nairobi.
- Katz, E., Blumler, J., &Gurevitch, M. (1974). Utilization of mass communication by the individual. In J. Blumler& E. Katz (Eds.), *The uses of mass communication: Current perspectives on gratifications research* (pp. 19–34). Beverly Hills, CA: Sage.
- Katz, E., Gurevitch, M., & Haas, H. (1973). On the use of the mass media for important things. *American Sociological Review*, 38, 164–181.
- Kaye, B.K. and Johnson, T.J. (2002), “Online and in the know: uses and gratifications of the web for political information”, *Journal of Broadcasting & Electronic Media*, Vol. 46 No. 1, pp. 54-71.
- Keles, B., McCrae, N., &Grealish, A. (2020). A systematic review: the influence of social media on depression, anxiety and psychological distress in adolescents. *International Journal of Adolescence and Youth*, 25(1), 79-93.

- Kessler, R. C., Amminger, G. P., Aguilar-Gaxiola, S., Alonso, J., Lee, S., & Ustun, T. B. (2007). Age of onset of mental disorders: a review of recent literature. *Current opinion in psychiatry*, 20(4), 359. doi:10.1109/CCECE.2006.277836
- Khoza, S. B. (2020). Students' Habits Appear Captured by WhatsApp. *International Journal of Higher Education*, 9(6), 307-317.
- Kibona, L., & Mgaya, G. (2015). Smartphones' effects on academic performance of higher learning students. *Journal of Multidisciplinary Engineering Science and Technology*, 2(4), 777-784.
- Kim, J., LaRose, R., & Peng, W. (2009). Loneliness as the cause and the effect of problematic Internet use: The relationship between Internet use and psychological well-being. *Cyberpsychology & behavior*, 12(4), 451-455.
- Kimemia, K. A., & Mugambi, M. M. (2016). *Social media and teenage pregnancy among students in secondary schools in Imenti North Sub-County, Meru County, Kenya*.
- Kibet, A., & Ward, S. (2018). Socially Networked Heterogeneity: The Influence of WhatsApp as a Social Networking Site on Polarisation in Kenya. *African Journalism Studies*, 39(4), 42–66. <https://doi.org/10.1080/23743670.2018.1537979>
- Kiplagat, P., & Ombiro, R. M. (2016). *Social media usage and academic performance in secondary schools, Kenya*.
- Kombo, D. K., & Tromp, D.A. 2006. *Proposal and thesis writing; an introduction*; 2nd reprint; Pauline Publication Africa; Kenya
- Kothari, C. R. (2004). *Research methodology: Methods and techniques*. New Age International.
- Krejcie, R. V., & Morgan, D. W. (1970). Determining Sample Size for Research Activities. *Educational and Psychological Measurement*, 607-610.
- Kumar, R., Sahu, G., Saxena, S. K., Rai, H. M., & Sagdeo, P. R. (2014). Qualitative evolution of asymmetric Raman line-shape for nanostructures. *Silicon*, 6(2), 117-121.
- Kumar, R. (2018). Effects of whatsapp on psychological, physical and personal self: a health perspective. *International Journal of Creative Research Thought*, 6(2), pp. 235-239
- Kuppuswamy, S., & Narayan, P. (2010). The Impact of Social Networking Websites on the Education of Youth. *International Journal of Virtual Communities and Social Networking (IJVCSN)*, 2(1), 67-79.
- Kuss, D. J., & Griffiths, M. D. (2011). Online social networking and addiction—a review of the psychological literature. *International journal of environmental research and public health*, 8(9), 3528-3552.

- La Hanisi, A., Risdiyany, R., DwiUtami, Y., & Sulisworo, D. (2018). The use of WhatsApp in collaborative learning to improve English teaching and learning process. *International Journal of Research Studies in Educational Technology*, 7(1), 29-35.
- Lazarsfeld, P. F. (1940). *Radio and the printed page; an introduction to the study of radio and its role in the communication of ideas*. New York: Dvelli, Sloan, Pearce
- Lantarón, S.B. Ruiz, D.Y., García-Perales, N. & Reche, C.I. (2022). *The Educational Use of WhatsApp. Sustainability*. (4) 10510.
- Lei, L. Y., Ismail, M. A., Mohammad, J. A., & Yusoff, M. (2020). The relationship of smartphone addiction with psychological distress and neuroticism among university medical students. *BMC psychology*, 8 (1), 97.
- Li, D. (2005). *Why Do You Blog: A Uses-And-Gratifications Inquiry into Bloggers' Motivations* (Master thesis, Marquette University, USA) Retrieved from [http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.1.1.HYPERLINK.y".91.67](http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.1.1.HYPERLINK.y)
- Madu, & Uwaebuka. (2017). Evaluation of WhatsApp Usage and Impact on Library and Information Science (LIS) Students' *Academic Experience in Federal Polytechnic, Ede, Nigeria*. 4.
- Maheswari, P. U. (2014). Frequency of using WhatsApp Messenger among College Students in Salem District, Tamil Nadu *International Journal of Computer Science and Mobile Applications*, 2(7), 12-22.
- Mangaleswaran, R. (2017). Fulfilling social relationship needs—a descriptive study on users of whatsapp. *Int J Interdiscip Res Res Arts Humanit*, 2, 175-181.
- Maslow, A. (1943). *A theory of human motivation*. *Psychological Review*, 50, 370-396. Retrieved: June, 2001, [HYPERLINK http://psychclassics.yorku.ca/Maslow/motivation.htm](http://psychclassics.yorku.ca/Maslow/motivation.htm)
- McQuail, D. (2011). *Mass communication theory (6th. Ed)*. Sage Publications Ltd.
- Meenakshi, T. Anitha, K. Lakshmi, (2019). Impact and Uses of WhatsApp Among College Students. *International Journal of Innovative Technology and Exploring Engineering (IJITEE)*(8) 11, 278-3075.
- Metz, C. (2016). *Forget Apple vs. the FBI: WhatsApp just switched-on encryption for a billion people*. *Wired business* 5th April.
- Mirembe, D. P., Lubega, J. T., & Kibukamusoke, M. (2019). Leveraging Social Media in Higher Education: A Case of Universities in Uganda. *European Journal of Open, Distance and E-learning*, 22(1), 70-84.
- Moshi, T. (2019). *Influence of Social Media on Learning Behaviour Among Secondary School Students in Moshi Municipality, Tanzania*. CUEA

- Mtega, W. P. (2021). *Using WhatsApp Messenger for improving learners' engagement in teaching and learning: a case of undergraduate students at the Sokoine University of Agriculture, Tanzania.*
- Mugenda, M., & Mugenda, A. G. (1999). *Research methods: Quantitative Approaches.* Nairobi: Acts Press
- Mugenda, O. M. & Mugenda, A. G. (2003). *Research Methods: Quantitative and Qualitative Approaches.* Nairobi: Acts Press.
- Muhoro, M. P. (2015). *Administrative Factors Influencing Students Performance In Kenya Certificate of Secondary Education In Public Day Secondary Schools In Thika West District, Kenya.*
- Munir, S., Gondal, A.Z., & Takov, V., (2019). *Generalized anxiety disorder.*  
<https://www.ncbi.nlm.nih.gov/books/NBK441870>
- Musa, A. S., Azmi, M. N. L., & Ismail, N. S. (2015). Exploring the uses and gratifications theory in the use of social media among the students of mass communication in Nigeria. *Malaysian Journal of Distance Education*, 17(2), 83-95.
- Mutua, W., (2011). *East Africa uptake of Face book among urban youth [online].* Retrieved, July 15th 2017-[blogs.net/Kenya/technology/east-Africa](http://blogs.net/Kenya/technology/east-Africa)
- Mwangi, S. (2017). WhatsApp: the new age illusion of friendships among Kenyan Young Adults. *In Digital Transformation in Journalism and News Media* (pp. 263-270). Springer, Cham.
- Nag, K., Ghosh, B., Datta, A., Karmakar, N., & Bhattacharjee, P. (2019). A cross-sectional study on the prevalence of anxiety among school students in Teliamura municipality area of Tripura. *Indian journal of psychiatry*, 61(5), 491–495.  
[https://doi.org/10.4103/psychiatry.IndianJPsychiatry\\_415\\_18](https://doi.org/10.4103/psychiatry.IndianJPsychiatry_415_18)
- Nakano, D., & Muniz, J. (2018). Writing the literature review for empirical papers. *Production*, 28.
- Ngalomba, S. (2020). *University World News. Using WhatsApp to enhance Online Learning.* African, Edition-24th April 2020.  
<https://www.universityworldnews.com/post.php?story=20200421102812987>
- Nkuba, M., Hermenau, K., Goessmann, K., & Hecker, T. (2018). Mental health problems and their association to violence and maltreatment in a nationally representative sample of Tanzanian secondary school students. *Social psychiatry and psychiatric epidemiology*, 53(7), 699-707.

- Njoroge, R. I. T. A. (2013). *Impacts of social media among the youth on behavior change: a case study of university students in selected universities in Nairobi, Kenya* (Doctoral dissertation, University Of Nairobi).
- Nyayieka, M, A., Nzyuko, S. & Nyagwenda, S. (2020). Prevalence of Clinical Depression and Anxiety among Adolescents in Selected Public Secondary Schools in Homabay County, Kenya. *African Journal of Clinical Psychology* (03), 01.
- Nyongesa, S. C., Kiprop, C., & Chumba, S. *School Strategies for Managing Social Media Influence on Students' discipline In Kenyan Secondary Schools*.
- Oh, H., Park, K., Yoon, S., Kim, Y., Lee, S. H., Choi, Y. Y., & Choi, K. H. (2018). Clinical utility of beck anxiety inventory in clinical and nonclinical Korean samples. *Frontiers in psychiatry*, 9, 666.
- Ogachi, M.F. (2011). *Relationship between depression and pathological internet use among university students in Kenya*. Nairobi: Kenyatta University.
- Ooko O. G (2021) A Thesis Submitted to the School of Humanities and Social Sciences. Master's Degree in Clinical Psychology. Relationship Between Problematic Smartphone Use And Social Anxiety Among University Students: A Case Of USIU, Africa.
- Orodho, J. A (2005). *Techniques of Writing Research Proposals and Reports in Education and Social Sciences*. Nairobi: Kanezja H.P Enterprises.
- Osborn, Tom L., Katherine E. Venturo-Conerly, Akash R. Wasil, Jessica L. Schleider, and John R. Weisz. "Depression and anxiety symptoms, social support, and demographic factors among Kenyan high school students." *Journal of Child and Family Studies* 29, no. 5 (2020): 1432-1443.
- Otieno, M.A., & Ochieng J. A. (2020). Impact of 100 Per Cent Transition Policy on Public Secondary Schools in Machakos Sub- County, Kenya: Focusing on Coping Strategies. *Journal of Education and Practice* 11 (24) 2222-1735.
- Otieno, D. O., & Akwala, A. (2018). Interactive Media as a socialization Agent: Influence of WhatsApp among Adolescents in Nairobi. *Journal of Digital Media & Interaction*, 1(2), 25-39.
- O'Hara, K. P., Massimi, M., Harper, R., Rubens, S., & Morris, J. (2014, February). Everyday dwelling with WhatsApp. In *Proceedings of the 17th ACM conference on Computer supported cooperative work & social computing* (pp. 1131-1143).
- Oyovwe-Tinuoye, G., & Adomi, E. E. (2019). WhatsApp and the 2019 Nigerian Library Association (NLA) election exercise. *Journal of Library Services and Technologies*, 1(2), 14-31.

- Patel, K. M. (2014). Customersatisfaction towards WhatsApp. Retrieved 23-07-2015, from <http://www.slideshare.net/Erchiragpatel/project-report-on-customer-satisfactiontowards-whatsapp>
- Parveen, A., &Qounsar, T. (2018). Inclusive education and the challenges. *National Journal of Multidisciplinary Research and Development*, 3(2), 64-68.
- Pfeiffer, C., Kleeb, M., Mbelwa, A., &Ahorlu, C. (2014). The use of social media among adolescents in Dar es Salaam and Mtwara, *Tanzania. Reproductive health matters*, 22(43), 178-186.
- Polit, D. F., & Beck, C. T. (2010). Generalization in quantitative and qualitative research: Myths and strategies. *International journal of nursing studies*, 47(11), 1451-1458.
- Pramod, S. K (2016). *WhatsApp Use Behaviour and Social Interaction Anxiety among Students*. Review of Research, 5, 10,1- 9
- Psychometric properties. *Journal of Consulting and Clinical Psychology*, 56, 893-897
- Purkayastha, N. &Chanda, A (2018). WhatsApp as a means of sharing information among LIS professionals of North-East India. A study. *International Journal of Research in Applied, Natural and Social Sciences*, 6(9), 69-82
- Raj, D. (2016, October). *Fighting Social Media Addiction*. Retrieved from [hyperlink "http://www.adweek.com/socialtimes/fight-social%20media%20addiction/5557/thread"](http://www.adweek.com/socialtimes/fight-social%20media%20addiction/5557/thread)<http://www.adweek.com/socialtimes/fight-social-media-addiction/5557/thread>
- Rattenbury, T. , Antti, , Lingyi, Ma & Eeva ,Raita,. (2012). *Habits make smartphone use more pervasive. Personal and Ubiquitous Computing*. (16) 105-114. 10.1007/s00779-011-0412-2.
- Ramanathan, R. (2008). *The role of organizational change management in offshore outsourcing of information technology services*. Florida: Universal Publishers.
- Ramya, M. R., Srikanth, S., &SurenderRangasamy, V. H. N. H. (2019). Prevalence of internet usage among selected professional college students in Puducherry. *National Journal of Research in Community Medicine*, 8(1), 15-19.
- Retrieved from [http://eujournal.org/index.php/esj/article/view File/3909/3700](http://eujournal.org/index.php/esj/article/view/File/3909/3700)
- Richard,H., & Haya, A. (2009).Examining student decision to adopt web 2.0technologies: theory and empirical tests. *Journal of computing in higher education*, 21(3), 183-198.
- Richmond, B. (2006). *Introduction to Data Analysis Handbook*. Academy for Educational Development.

- Rideout, V. (2016). Measuring time spent with media: the Common-Sense census of media use by US 8-to 18-year-olds. *Journal of Children and Media*, 10(1), 138-144.
- Samaha, M., & Hawi, N. S. (2016). Relationships among smartphone addiction, stress, academic performance, and satisfaction with life. *Computers in human behavior*, 57, 321-325.
- Sarker, G. R. (2015). Impact of Whatsapp messenger on the university level students: A sociological study. *International Journal of Natural and Social Sciences*, 2(4), 118-125.
- Sarwar, M., & Soomro, T. R. (2013). Impact of smartphone's on society. *European journal of scientific research*, 98(2), 216-226.
- Saunders, M., Lewis, P. & Thornhill, A. (2012). *Research Methods for Business Students*. Pearson Education Limited.
- Selvam, S.G. (2017). *Empirical research: A guide study*. Nairobi: Pauline Publication Africa
- Shafiq, S., Nipa, S. N., Sultana, S., Rifat-Ur-Rahman, M., & Rahman, M. M. (2021). Exploring the triggering factors for mental stress of university students amid COVID-19 in Bangladesh: A perception-based study. *Children and Youth Services Review*, 120, 105789.
- Shahid, S. (2018) Content Analysis of WhatsApp Conversations: An Analytical Study to Evaluate the Effectiveness of WhatsApp Application in Karachi. *International Journal of Media, Journalism and Mass Communications* 4, (1). 2018, PP 14-26 ISSN 2454-9479 <http://dx.doi.org/10.20431/2454-9479.0401002>.
- Shakir, T., Bhandari, N., Andrews, A., Zmitrovich, A., McCracken, C., Gadomski, J., ...& Jain, S. (2019). Do our adolescents know they are cyberbullying victims? *Journal of infant, child, and adolescent psychotherapy*, 18(1), 93-101.
- Sharma, G., & Pandey, D. (2017). Anxiety, depression, and stress in relation to academic achievement among higher secondary school students. *The International Journal of Indian Psychology*, 4(2), 82-89.
- Sheldon, P. (2008). The relationship between unwillingness-to-communicate and students' Facebook use. *Journal of Media Psychology*, 20(2), 67-75.
- Shill, M. (2011). Intersubjectivity and the ego. *Psychoanalytic Social Work*, 18(1), 1-22.
- Shrivastava, G., Kumar, P., Ojha, R. P., Srivastava, P. K., Mohan, S., & Srivastava, G. (2020). Defensive Modeling of Fake News Through Online Social Networks. *IEEE Transactions on Computational Social Systems*.
- Simon, M. K. (2011). *Dissertation and scholarly research: Recipes for success*. Seattle, WA, Dissertation Success, LLC.
- Simon, M. K., & Goes, J. (2013). Scope, limitations, and delimitations.

- Singh, M. K. K., & Samah, N. A. (2018). Impact of smartphone: A review on positive and negative effects on students. *Asian Social Science*, 14(11), 83-89.
- Soyturk, I., Schenker, J., & Memis, R. (2020). ARasch Analysis of the WhatsApp Usage Scale (WUS) in Turkish University Student Sample. *Conference Paper April 2020*. <http://researchgate.net/publication/343863112>
- Soyturk, I. & Memis, R. (2020). A Cross-Validation of the WhatsApp Usage Scale (WUS) *Conference Paper April 2018*. <http://researchgate.net/publication/343863371>
- Statista.(2021)<https://www.statista.com/statistics/611208/whatsapp-users-in-the-united-kingdom-uk-by-age-group/>.
- Steele, C. (2014, February 20). *What is WhatsApp? An explainer*. Retrieved October 20, 2016, from PCMag: <http://www.pcmag.com/article2/0,2817,2453710,00.asp>
- Steers, M.-L. N., Quist, M. C., Bryan, J. L., Foster, D. W., Young, C. M., & Neighbors, C. (2016). I want you to like me: Extraversion, need for approval, and time on Facebook as predictors of anxiety. *Translational Issues in Psychological Science*, 2(3), 283– 293. <https://doi.org/10.1037/tps0000082>
- Sharma, A., & Shukla, A. K. (2016). Impact of social messengers especially WhatsApp on youth-a sociological study. *International Journal of Advance Research and Innovative Ideas in Education*, 2(5), 367-375.
- Shikalepo, E. E. (2020). *Defining a Conceptual Framework in Educational Research*.<https://www.researchgate.net/institution/International-University-of-Management-Namibia>
- Smith, (2022). *Freud on Anxiety – Counseling: Mental Health Services* :4001 W Alameda Ave, Street 110, Burbank CA 91505
- Sultan, A. J. (2014). Addiction to mobile text messaging applications is nothing to “lol” about. *The Social Science Journal*, 51, 57–69.
- Tariq, W., Mehboob, M., Khan, M. A., Ullah, F. (2012), ‘The Impact of Social Media and Social Networks on Education and Students of Pakistan’, *International Journal of Computer Science Issues (IJCSI)*, Vol. 9, Issue 4, No 3, July 2012
- Tawiah, Y. S., Nondzor, H. E., & Alhaji, A. (2014). Usage of WhatsApp and voice calls (phone call): Preference of polytechnic students in Ghana. *Science Journal of business and Management*, 2(4), 103-108.
- Taylor, J. M., & Whalen, P. J. (2015). Neuroimaging and anxiety: The neural substrates of pathological and non-pathological anxiety. *Current psychiatry reports*, 17(6), 49.
- Thota, R., & Divatia, J. (2015). WhatsApp: What an app! *Indian Journal of Critical Care Medicine*, 19(6), 363.

- Thomas, A.S. (2012). Constructing conceptual frameworks: Building the route. In: Sharon, F.R. & Gretchen, B.R. *The research journey: Introduction to inquiry* (pp. 89). New York: Guilford Publications.
- Trizer, M. (2019). *Kenya Population and Housing Census Results*. Kenya National Bureau of Statistics.
- Tindell, D. R., & Bohlander, R. W. (2012). The use and abuse of cell phones and text messaging in the classroom: A survey of college students. *College teaching*, 60(1), 1-9.
- Tzuk, A. (2013). *Whatsapp has 350 million active users a month*. [in Hebrew] Calcalist. Retrieved October 23, 2013 from <http://www.calcalist.co.il/internet/articles/0,7340,L-3615097,00.html>
- Vaterlaus, J. M., Aylward, A., Tarabochia, D., & Martin, J. D. (2021). "A smartphone made my life easier": An exploratory study on age of adolescent smartphone acquisition and well-being. *Computers in Human Behavior*, 114, 106563.
- Wamuyu, P.K.(2020). *The Kenya Social Media Landscape: Trends and Emerging Narratives*, SIME lab, Nairobi
- Waweru, G. W. (2018). *Effects Of Social Media On Students Academic Performance In Tertiary Education Institutions In Thika Municipality, Kiambu County, Kenya* (Doctoral dissertation, University of Nairobi).
- Westbrook, D., Kennerley, H., Kirk, J., & Oxford Cognitive Therapy C. (2011). Basic theory, development and current status of CBT. An introduction to cognitive behaviours therapy: *Skills and applications*, 1-22.
- WhatsApp Voice Calling. (2015).
- Whiting, A., & Williams, D. (2013). Why people use social media: a uses and gratifications approach. *Qualitative market research: an international journal*.
- Wilson, J. (2010). *Essentials of Business Research: A Guide to Doing Your Research Project*. Sage Publications.
- Wolniewicz, C. A., Tiamiyu, M. F., Weeks, J. W., & Elhai, J. D. (2018). Problematic smartphone use and relations with negative affect, fear of missing out, and fear of negative and positive evaluation. *Psychiatry research*, 262, 618-623.
- Woods, H. C., & Scott, H. (2016). # Sleepy teens: Social media use in adolescence is associated with poor sleep quality, anxiety, depression and low self-esteem. *Journal of adolescence*, 51, 41-49.
- Woodcock, B., Middleton, A., & Nortcliffe, A. (2012). Considering the Smartphone Learner: an investigation into student interest in the use of personal technology to enhance their learning. *Student Engagement and Experience Journal*, 1(1), 1-15.

- World Health Organization, (2017). *Preventing suicide: a resource for media professionals*.  
who.int/gho/data/view
- Wyllie, T. (2021) *The Importance of Research Gaps*. M.Ed. Counselling:  
<https://www.researchgate.net/publication/348884217>
- Yan, H., Zhang, R., Oniffrey, T. M., Chen, G., Wang, Y., Wu, Y., . . . Moore, J. B. (2017).  
Associations among screen time and unhealthy behaviors, academic performance, and  
well-being in Chinese adolescents. *International Journal of Environmental Research and  
Public Health*, 14(6). doi:10.3390/ijerph14060596
- Yalom, I.D., ( 2019) *The Theory and Practice of Group Psychotherapy*, : Basic Books. Sixth  
Edition. New York.
- Yeboah, J., &Ewur, G. D. (2014). The impact of WhatsApp messenger usage on students'  
performance in Tertiary Institutions in Ghana. *Journal of Education and practice*, 5(6),  
157-164.
- Yeboah, J., &Ewur, G. D. (2014). The impact of WhatsApp messenger usage on students'  
performance in Tertiary Institutions in Ghana. *Journal of Education and practice*, 5(6),  
157-164.
- Yeboah, J., &Ewur, G.D. (2014). The impact of WhatsApp messenger usage on students'  
performance in Tertiary Institutions in Ghana. *Journal of Education and Practice*, 5(6),  
157-164.
- Yilmazsoy, B., Kahraman, M., &Utku, K. Ö. S. E. (2020). Negative aspects of using social  
networks in education: A brief review on WhatsApp example. *Journal of Educational  
Technology and Online Learning*, 3(1), 69-90.
- Zeidner, M., & Matthews, G. (2010). *Anxiety 101*. Springer Publishing Company.
- Zhang, X., Dimitriou, D., & Halstead, E. J. (2021). Sleep, anxiety, and academic performance: a  
study of adolescents from public high schools in China. *Frontiers in Psychology*, 12,  
2567.
- Ziemer, R. E., & Tranter, W. H. (2014). *Principles of communications*. John Wiley & Sons.
- Vygotsky, L. (1978). Interaction between learning and development. *Readings on the  
development of children*, 23(3), 34-41.

## APPENDICES

### Appendix A

#### Tangaza University College Informed Consent

The projects Title:

#### **Relationship between WhatsApp Use and WhatsApp Use Anxiety among Students in Mixed Day Secondary Schools – Kamenu Ward Thika West sub-county, Kenya**

- This research is being carried out by a Tangaza University College Master of Arts in Counselling Psychology student.
- The HOD Institute of Youth Studies has authorized it.
- There is no known risk to participants, and there is no deceit in the study. The study will take approximately 20-30 minutes to complete.
- The participant must complete a sequence of questions in order to complete the activity.
- All responses will be treated with the utmost discretion. The results of each participant will be presented in aggregate form rather than individually.
- Participation in this study is completely optional, and no monetary reward will be provided. Individuals who refuse to participate will not face any consequences, and all participants have the freedom to withdraw themselves and their data from the study at any time.

The researcher's name is: - **Pauline Wambui Jeri**

The researcher's position is: - **MA student**

Address and contact number of the College:

Tangaza university College, 15055-00509, Lang'ata Nairobi, Kenya.

Mobile Number: - 0720839259

Researcher's signature..... Date.....

**Statement to be signed by the Participant:**

1. I affirm that the organizer has clearly explained the project's nature and the variety of activities that I may be asked to participate in, and that I have received an information sheet. I certify that I have had ample opportunity to inquire about this project.
2. I realize that my participation is completely optional, and that I may withdraw at any time during the project for any reason.
3. By completing the Questionnaire, I accept to participate in this study.

Participant signature ..... Date.....

## Appendix B

### Questionnaire

Please answer the following questions

---

#### Section A: Demographic Information of Respondents

Using the box and the end of each question, TICK the answer that applies to you or what speaks well about you.

1. Gender

Male   
Female

2. Age

14---15years   
16 ---17years   
18----19years   
19----20years

3. You are in FORM?

Form 1  Form 2  Form 3  Form 4

4. I use WhatsApp on my 1.  Phone 2.  Laptop 3.  Computer 4.  Tablet

5. Time I spent on WhatsApp daily?

1. 30-1hr   
2. 1hr-2hrs   
3. 2hrs-3hrs   
4. 3hrs and above

#### Section B: Instrument to measure WhatsApp use (WUS)

Please read each statement and TICK a number 1,2,3,4 or 5 which indicates how much the statement applied to you over the past week. There are no right or wrong answers. Do not spend too much time on any statement. **The rating scale is as follows:**

1. Strongly Disagree, 2- Disagree, 3- undecided, 4 Agree, 5 strongly Agree.

	<i>Reason opinion use of WhatsApp</i>					
eee	WhatsApp is a useful tool for texting	1	2	3	4	5
7	WhatsApp is a good tool for sharing photos and videos	1	2	3	4	5
8	WhatsApp offers friendly interface	1	2	3	4	5
9	WhatsApp gives freedom to share information with other people	1	2	3	4	5
10	WhatsApp makes my life easy when I want to share my location	1	2	3	4	5

11	One of the reasons for using WhatsApp is to be cost free	1	2	3	4	5
12	WhatsApp helps me arrange meetings with my friends	1	2	3	4	5
	<i>Positive opinion use of WhatsApp</i>					
13	WhatsApp increases the sense of belonging to community	1	2	3	4	5
14	Using WhatsApp makes me happy when I share my emotions	1	2	3	4	5
15	WhatsApp usage makes me more social within the community	1	2	3	4	5
16	I can share easily my opinions that I have never shared in face-to-face meetings.	1	2	3	4	5
	<i>Negative opinion use of WhatsApp</i>					
17	WhatsApp is timely consuming	1	2	3	4	5
18	I feel using WhatsApp avoids me from face-to-face meeting	1	2	3	4	5
19	Spending on WhatsApp affects my job/study negatively	1	2	3	4	5

*Developed by Soy Turk&Memis (2020)*

The highest score a participant could get is 70 and the lowest a participant could get is 1 (Soy Turk, Memis&Schenker, 2020). The tool has three factors constructs namely reason for use of WhatsApp, positive opinion and negative opinions of usage.

**Section C: WhatsApp use anxiety scale (WUAS) Instrument to measure WhatsApp use anxiety level Adopted from Beck anxiety inventory scale (BAI).**

Below is a list of common symptoms of anxiety. Please carefully read each item in the list. Indicate how much you have been bothered by that symptom during the 12month, including today, by TICKING the number that speaks well about you on symptom listed here below

**The rating scale is as follows:**

1. Strongly Disagree, 2- Disagree, 3- undecided, 4 Agree, 5 strongly Agree.

	<i>Lack of concentration</i>					
20	Anytime I remember WhatsApp chatting in class I losses focus.	1	2	3	4	5
21	I lack concentration in class anytime I flush back on WhatsApp.	1	2	3	4	5
22	My attention in class is disrupted by a WhatsApp message vibrates.	1	2	3	4	5
23	My mind wonders a lot in class on remembering a shared joke.	1	2	3	4	5
	<i>Feeling agitated/irritable</i>					
24	I feel irritated when stopped to watch shared movie.	1	2	3	4	5

25	If I do not get a blue mark on my chat'sgroups, I get angry.	1	2	3	4	5
26	Some comments in group chats make me sad.	1	2	3	4	5
27	I am bothered when I share and get no comments in group chat.	1	2	3	4	5
	<i>Inability to stay calm</i>					
28	I get disturbed with abusive comments in chats groups.	1	2	3	4	5
29	I am unsettled if asked to keep away my phone.	1	2	3	4	5
30	I am not calm in class until I check my chat group messages.	1	2	3	4	5
31	I feel shaky when asked to put off chatting page.	1	2	3	4	5
	<i>Excessive fear</i>					
32	I am afraid of losing control in my WhatsApp page.	1	2	3	4	5
33	I fear losing interactions on WhatsApp.	1	2	3	4	5
34	Some WA messages cut my breathing at times.	1	2	3	4	5
35	I am fearful in most of times when bundles cut –off.	1	2	3	4	5

*Developed by: Beck, A.T., Epstein, N., Brown, G., & Steer, R.A. (1988)*

## Appendix C

### Research Permit



# TANGAZA UNIVERSITY COLLEGE

The Catholic University of Eastern Africa

OFFICE OF THE DIRECTOR OF RESEARCH & POST GRADUATE STUDIES

E-mail: [dir.pgsr@tangaza.ac.ke](mailto:dir.pgsr@tangaza.ac.ke) Website: [www.tangaza.ac.ke](http://www.tangaza.ac.ke)

**OUR Ref:** DPGSR/ER/02/2023

**Date:** 16<sup>th</sup> February 2023

To The Commission Secretary,  
National Commission for Science, Technology and Innovation  
P.O. Box 30623,  
Nairobi – Kenya.

Dear Sir/Madam,

**Re: Research Permit for Pauline Wambui Njeri**

This is to confirm that the person named in this letter is a student at Tangaza University College (TUC). She is registered in the Institute for Youth Studies (Reg. No. 18/00381) and she is pursuing M.A degree in Counselling Psychology.

Pauline has met all our provisional academic requirements leading to data collection. However, she cannot proceed to the field before getting a Research Permit from the National Commission for Science, Technology and Innovation (NACOSTI). Kindly assist her to process the permit for data collection for her M.A. Thesis.

Thanking you in advance for your cooperation

Yours sincerely,




**Dr. Daniel M. Kitonga (Ph.D.)**  
Director, Research & Post-Graduate Studies

**CC:**

Rev. Dr. Hubert Pinto – Programme Leader, M. A. Counselling Psychology (IYS)

## Appendix D

### Ethics Clearance



# TANGAZA UNIVERSITY COLLEGE

The Catholic University of Eastern Africa

OFFICE OF THE DIRECTOR OF RESEARCH & POST-GRADUATE STUDIES

E-mail: [dir.pgsr@tangaza.ac.ke](mailto:dir.pgsr@tangaza.ac.ke) Website: [www.tangaza.ac.ke](http://www.tangaza.ac.ke)

**OUR Ref:** DPGSR/ER/02/2023 **Date:** 16<sup>th</sup> February 2023

Pauline Wambui Njeri  
Institute for Youth Studies  
School of Arts & Social Sciences  
**Tangaza University College**

Dear Pauline,

**RE: ETHICS CLEARANCE FOR PAULINE WAMBUI NJERI, REG. NO.18/00381**


Reference is made to your letter dated 2<sup>nd</sup> February 2023 requesting for ethical clearance of your research proposal to carry out a study on “*Relationship between WhatsApp use and WhatsApp use anxiety among students in Mixed Day Secondary Schools – Kamenu Ward Thika, Kenya*”.

I am pleased to inform you that, your research proposal has been reviewed and you can now apply for research permit. You are advised to submit your proposal to the National Commission for Science, Technology and Innovation (NACOSTI), for the issuance of a research permit and further guidance before commencing the data collection for your study. You are also advised to adhere to the code of ethics as regards the protection of human subjects during the entire process of your study.

This approval is valid for one year from **16<sup>th</sup> February 2023**.

Please, ensure that after the data analysis and final write up, you submit a soft copy of the thesis to the Director of Research & Post-Graduate Studies – Tangaza University College for records purposes.

Yours sincerely,



**DR. DANIEL M. KITONGA (Ph.D.)**  
*Director, Research & Post-Graduate Studies*  
Tangaza University College

**CC: Rev. Dr. Hubert Pinto** – Programme Leader, M.A. Counselling Psychology (IYS)

---


P.O. Box 15055 - 00509 Langata, Nairobi Kenya  
Tel: +254 20 8097667 / 0732 897 000 / 0733 685 059 / 0722 204 724 / 0714 610 777

Email: [inquiries@tangaza.ac.ke](mailto:inquiries@tangaza.ac.ke)  
Website: [www.tangaza.ac.ke](http://www.tangaza.ac.ke)

# Appendix E


## Research Permit

  
**REPUBLIC OF KENYA**

  
**NATIONAL COMMISSION FOR  
SCIENCE, TECHNOLOGY & INNOVATION**

Ref No: **629303** Date of Issue: **02/March/2023**


**RESEARCH LICENSE**




**This is to Certify that Miss.. Pauline Wambui Njeri of Tangaza University College, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Kiambu on the topic: Relationship Between WhatsApp Use and WhatsApp Use Anxiety Among Students in Mixed Day Secondary Schools – Kamenu Ward Thika, Kenya for the period ending : 02/March/2024.**

License No: **NACOSTI/P/23/23928**

**629303**  
Applicant Identification Number

  
Director General  
**NATIONAL COMMISSION FOR  
SCIENCE, TECHNOLOGY &  
INNOVATION**

Verification QR Code



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

**See overleaf for conditions**

## Appendix F:

### Research Authorization

**MINISTRY OF EDUCATION**  
**State Department of early learning & Basic Education**

Telephone: 0714487752  
EMAIL: educationthika@yahoo.com  
When Replying please quote



SUB COUNTY EDUCATION OFFICE  
THIKA WEST  
P.O. BOX 262,  
THIKA.

THK/ADM/259/VOL.1/48

13<sup>th</sup> March, 2023

PAULINE WAMBUI NJERI

**RE: RESEARCH AUTHORIZATION**

Reference is made to your letter dated 16<sup>TH</sup> February 2023.

You have been authorized to conduct research on “**Relationship between WhatsApp Use and WhatsApp Use Anxiety among Students in Mixed Day Secondary Schools**” for a period ending 16<sup>TH</sup> February 2024. The research is to be carried out in **Kimuchu Secondary, Broadway Secondary and Queen of Rosary Secondary.**

You are requested to share your findings with the Sub county Education Office, Thika West, upon completion of your research.

Thank you.

SUB-COUNTY DIRECTOR OF EDUCATION  
P.O. BOX 262, THIKA WEST

**MAURICE SIFUNA**  
**SUB-COUNTY DIRECTOR OF EDUCATION**  
**THIKA WEST SUBCOUNTY**

## Appendix G

### Permission Email Letter Beck institute

Submitted on: 06/23/2024 06:10:56 AM  
Completion time: 10 hr. 21 min. 20 sec.

Q. First Name  
R. PAULINE

Q. Last Name  
R. WAMBUI

Q. Email Address  
R. [pstella10th@gmail.com](mailto:pstella10th@gmail.com)

Q. Organization  
R. TANGAZA UNIVERSITY

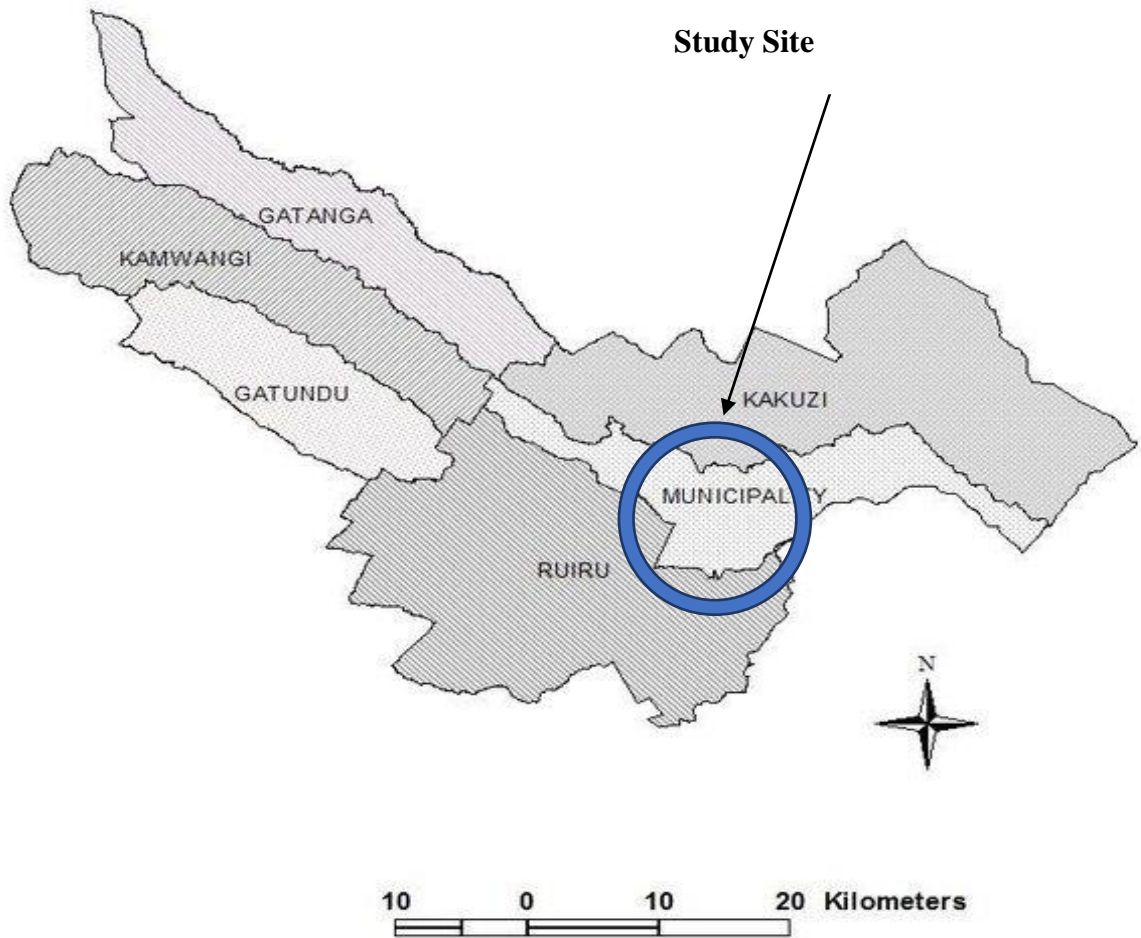
Q. Type of Publication Using Materials  
R. BECK ANXIETY INVENTORY SCALE

Q. Description of Use of Materials  
R. MA STUDENT,  
BORROWED THE CONCEPT  
OF BAI SCALE TO STUDY RELATIONSHIP BETWEEN WHATSAPP USE AND WHATSAPP  
ANXIETY AMONG SECONDARY SCHOOL STUDENTS, THIKA KENYA

COVER PAGE THESIS.docx (11  
Kb.): <https://beckinstitute.tfaforms.net/uploads/get/5de0aefd3cb1358b316b142008ce449c-COVERPAGETHESIS.docx>

## Appendix H

### Map of the study Site



# Appendix I

## Plagiarism Report


**Turnitin Originality Report**

Processed on: 01-Jul-2024 09:22 EAT  
ID: 2411089187  
Word Count: 22650  
Submitted: 1

Relationship Between WhatsApp Use and WhatsApp Use Anxiety Among Students in Mixed Day Secondary Schools – Kamenu Ward Thika, Kenya By Pauline Wambui Njeri

**TANGAZA UNIVERSITY COLLEGE,**  
Catholic University of Eastern Africa,  
Chief Librarian  
P. O. Box 15055,  
00509 - Nairobi.

Similarity Index	15%
Similarity by Source	
Internet Sources	13%
Publications	5%
Student Papers	5%



< 1% match (Internet from 21-Nov-2021)  
[http://erepository.uonbi.ac.ke/bitstream/handle/11295/95086/Mwangi\\_Administrative%20Factors%20Influencing%20Students%20Perform](http://erepository.uonbi.ac.ke/bitstream/handle/11295/95086/Mwangi_Administrative%20Factors%20Influencing%20Students%20Perform)

< 1% match (Internet from 24-May-2024)  
<http://erepository.uonbi.ac.ke/bitstream/handle/11295/164724/Keliny%20Salina%20DPH.D.pdf?isAllowed=y&sequence=1>

< 1% match (Internet from 17-Dec-2022)  
[http://erepository.uonbi.ac.ke/bitstream/handle/11295/105295/Waweru\\_Effects%20Of%20Social%20Media%20On%20Students%20Academi](http://erepository.uonbi.ac.ke/bitstream/handle/11295/105295/Waweru_Effects%20Of%20Social%20Media%20On%20Students%20Academi)  
[sAllowed=y&sequence=1](http://erepository.uonbi.ac.ke/bitstream/handle/11295/105295/Waweru_Effects%20Of%20Social%20Media%20On%20Students%20Academi)

< 1% match (Internet from 26-Jul-2021)  
[http://erepository.uonbi.ac.ke/bitstream/handle/11295/101633/Wairagyu%20Rosemary%20W\\_School%20Related%20Factors%20Influencin](http://erepository.uonbi.ac.ke/bitstream/handle/11295/101633/Wairagyu%20Rosemary%20W_School%20Related%20Factors%20Influencin)  
[gCounty%20in%20Kenya.pdf](http://erepository.uonbi.ac.ke/bitstream/handle/11295/101633/Wairagyu%20Rosemary%20W_School%20Related%20Factors%20Influencin)

< 1% match (Internet from 17-Dec-2022)  
[http://erepository.uonbi.ac.ke/bitstream/handle/11295/1157165/nyama%20F\\_WhatsApp%20Use%20in%20Newsrooms](http://erepository.uonbi.ac.ke/bitstream/handle/11295/1157165/nyama%20F_WhatsApp%20Use%20in%20Newsrooms)  
[:a%20Case%20Study%20of%20Pe%20Daily%20Use%20of%20WhatsApp%20in%20Newsrooms.pdf?isAllowed=y&sequence=1](http://erepository.uonbi.ac.ke/bitstream/handle/11295/1157165/nyama%20F_WhatsApp%20Use%20in%20Newsrooms)

< 1% match (Internet from 18-Dec-2022)  
[http://erepository.uonbi.ac.ke/bitstream/handle/11295/92912/Chenkwony\\_Factors%20Influencing%20the%20Adoption%20of%20Electroni](http://erepository.uonbi.ac.ke/bitstream/handle/11295/92912/Chenkwony_Factors%20Influencing%20the%20Adoption%20of%20Electroni)  
[sAllowed=y&sequence=1](http://erepository.uonbi.ac.ke/bitstream/handle/11295/92912/Chenkwony_Factors%20Influencing%20the%20Adoption%20of%20Electroni)

< 1% match (Internet from 07-Aug-2023)  
[http://erepository.uonbi.ac.ke/bitstream/handle/11295/1153826/Njeri\\_The%20Relationship%20between%20Psychological%20Wellbeing%20](http://erepository.uonbi.ac.ke/bitstream/handle/11295/1153826/Njeri_The%20Relationship%20between%20Psychological%20Wellbeing%20)  
[%20of%20a%20Case%20Study%20among%20married%20christian%20couples%20of%20PCFA%20Mukini%20Parish%20of%20Kambui%20](http://erepository.uonbi.ac.ke/bitstream/handle/11295/1153826/Njeri_The%20Relationship%20between%20Psychological%20Wellbeing%20)

< 1% match (Internet from 26-Apr-2023)  
[http://erepository.tangaza.ac.ke/bitstream/handle/20\\_500\\_12342/1391/William%20Kanju.pdf?isAllowed=y&sequence=1](http://erepository.tangaza.ac.ke/bitstream/handle/20_500_12342/1391/William%20Kanju.pdf?isAllowed=y&sequence=1)

< 1% match (Internet from 19-Dec-2022)  
[http://erepository.tangaza.ac.ke/bitstream/handle/20\\_500\\_12342/1377/Judith%20Haji%201st%20Sem%20of%202021%20%281%20dony?](http://erepository.tangaza.ac.ke/bitstream/handle/20_500_12342/1377/Judith%20Haji%201st%20Sem%20of%202021%20%281%20dony?)  
[isAllowed=y&sequence=1](http://erepository.tangaza.ac.ke/bitstream/handle/20_500_12342/1377/Judith%20Haji%201st%20Sem%20of%202021%20%281%20dony?)

< 1% match (Internet from 26-Nov-2022)  
[http://erepository.tangaza.ac.ke/bitstream/handle/20\\_500\\_12342/955/Finalised%20thesis%20report%20Marine1.pdf?](http://erepository.tangaza.ac.ke/bitstream/handle/20_500_12342/955/Finalised%20thesis%20report%20Marine1.pdf?)  
[isAllowed=y&sequence=1](http://erepository.tangaza.ac.ke/bitstream/handle/20_500_12342/955/Finalised%20thesis%20report%20Marine1.pdf?)

< 1% match (Internet from 26-Apr-2023)  
[http://erepository.tangaza.ac.ke/bitstream/handle/20\\_500\\_12342/1388/Purification.pdf?isAllowed=y&sequence=1](http://erepository.tangaza.ac.ke/bitstream/handle/20_500_12342/1388/Purification.pdf?isAllowed=y&sequence=1)

< 1% match (Internet from 26-Apr-2023)  
[http://erepository.tangaza.ac.ke/bitstream/handle/20\\_500\\_12342/1387/Mutune%20DOC%20FINAL%282%29%20%282%29.pdf?](http://erepository.tangaza.ac.ke/bitstream/handle/20_500_12342/1387/Mutune%20DOC%20FINAL%282%29%20%282%29.pdf?)  
[isAllowed=y&sequence=1](http://erepository.tangaza.ac.ke/bitstream/handle/20_500_12342/1387/Mutune%20DOC%20FINAL%282%29%20%282%29.pdf?)

< 1% match (Internet from 30-May-2021)  
[http://erepository.tangaza.ac.ke/xmlui/bitstream/handle/20\\_500\\_12342/820/enny%20Prisca%20Makaw%20Final%20Thesis%20Epp](http://erepository.tangaza.ac.ke/xmlui/bitstream/handle/20_500_12342/820/enny%20Prisca%20Makaw%20Final%20Thesis%20Epp)  
[isAllowed=y&sequence=1](http://erepository.tangaza.ac.ke/xmlui/bitstream/handle/20_500_12342/820/enny%20Prisca%20Makaw%20Final%20Thesis%20Epp)

< 1% match (Internet from 30-May-2021)  
[http://erepository.tangaza.ac.ke/xmlui/bitstream/handle/20\\_500\\_12342/1178/FikakeetoRogersCSC\\_ThesisFinal2021January.pdf?](http://erepository.tangaza.ac.ke/xmlui/bitstream/handle/20_500_12342/1178/FikakeetoRogersCSC_ThesisFinal2021January.pdf?)  
[isAllowed=y&sequence=1](http://erepository.tangaza.ac.ke/xmlui/bitstream/handle/20_500_12342/1178/FikakeetoRogersCSC_ThesisFinal2021January.pdf?)

< 1% match (student papers from 07-Sep-2015)  
Submitted to Kenyatta University on 2015-09-07

< 1% match (student papers from 12-Nov-2018)  
Submitted to Kenyatta University on 2018-11-12

< 1% match (student papers from 17-Aug-2015)  
Submitted to Kenyatta University on 2015-08-17

< 1% match (student papers from 17-May-2017)  
Submitted to Kenyatta University on 2017-05-17

< 1% match (Internet from 08-Aug-2022)  
[https://www.researchgate.net/publication/348482324\\_Influence\\_of\\_Social\\_Media\\_on\\_Consumers'\\_Purchase\\_Intention\\_A\\_Study\\_in\\_Malays](https://www.researchgate.net/publication/348482324_Influence_of_Social_Media_on_Consumers'_Purchase_Intention_A_Study_in_Malays)

< 1% match (Internet from 24-Nov-2021)  
[https://www.researchgate.net/publication/307560253\\_Exploring\\_the\\_Use\\_and\\_Gratifications\\_Theory\\_in\\_the\\_Usage\\_of\\_Social\\_Media\\_among](https://www.researchgate.net/publication/307560253_Exploring_the_Use_and_Gratifications_Theory_in_the_Usage_of_Social_Media_among)

< 1% match (Internet from 22-Feb-2023)  
[https://www.researchgate.net/publication/34898699\\_Perception\\_and\\_use\\_of\\_WhatsApp\\_among\\_Library\\_Professionals\\_A\\_Study\\_of\\_Pakis](https://www.researchgate.net/publication/34898699_Perception_and_use_of_WhatsApp_among_Library_Professionals_A_Study_of_Pakis)

< 1% match (Internet from 13-Dec-2022)  
[https://www.researchgate.net/publication/326389136\\_Students%27\\_Social\\_Media\\_Use\\_and\\_its\\_Perceived\\_Impact\\_on\\_their\\_Social\\_Life\\_A](https://www.researchgate.net/publication/326389136_Students%27_Social_Media_Use_and_its_Perceived_Impact_on_their_Social_Life_A)