ADOPTION AND USE OF SMART DEVICE APPLICATIONS IN ACADEMIC WORK AMONG SCHOOL OF JOURNALISM STUDENTS

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DECLARATION

This research is my original work and has not been presented for a degree or any other word in any other university.

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SUPERVISOR

I confirm that this research project has been written under my guidance and supervision.

…… Date: …….

DR. CONSOLATA MUTISYA

DEDICATION

This research is dedicated to my parents, Austin Kagose and Florence Agwanda as well as my siblings Evelyn Akinyi, Priscilla Apiyo and Marcelo Oliseh who through their continuous support I was able to pursue my degree.

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ABSTRACT

The purpose of this research was to investigate the adoption and use of smart device applications in academic work among university students. The research objectives were to identify the types of applications students use in academia, to assess the rate of adoption and use of smart device applications among students and to establish the extent to which smart device applications have influenced academic work. The study was guided by both the Uses and Gratifications Theory and the Technology Acceptance Model as well as adopt a descriptive research design. A semi-structure questionnaire and Key Informant Interviews were used to collect primary data from the School of Journalism. The study adopted quota sampling and purposive sampling procedure respectively. A total of 150 students from University of Nairobi filled out questionnaires and 1 member of staff from the school's undergraduate computer lab was interviewed as a Key Informant. Data was then analysed using Descriptive statistical methods for quantitative data and Content analysis for qualitative data. From the study, majority of 74% do own a smart phone. The total number of hours a week spent on smart phone ranged from 5 - 10 hrs. (37.0%), above 20 hrs. (22.3%), 1 - 5 hrs. (17.1%), and 11 - 20 hrs. (11.8%). The researcher can conclude that the types of applications used in academic work among university students include Instagram and Twitter were the most common followed by Facebook, WhatsApp, YouTube, Reddit, Tiktok, and Pinterest. The rate of adoption of smart device has been high given that smart phones are available everywhere and easier to find information. Therefore, the study recommends that university students in undergraduate programmes should make use of smart phone to advance their academic pursuits given the easiness, convenience, and accessibility of the academic resources from the gadgets. The study also recommends that the Government through the Ministry of Education should put in place policies effective policies that accommodate smartphones in academic work given their convenience to students.

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ABBREVIATIONS AND ACRONYMS

IBM	International Business Machines
LCD	Liquid Crystal Display
Apps	Applications downloaded on a smart device
E-books	Electronic books
ICT	Information Communication Technology

CHAPTER ONE

INTRODUCTION

1.0 Overview

This chapter contains the background of smart device applications and academic work, the statement of the problem, research questions and objectives, justification and scope and limitations of this study.

1.1 Background of the Study

The definition of a smart device in today's modern society is a mobile handheld personal device which is the most current version of portable information and communication technology (Oulasvrita, 2012). Smart devices are equipped with highly advanced and revolutionised network connectivity; it is a unified computer equipped with additional features inclusive of an operating system, web browsing capabilities and software applications.

There has been a widespread popularity on smart devices that has significantly increased over the past few years. Through the adoption of wireless services as well as wireless connections, there has been a surge in their use especially in industries and major companies (Jengchung, 2014).The world's initial smart device, the Simon Personal Communicator, emerged in the year 1992 and was created by the IBM Company. The Simon was a pioneer, a first of its kind that was able to send and receive emails, faxes and pages combined with a set of in-built features such as notepad, a world clock and an appointment schedule. However, as times changed, so did smart devices, what was once considered a large bulky portable telephone has in real-time gradually evolved to become a small compact device that has become a daily accessory in the lives of

many people (Oulasvrita, 2012). Afterwards, when the Apple Company entered the Information and Communication Technology field, their smart device was perceived to be the most advanced smart device at the time, this was mainly because it came with a wide and clear LCD screen that whose ideal feature was its ability to stream videos as well as more improved software.

By the time smart devices from both IBM and the Apple Company entered the mobile market in 2006, it had rapidly occupied 5% of the global mobile market by the year 2009 with its popularity and technological advancements gradually advancing. The penetration rate on smart devices in society is estimated to range at approximately 80% the next four years which currently, is the year 2020. The smart device contains four exclusive features compared to other mobile phones: an advanced CPU, a highly functional OS and Wi-Fi connectivity and full internet browsing. Currently, smart devices have also been known to contain multiple small programmes called apps, short for applications, made by different technology programmers from different smart device companies. Applications are software programmes that run in smart devices and enhance their functionality (Koo, 2016).

A smart device's composition is made up of a unique combination of hardware, software and network connectivity. Through these smart devices, the entire world or rather those who have access to smart devices have been impacted by them, either through social activities, marketing, education as well as healthcare (Aldhaban, 2016). Through intense evaluation and better understanding of smart devices technology, these devices have helped consumers in that we continue to adapt and develop as a population at large. Today's designers in the major smart device companies are changing the smart device industry to meet their customer's expectations. Thus smart devices have become the quickest type of Information Technology that has quickly

gained the most popularity and attention while evolving at the same time. Through this process, customers are able to acquire a smartphone based on which features are more applicable to them.

An analysis of the smart devices of today would reveal just how technologically advanced they are and they continue getting better each and every day with the ability to open multiple applications at a time, improved memory and storage as well as longer lasting battery with the inclusion of advanced mega-pixel cameras (Jengchung, 2014).

Smart devices are quickly but surely becoming ever-present in today's society and a powerful tool in academic life with higher education facilities practicing their adoption into the learning process (Vazquez-Cano, 2014). This can be seen with devices such e-books found on smart device tablets, these devices are successful in connecting the world and as a result has increased information accessibility among human beings as a society. There are smart device applications that have been developed specifically for following university subjects. These applications have been highly valued because they have been surprisingly useful in both distance and face to face studies as a result giving students access to a mobile learning system with an advantage in portability, flexibility and context.

For almost two decades, the web, what we now call the internet has in turn revolutionised and adapted human behaviour and practices on the storage and consumption of data and the ripple effect has been widespread. Information and communication technology consumption today is not the same as it once was where we had people waiting for newspapers in the morning or routinely sitting down at 7 or 9 o'clock every evening to catch the news bulletin on television (Alejandro, 2010). But ever since Google's entry into the field of web innovation in 1998 its greatest outcome was social media. Social media is an entertainment based web innovation that is a wholesome networking and communicating platform where users can share ideas and

information through text, video, pictures as well as status updates on Facebook, or micro blogs such as Twitter. What makes social media of particular interest to writing is how it has become influential as a communication and news-breaking tool.

It is highly evident that information intake today is not as similar as before because now, people can quickly know what is happening around the world with the help of 24-hour television news platforms. Additionally, there have been a growing number of readers, viewers and listeners opting for online information. Despite the fact that television, newspapers and radio are still popular means of information dissemination, there has been a growing antagonism from interactive online media platforms (Alejandro, 2010) especially from online articles, blogs, and publications among others.

All through different generations, writing is supposedly the most influential and crucial modes of communication. Throughout the course of history however, the techniques involved in conveying messages through writing has changed with the task at hand staying the same; the aim is to efficiently transfer information with clarity and intelligence. This means that the drive people have with writing as a form of communication is to relay useful information to other people in a bid to be fully understood (Jacobsen, 2011). In our modern civilisation, students do not realistically see the need to be capable to pen in an academic manner in an attempt to thrive outside of a school setting. These particular set of skills (writing skills) act as a basis for individuals to be able to contribute as well as play a role as active audiences. However, in consideration of the abundant diverse contexts in which writing is presented, and the several technological tools that support this process, this is easier said than done.

Research assignments among university students use writing as a mandatory component when it comes to research assignments. This is inclusive of theses and projects among postgraduate

students. However, many of these academic works get turned down due to multiple avoidable inaccuracies as well as high rate of plagiarism (Kibera, 2009). When it comes to academic writing, majority of successful works by university students are highly dependent on how well said students are able to understand what they are doing in order to approach the writing task at hand (Lennie, 2010). A student knowing what is needed of them will not only guarantee success on their part but rather having the right skill and mind-set is what will help them excel in academic writing.

An analytical review of the theory of a fully tethered life by Sherry Turkle, a new media theorist, it tries to simply explain how mobile devices are slowly becoming a necessity as they are not only used for communication but also to connect people to information at any time of day (Pigg, 2014). These smart devices have become a necessity because of all the benefits that come along with it. Because of this, students require a reasonable level of digital ICT competence to ensure they have a chance when it comes to the professional sector. Said ICT based education should not only focus on the handling of digital devices in this case smart devices but rather focus on education with the help of Information and Communication Technologies (ICTs) (Vazquez-Cano, 2014).

One of the major benefits of the smart devices of today is that they are able to assist students in their academic life through quick content delivery as well as a diverse level of student engagement by connecting the physical location gap. As we continue to progress, a number of applications continue to emerge every day some of which were only available on desktops before but have now evolved and been made more accessible into smart device versions. These versions are now available to students who particularly don’t have access to laptops or desktops (Vazquez-Cano, 2014).

With the inclusion their mini-keyboards, smart devices have transformed from just being mobile phones to mini-computers with functioning emails, calendars and office programmes for both reading and editing. Smart devices can also be customised with new software and as we continue to advance, these programmes continue to increase (Lusekelo & Gervas, 2015).

1.2 Statement of the Problem

Ethnography is the definition of a scientific study on how people behave in relation to their customs, beliefs as well as cultures. An ethnographic observational study done by Mauro Cherubini and De Oliveira to explore the refusal of mobile contextual services was based on the belief that the smart device was the most suitable substitute for the computer but however found that its functions and applications are poorly understood by the general public. Different cultures sometimes dictate how people behave in relation to technology (Aldhaban, 2016).

There has been a massive shift of smartphone device users from using traditional web browsers to applications as gateways to internet services as well as information acquisition. The IOS Appstore which is primarily found in iPhones has more than 350,000 apps and over 10 billion downloads in total. When in use of smart devices, users have the power at their disposal to check online sites anywhere and anytime instead of having to sit in front of a computer screen. Statistics show 97% of smart device users are using said applications for either social networking or videogames. This is because smart device allow people to access information quickly. As a result, many students feel like they need smart devices to survive and today said smart devices are rarely used for making calls (Gayle, 2015).

Multiple applications are available to customers in both the Apple store and Google Play store that are specifically made to help students in their academic work like the Dropbox App that allows students to file share in the classroom and teachers use the application to distribute hand-outs. The Evernote is another application used in academia that enables students to view. Despite the fact that smart devices have multiple applications that aide students in academia, most students in campus only use their smart devices for recreational activities like social media through applications like Facebook, Twitter and Instagram, listening to music and playing videogames like Candy Crush and Need for Speed.

Digital and portable smart device devices are becoming more affordable as well as diverse making it easily accessible especially in developing countries like Kenya. This begs the question as to why not many students are adopting smart device technologies in their academic practices but would rather prefer using said technology for social interactions online with people who are not actively going to influence their academic life. This study therefore sought to examine the adoption and use of smart device technology in academic work among university students.

1.3 Research Objectives

1.3.1 Main objective

The main objective of the study is to investigate the adoption and use of smart device applications in academic work among university students in the Kenyan context.

1.3.2 Specific objectives

The study sought to achieve the following objectives:

1. To identify the types of applications used in academic work among university students.

2. To assess the rate of adoption and use of academic smart device applications among university students.
3. To establish the extent to which smart device application use has impacted/influenced academic work.

1.4 Research Questions

The study was guided by the following research questions:

1. What are the types of smart device applications that students use in their academic work?
2. What is the rate of adoption and usage of smart device applications among university students?
3. How has the use of smart device applications impacted/influenced academic work among university students?

1.5 Justification of the Study

The purpose of this study is to investigate the adoption and use of smart device applications in academic work. With success in the field of medicine through health applications that are able to moderate people's weight and insulin intake for diabetics, as well as in the field of business and education by being able to provide distance learning to international students. With universities like Stanford, one of the top universities in the world, offering expansive mobile learning and research department it would be beneficial that we invest in student academia and pave way for other universities to follow suit.

1.6 Significance of the Study

This study will provide insight to University and college students on the potential effects, positive and negative, of smart device applications in the field of academia. As such, they was in a better position to have useful insights that can help them improve on utilising said applications to benefit student education in future.

The government through the Ministry of Education, Science and Technology may also gain useful insights from the study findings which can be useful to them in their policy making duty. This is by virtue that the findings can inform their policy developments in regulating the use of technology in students' learning. This will help to ensure that the regulatory framework for the learning in Universities and colleges does not hurt but promote students' academia in a way that is more relevant in the modern society.

1.7 Scope and Limitations of the Study

The study sample population was derived from both male and female Journalism and Mass Communication students undertaking an undergraduate course at The University of Nairobi main campus as of 2019. The University of Nairobi is ranked 1st in Kenya, 9th in Africa (Ngina, 2019). Apart from ranking, the University of Nairobi has a high student population and is also technologically advanced which is beneficial to the research topic at hand to study adoption of smart device application in academic work.

The School of Journalism was utilised because of its course unit co-relation to the use of smart device applications. For example, there is the use of applications in photography like in photo-editing, voice recording, event planning, note taking, video editing, online research as well as video and teleconferencing. The study was limited to second, third- and fourth-year

undergraduate students. This is because first year of education tackles common units and beginning second years to fourth years have been introduced as well as undertake specialised courses and have most likely undertaken and/or practiced academic work such as class assignments and project proposals. A key informant was also derived from the Computer Lab at the School of Journalism.

1.8 Operational Definition of Terms

Assignments tasks or pieces of work that are allocated to university students as coursework for a certain unit

Mobile phones a hand held device enabled to access cellular radio systems and allows users to send and receive calls

Smart device these are electronically advanced mobile devices or smartphones which operate on networks via different protocols such as Bluetooth or Wi-Fi

Software applications programs or groups of programs available in smartphones that are designed to enhance productivity

Technology machinery or equipment developed from manual application of scientific knowledge

The web commonly referred to as the World Wide Web is an information system where internet related resources are accessible to people all over the world

Web browsers a software application used for accessing information on the web

CHAPTER TWO

LITERATURE REVIEW

2.0 Overview

This chapter consists of literature on smart device applications and their influence on society. This chapter also consists of empirical review, theoretical review; the uses and gratifications theory as well as the technology acceptance model and conceptual framework

2.1 Influence of smart devices on society

The world's cultural and social influences have had a major impact on smart device adoption. Smart device usage and influences in places like Saudi Arabia as well as China can be seen in the major technological advances in the country. Using the Theory of Reasoned Action by Icek Azjen and Martin Fishbein (1967) studies have been done on the implementation of smart device technology and results showed that subjective norms had a positive outcome on smart device use. Subjective norms are can be defined as a mentally controlled peer or social pressure that determine whether human beings will or will not perform a given action (Hausenblas, 1997).

According to research analysis done by Pew Research Centre, internet use in developing countries is mostly associated with social media when compared with first world countries. Social networking sites like Facebook and Twitter have made people crave social interactions with millenials, the youth of today, more likely to use the internet for such as compared to adults aged 35 and over. Social networking sites are online registered users to engage freely with other registered users (Poushter, 2016).

Science and knowledge have been evolving and currently is a more practical tool that we now call technology. The current problem in society does not lie in technology but rather society's mentalities due to technology, because technology improves the swiftness in the amount of time we spend on doing a particular task. Smart devices today are more and more like fully functioning computers with modern operating systems as well as contain multiple applications that in turn enhance productivity (Wang, 2014).

2.2 Smart devices as a substitute for computers

In today's modern society, the current generation of teenagers, especially those born in the 1990's, have been labelled as the iGeneration for their reputation of being the most connected generation ever. The people born in this generation do not know of a world that doesn't include access to technology. This is inclusive of inventions like DVD's, the Toyota Prius, USB flash drives and portable Mp3 players (Lusekelo & Gervas, 2015).

Smart devices have been used by many people in multiple fields including those of navigation, voice recording when it comes to interviewing a sample size and note taking. Sometimes navigation may be a hassle especially when it comes to remembering specific routes by heart. Smart devices are equipped with the ability to be able to locate addresses in a short period of time as well as choose appropriate routes and modes of transportation. In comparison to a physical notepad, the digital version is more portable and hence there is less need for one to carry both a bag and a pen and it is less messy when it comes to grammatical mistakes due to the presence of autocorrect (Anselin, 1997).

After an analysis of smart device technology advancements in relation to research sampling, it can be seen that smart devices have made sampling in the sense of research easier, user friendly

and highly reliable with the help of survey software and participant identification. Experience sampling can be defined is an intensive longitudinal research that involves asking participants to report on their thoughts, feelings and behaviours for example trying out a new skin regimen. Experience sampling is a highly sensitive research method that could easily be manipulated compared to other field research sampling methods. This is because it uncovers new areas of study. The quality of data gathered from the subjects helps the researcher know whether they are asking the right questions by either complimenting or challenging the findings obtained (Hoffman, 2008).

2.3 ICT in education

Education can be defined as the human ability to undertake and facilitate learning through methods like research as well as discussions. Information and communication technologies have been used in the field of Education since inception with developed countries applying them to school education. Technological advancements have placed ICTs in almost every aspect of our life. This is because with each new coming generation in our society, ICTs have become competent with their use and with schools being an information dispensing facility; ICTs should be a fundamental tool (Hepp, 2004).

Early researchers claim that the internet as we know it was first developed by the United States Department of Defence as an effort on their part to try to create a safe and protected means of communication amid their military and research installations (Anderson, 2001). Today, the internet has evolved and continues to evolve into a complex and fast-growing cyber space connecting multitudes of people across the world in real-time. Easy accessibility has been one of the major reimbursements of the internet while at the same time has been a key factor that has

led to its constant overuse as well as a key determinant in the quality of smart devices in today's market with colleges and universities being a catalyst in its overuse. They provide students with reliable internet access as well as engage their students with activities like e-mails and student-teacher group chats (Anderson, 2001).

Upper class economies have much higher rates of technology use when it comes to smart device applications. As we continue to technologically advance in today's modern society, said technology remains one of the major defining factors of human development (Poushter, 2016). According to a research analysis done by Pew Research Centre on the topic of smart device applications in education in the United States, results showed that as education levels in developing countries continue to rise, there is an increase in internet use specifically for educational purposes rather than for extra- curricular activities. It basically stated that the smarter a person is, the more inclined they are to use the internet as a source of educational information. It was reported that the youth have more access to smart device technology compared to those aged 35 and older even though the gap varied country to country but the pattern is similar (Poushter, 2016).

Looking at the analysis of smart devices relation to computer based applications and technological access tools; there is a preconceived perception that learning should otherwise be fun. University students are now showed multiple diverse technological innovations that as a result, give them the impression that learning should always be fun. One of the most widespread results of technology is that students procure a mentality that makes them believe acquiring the ability to write should not be a tussle and that frequent practice accompanied with lessons will make learning easier and more enjoyable (Olson, 2001). Teachers understandably want their students to appreciate learning and be engage with them in their teaching process; nevertheless

not *all* learning should be as easy as a walk in the park. In fact according to recent studies, in order for vital learning among students to occur, students should be ready to put in the effort even struggle a bit. It makes us ask ourselves what is the point of learning if it is always easy and fun? The answer is that students need to be challenged; they need that extra nudge in order to create new experiences as well as make new connections (Olson, 2001).

However, these challenges technology faces in the field of in the field of education require carefulness and determination from the students. This would not characterise learning as either easy or entertaining, but it is without a doubt significant learning. Furthermore, in order to be able to motivate students to become persistent learners, the students themselves must change their mind-set that anything worth learning can and should take the form of a technological tool (Troia, 2013).

There are multiple forms of educational software programmes found in smart devices that are inclusive of ICT based tools which contain language checks that students can use for their academic works. One example of these tools being the proofread option on Microsoft Word that is able to detect grammar and spelling corrections. If a student makes a mistake and writes, "Their were several women at the market," the database will detect this and underline the word in blue in an attempt to indicate where the error is. The student then right clicks on the word "their", and the correct option which is of the homonym, "there" will appear and the student can then substitute the two options. All these programme tools are available in Microsoft Word. (Haak, 2012).

The problem at hand in modern societies ICT in education lies in students' current view on writing, one of the major problems students face is the inability differentiate between casual and

official contexts of writing. Thus, many students are combining these two as one form of writing without even being able to clarify where each type of writing is suitable and valid. Regrettably, has created a slew of lazy writers who assume their superiors will be willing to decode everything (Jengchung, 2014).

A study was conducted on a professor and his students who were able to create a smart device based application for their finance class that enabled them to experience first-hand trading on the ground. A thorough analysis of the study determined that the application was valuable to the students in their study topic and allowed them to develop a better understanding of the situation at hand (Gayle, 2015). A similar study also compared student preference of applications in relation to web browsers. After a breakdown of the data collected, it was evident that with 85% of students preferring applications for example using the weather app compared to googling the weather patterns, the future of ICT in education is bright.

Distance education, a technology based education tool, is an advanced learning mechanism with a main focus of freeing students from the constraints of time and location. Smart devices have undoubtedly had the capability of keeping their users always connected; it makes it much easier for students to avail themselves to this type of education as well as enabling them to keep up with their work. The smart devices of today have consistently provided the modern society, especially university students, with a large amount of learning resources and thus making them useful for educational development for current and future generations (Gowthami, 2016).

There has been numerous manual experimentation that have allowed free interactions between students located in advanced countries when it comes to universities that have begun mobile learning with smart devices. Stanford University, a private university located in Stanford California offers an expansive mobile learning research department. The Stanford Mobile

Inquiry Learning Environment which abbreviates into the word SMILE was developed by a man named Paul Kim. SMILE allows Stanford students to evaluate educational topics basically becoming a mobile research facility (Vazquez-Cano, 2014).

2.4 Effects on academic work

Academic research is a complex task and compulsory element in multiple course units that is inclusive of numerous vital skills of which some students may lack completely while others may have only partially mastered (Carnegie Mellon University, 2015). It is very important for a student to have the ability to write liberated from any superior assistance in the midst of this evolving world where there is an availability of technical tools that have the ability to support quicker and easier facilitation of different tasks. Moreover, research skills have undoubtedly become crucial in the field of the Common Core Learning Standards. These standards help students become writing professionals through implementing writing strategies, facilitating the communication of ideas clearly and concisely, building seasoned arguments as well as being able to organise one's ideas and being able to use said ideas to prove a point (Carnegie Mellon University, 2015).

In order for a student to successfully complete an academic task, they must have a specific set of skills. If university students are not able to effectively write with creativity and the ability to avoid common mistakes, they run the risk of not being able to acquire tertiary education due to the high standards of the job market. Adding on to this, students may also miss out on the opportunity to enter job markets and lose their spot to more qualified individuals. Going beyond student preparation in the university, these Learning Standards have placed valuations that now

allow students to prove their research skills, which in this case, is beneficial for smart device application in education.

Critical elements in the K-12 educational programme have been used in the promotion of college and career readiness, this involves actual communication through academic writing. The K-12 educational experience is the kindergarten and 12 year basic education programme in the United States with six years of primary, four years of junior high and two years of senior high. In association with the Common Core Learning Standards, we can now expect students to have the ability to compose, sustain, and expand their knowledge and understanding of themselves and their world which in this case involves technology in relation to student academia (Troia, 2013). Thus, research on the topic at hand has undoubtedly become a vital element among university students as it is evident it empowers them to probe deeper into academic work specialising in critical or controversial issues. Overall, academic research makes students highly susceptible of the world around them. This is not only because they can convey certain messages with other people through their writing abilities, but also because they have the ability to both the simple and sometimes intricate writing of others.

There has been a serious ambience felt from journalists in the media that writing is in crisis. Evidently as working conditions for many journalists in the country decrease, workloads on the other hand have increased. Majority of news outlet stations have actually reduced staff, and doubled the workload of the remaining employees in a bid to steadily keep their output for the 24-hour news cycle on their numerous platforms. Even though it is evident that there are as many working journalists today as ever before, there has been numerical evidence of the increase of journalistic work not necessarily in traditional newsrooms; but rather journalists who moonlight

as freelancers, bloggers on websites as well as in advocacy organisations, and as public affairs practitioners (Pigg, 2014).

2.5 Empirical Review

An analysis done on the study by Chris Bjornsen (2015) at the University of Taiwan on computers in human behaviour and found substantial evidence on how majority of students, 90%, use their cell phones in class. The study found that most students preferred internet libraries as opposed to library books and the students required computer and smart device technology to complete academic assignments and researches that ranged from weekly assignments to term papers. Even though many of the students expressed doubts on what factors actually make a source credible and were content with the quality of sources and citations they came up with, it was evident that smart devices had morphed into academic tools used predominantly by students because they are basically pocket-size portable computers that carry the research, reading and writing functions (Regalado, 2014).

A survey research done by Pew Research Centre in America by Jacob Poushter (2016) showed that there has been a noticeable rise in people who own an internet enabled smart device. In 2015, the United States, Canada as well as some major Western European nations as well as the Pacific were surveyed on the basis of internet access also saw an increase in smart device ownership from the year 2013. Two thirds of the world as a whole had access to quality internet but there were fewer numbers in places in Africa and South Asia as smart devices were less common in developing countries (Poushter, 2016). There were large gender gaps evident from the survey especially in countries like Mexico, Nigeria as well as Kenya where the men had an upper advantage in the access of internet enabled mobile phones. According to the survey, the

global median of adults who use the internet occasionally or own a smart device was 67% during the year 2015. South Korea stood at 94% while Kenya was below the median at 40%. Many large economies that were coming up included Malaysia with 68% and Brazil with 60% as of 2015 (Poushter, 2016).

A study done by Qiang Xu, Jeffery Erman et al. on the diverse usage behaviours of smart device applications found that certain smart device applications had a likelihood of being co-occurring. This meant that when a smart device user uses an application, he/she is more than likely to use another app similar to the first one. The study categorised the sample applications by the genres listed under the platform's marketplace. The study also found that entertainment, games, music and utility applications had the highest number of downloads with 20% of the analysed apps being local like for news and radio (Qiang, 2011).

A descriptive study done by W. Koo on the top 100 US Retailers on the usage of smart device applications found that 81 of the total 100 provided their own smart device applications. The said 100 retailers were chosen in accordance with analysed annual revenues and data was collected via iPhone in regard to its dominant usage in the United States. The SPSS version 22 was used in data analysis to show that 81 out of the 100 retailers provided their own apps. The retailers explained how even though management of the apps was costly, they understood the benefits of offering their own apps to their customers with one critical benefit being applications provided a better user experience compared to mobile version websites (Koo, 2016).

A study done at the Spanish National University of Distance Education (UNED) on Mobile distance learning with smart devices and applications in higher education by Esteban Vazquez-Cano in 2014 found that not only did the students find it satisfactory having to study with their

smart devices but it increased flexibility for both face-to-face and distance learners. The smart device was evident to be a powerful tool in the field of academia. Because of this study, it was also evident that software that encourages students and professors to create content should be highly encouraged while ensuring educational resources including online repositories are easily smart device accessible (Vazquez-Cano, 2014).

2.6 Theoretical Review

This study was based on two theories. The Uses and Gratifications Theory by Wimmer and Dominick, and the Technology Acceptance Model by Fred Davis

2.6.1 Uses and gratification theory

Wimmer and Dominick (1994) proposed that the Uses and Gratifications theory began in the year 1940 when researchers sought to understand why audiences participated in several forms of media consumption like radio listening and reading their newspapers. This study however, was primarily based on descriptive research study design due to the little theoretical coherence that was available back then (Wimmer, 1994).

This particular theory's foundational basis primarily holds audiences accountable for their choice of media in a bid to satisfy their requirements and wants in order to attain satisfaction. Its main emphasis is on the impact of the media on people. It basically states that those who consume media are considered as active consumers which in this case are the smartphone applications.

This mass media that has been conceptualised by this theory is a resolute of a group of key elements inclusive of one's psychological and social environment. Through this media, the internet has served people with a multitude of interpersonal utility functions such as web

searching, information search as well as socialisation, surveillance, entertainment and diversion. People are drawn to choose media according to their need. In other words, it is a goal-directed and motivated action (Urista, 2009). Due to this, the theory was used to investigate why students prefer to use their smart devices as a source of entertainment or socialisation and what benefit they gain from such especially in the classroom. With advancements of technology especially with the internet available in most classrooms it ties in with the theory on what benefits students seek from using their smart devices either for class assignments or for entertainment.

Even though there is still a lack of clear explanations in the psychological background, behaviour and consequences, interactivity is the strength of its notion of the audience as active users because of the levels at which consumers have control in communication process. Through this theory it can be seen how an individual's longing for more information from media is a key component in explaining why media has various and perceptive effects on them (Ruggerio, 2000).

The driving force for this particular theory is to look for a reason on why people deliberately seek media and what they use it for. In relation to this research, it was a tool in the means to understand why students particularly need the media they crave in smart devices and why not many of them are using it as their academic companion. This is because the theory tries to explain that the audiences do not just have the power of choice of said media but rather they also have the power over what they allow themselves to consume thus holding them accountable. In the same way we can say that the students have control over their smart devices and should therefore be held accountable for their choices on when, where and how they use it.

2.6.2 Technology acceptance model

The Technology Acceptance Model was made known in the year 1986 by Fred Davis as a more simplified version of the Theory of Reasoned Action as a way of modelling information system acceptance. The model was basically used to measure Perceived Usefulness (PU) and Perceived Ease of Use (PEOU). The final version of this model was formed in 1996 as both PU and PEOU directly influenced behaviour intent while disregarding the attitude aspect of the model (Lai, 2017)

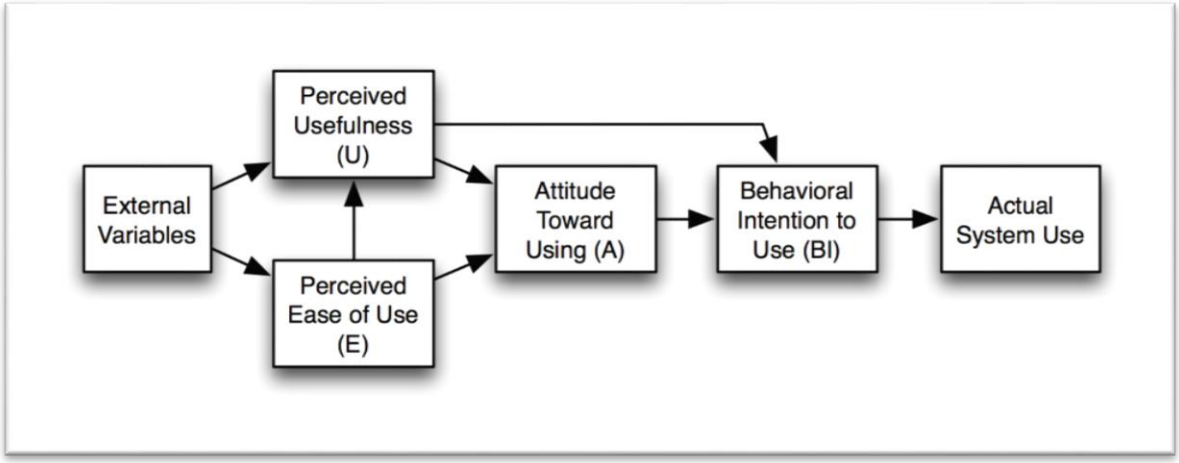


Figure 2.1: The Technology acceptance Model

The Technology Acceptance Model (TAM) attempts a simple explanation on the user to use a particular technological innovation by its consumers. Because of the model's simplicity, it allows for both significant and insignificant effects to be analysed (King, 2006). Based on the research topic, this research aims to find out why students are not engaging with their smart devices in the field of research even when they are seen to be the most logical and flexible type of technology accessible to young people especially students. The smart device is becoming more accessible in today's market and thus most university students either have a smart device at their disposal or

most likely have access to one. Therefore, this research adopted the Technology Acceptance Model to investigate why the smart device has not been inaugurated into the research facilities at the University of Nairobi and what steps the university can implement based on the research findings.

The key resolution of the Technology Acceptance Model is to critically study the impact of external variables on assertiveness and purposes. User attitudes towards using as well as behavioural intention are common underlying factors when it comes to TAM. User attitude as well as beliefs about technology has made it be critiqued especially on the question whether students really need said smart device technology when it would be much easier for the current technology system to stay in place. Through the Perceived Ease of Use and attitudes towards technology acceptance brought about by the model, it would be beneficial to have a framework or a guide to understand the benefits and understand everything that might come along with the technology.

2.7 Conceptual framework

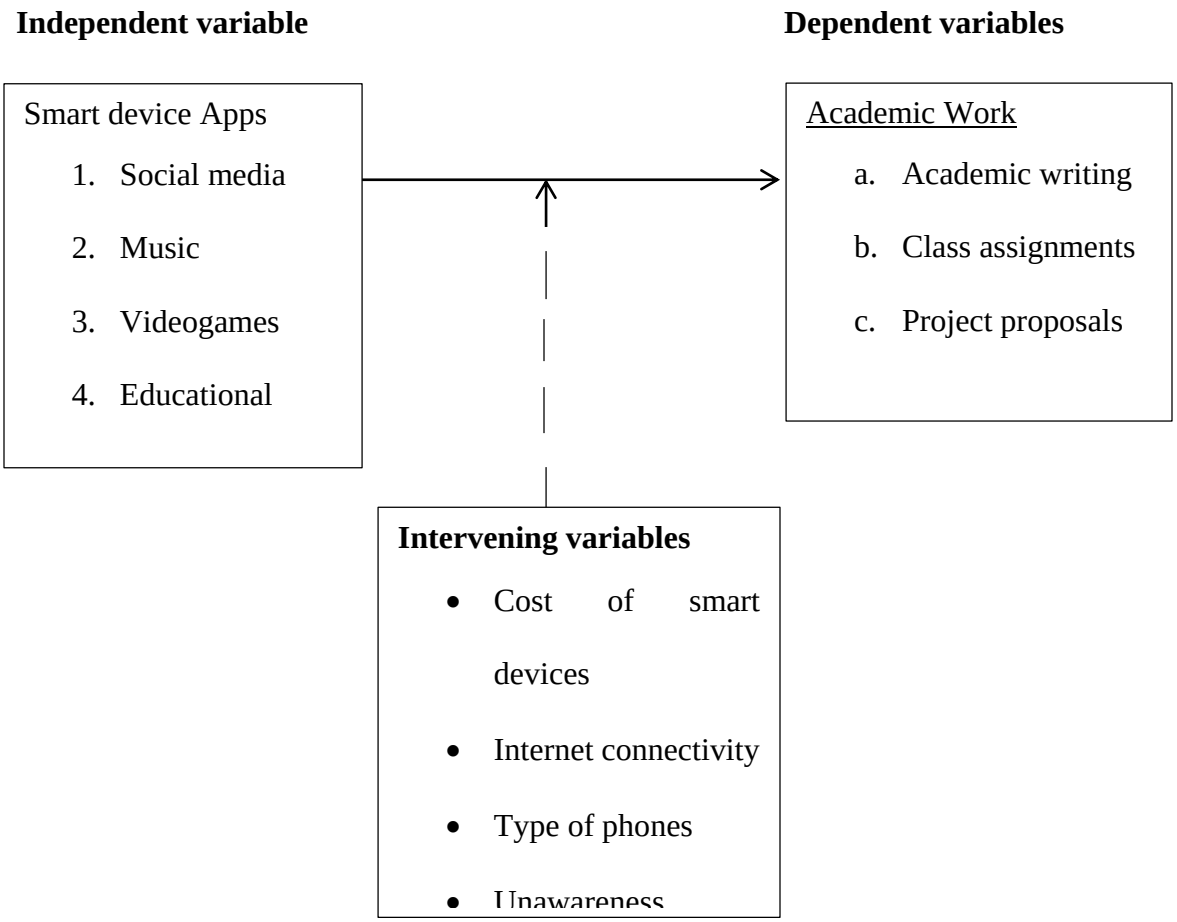


Figure 2.2: Conceptual Framework

From the conceptual framework above, students are in control of how and why they use their smart device applications; they could either have the choice of using their phones as an aide to their academic work, music, social media and video games. However, there are some intervening variables or hindrances that could force students to choose whether they may even be able to use their smart devices in academic work. One of them being the cost of smart devices as not everyone could be financially stable to afford a smart device. Most people who are not able to afford smart devices are able to afford ones that have limited to no internet connectivity. Unawareness as an intervening variable comes in when students have both the smart device capability and internet connectivity but do not know how their smart devices can benefit them in academics.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Overview

The main focus of this section is the research design, target population, sample and sampling procedure, data collection instruments and procedure, validity and reliability of the instruments and ethical considerations.

3.1 Research Design

Kothari (2004) defined a research design as a type of blueprint that acts as a guide to a researcher on the execution of the research method and the succeeding analysis of acquired data. The basis of a particular research design in a study is on the research questions as it directs the researcher to the specific range of sources and forms of information (Cooper, 2006).

This study adopted a descriptive research design. Descriptive survey designs are used when defining opinions and attitudes as well as express the characteristics of a particular group of people. Descriptive designs are commonly used to characterise phenomena as well as identify an association between variables (Mugenda, 2003).

3.2 Research Approach

This study adopted a mixed methods approach. This study focused on the collection and analysis of both qualitative and quantitative data. A mixed methods approach complements each type of methodology than either approach alone thus ensuring validity and reliability.

3.3 Research Methods

This study utilised case study as a research method. Case study can be defined as a research strategy that requires an examination within a real-life context in this case The University of Nairobi. This research method thoroughly analyses a person, a group or an event (Mugenda, 2003).

3.4 Study site

This study was carried out at the University of Nairobi main campus at the School of Journalism.

3.5 Target Population

According to Cooper and Schindler (2006), a population can be defined as the sum of elements to which the researcher wishes to make inferences.

The target population for this study at the School of Journalism comprised second, third and fourth year undergraduate students of The University of Nairobi main campus, and the target population was approximately 750 students. The target population also included 1 selected staff member under the undergraduate computer lab department at the School of Journalism.

3.6 Sample Size and Sampling Method

3.6.1 Sample size

A sample can be defined as a set of units strained from a target population with the goal of assessing characteristics of the said population. We can also define sampling as the process of selecting observations (Cramer, 2004).

According to Mugenda and Mugenda (2013) when the target population of the study is less than 10,000 a sample between 10% and 30% is a respectable depiction of the target population. The study sample from the School of Journalism consisted of 20% of the target population [750].

Sample size= 150 students

At the undergraduate computer lab department at the School of Journalism, the sample size consisted of 1 member of staff who was a Key Informant to the study.

3.6.2 Sampling Procedure

This study adopted a random sampling procedure at the School of Journalism in order to allow each subject in the target population an equal chance of being selected. Quota sampling was utilised before handing out questionnaires to the selected subjects.

Quota sampling refers to selection of subjects with the inclusion of some controls, ensuring that specific numbers are obtained from each population subgroup. This type of sampling can be summarised as a non-probability equivalent of stratified sampling. This is because once a sample size has been determined quotas can be set (Elder, 2009). This method of sampling ensures a certain feature of a population will be represented among the sample size, leaving the researcher to then collect subjects who meet the inclusion criteria (Prakash, 2013). 50 students were sampled from 2nd, 3rd and 4th years for the total sample size of 150 students.

The study also adopted a purposive sampling procedure at the ICT Department at the School of Journalism. Purposive sampling is a type of non-probability sampling procedure that's main focus is on particular aspects of a population that are of interest to the researcher. In this case, the researcher was mainly interested in gathering information from one key person who was well

informed on the topic of Information Technology at the school in order to compare to data collected on smart device applications.

3.7 Data Collection Method and Procedure

The researcher collected both qualitative and quantitative data. Primary data from the School of Journalism was collected using a survey method where the tool was semi-structured questionnaires that were administered to the selected university students chosen after sampling.

The researcher also collected qualitative primary data from a key respondent at the School of Journalism through Key Informant Interview.

3.7.1 Data collection tool

The researcher administered questionnaire to all respondents of the study. A questionnaire communicates to the respondent what is intended of them and elicits desired response in a bid to achieve the research objectives (Chandran, 2004). Therefore, this instrument is considered the best for this study. The questionnaire contained both open ended and close-ended questions. The close-ended questions provided more structured responses to facilitate more quantifiable responses while open ended questions allowed for descriptions and suggestions from the study sample in regard to the research objectives.

Key informant interview was also used as a method of data collection at the Undergraduate computer lab at the School of Journalism. Key Informant Interview is an in-depth qualitative data collection tool that collects information from people who have first-hand knowledge and/or experience on the research topic. The expert can either offer insight on the issue at hand or give recommended solutions. In this case, the key informant was the computer lab coordinator at the

undergraduate computer lab. This was because he is experienced in the school having dealt with the educational information and communication technology available in the school campus.

3.8 Data Analysis and Presentation

Statistical Programme for Social Sciences (SPSS) was used in data analysis of quantitative data. The data was presented by use of bar charts, graphs, pie charts and in tables. This was done by tallying up responses, computing percentages of variations in response as well as describing and interpreting the data in line with the study objectives.

Qualitative data was analysed through content analysis. It involves observation and detailed description of objects, items or things that comprise the study (Mugenda, 2003). This method makes it possible to analyse and logically group the large quantity of data and compile the rest of the study. In this regard, the researcher organised the qualitative data in accordance to the study objectives.

3.9 Validity and reliability

Mugenda (2003) define reliability as a specific measure of the level to which an instrument is able to produce dependable results or data after repeated trial.

To ensure reliability of the study research instrument, a pilot study was employed in order to evaluate feasibility, time as well as improve on the data collection tool prior to the full-scale research project. This ensures that if anything is found missing in the pilot study, it can be made up for in the full-scale study in order to improve quality and efficiency.

3.10 Ethical Considerations

This research was conducted in accordance with the ethical guidelines of research which are: Study objectives were explained to the students who provided consent in relation to the results obtained from the study being treated with the utmost confidentiality. If the study were likely to record illegal or socially undesirable activities, certificate of confidentiality shall be obtained and when recording material, consideration would be given to whether recording creates a potential risk for the subjects.

The researcher obtained a Certificate of Fieldwork that gave her legal access to collect data from the study sample attached as (Appendix III), the University under the School of Journalism then did a plagiarism test to ensure originality as attached (Appendix IV) and after correction of mistakes on the whole document, the researcher was issued with a Certificate of Correction as attached (Appendix V).

CHAPTER FOUR

DATA ANALYSIS, FINDINGS AND DISCUSSION

4.0 Overview

This chapter presents data analysis, findings and discussion. The purpose of this study was to investigate the adoption and use of smart device applications in academic work among university students in the Kenyan context. This chapter is organised into sections based on the research variables. Demographic information is also presented as well as response rate.

4.1 Response Rate

The researcher administered 150 questionnaires to respondents drawn from both male and female Journalism and Mass Communication students undertaking an undergraduate course at the University of Nairobi main campus out of whom 111 returned the questionnaires. This translates to 84.4 percent response rate. Edward *et al* (2002) indicate that a response rate of less than 60% is insufficient; 60%-80% is highly adequate while over 80% is excellent. Therefore, a response rate of 84.4 percent was excellent for the purpose of their study. Table 4.1 presents the information

4.1.1 Response Rate

Table 4.1: Response Rate

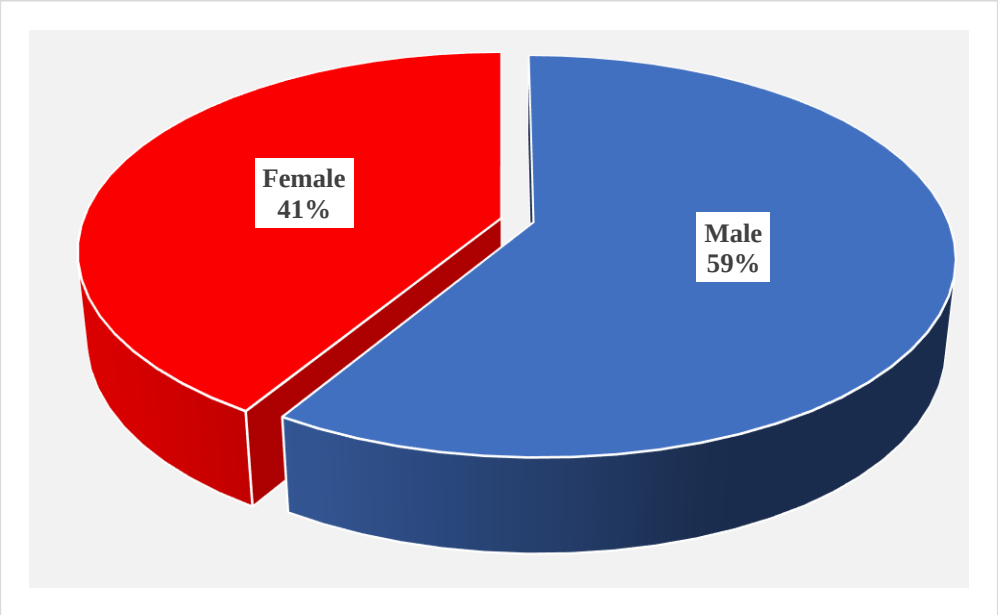
	Frequency	Percent
Responses	111	84.4%
No Responses	39	15.6%
Total	150	100.0%

Source: Fieldwork 2019

4.2 Demographic Information

This section analysed distribution of respondents based on their gender (Figure 4.1), year of study (Figure 4.2), age brackets (Table 4.2) and whether the respondent is working (Figure 4.3).

Figure 4.1: Gender of the Respondents



Source: Fieldwork 2019

As shown in Figure 4.1, majority (58.8%) of the respondents were male with the remaining 41.2% being female. This implies that Journalism and Mass Communication Course in undergraduate programmes are more common to male compared to their female counterparts.

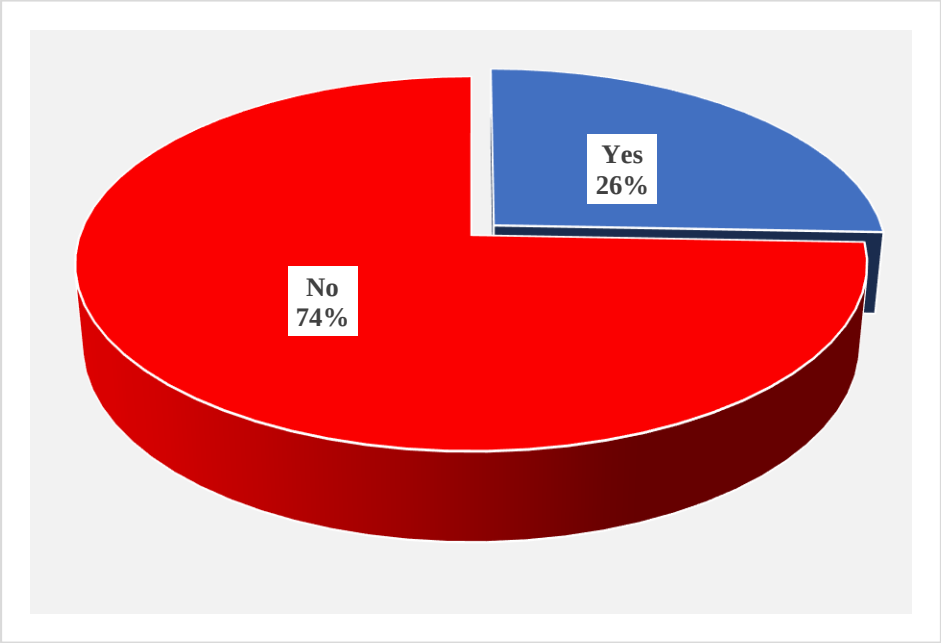
Table 4.2: Age Brackets of the Respondents

Age	Frequency	Percent
16 - 20 years	16	14.1
21 - 25 years	94	85.0
26 - 30 years	1	0.9
Total	**111**	**100.0**

Source: Fieldwork 2019

On the age brackets of the respondents, Table 4.2 shows that a vast majority (84.8%) of respondents were aged between 21 and 25 years. Those aged from 16 - 20 years were 14.2% with only 0.9% falling under the age bracket of 26 - 30 years. The researcher can therefore generalise that respondents for this study were in their early youthful stage. Age bracket of the respondents was important in this study since students may have different perceptions towards smart devices as a tool for academic use depending on when the tools were introduced to them.

Figure 4.2: Whether respondent is working



Source: Fieldwork 2019

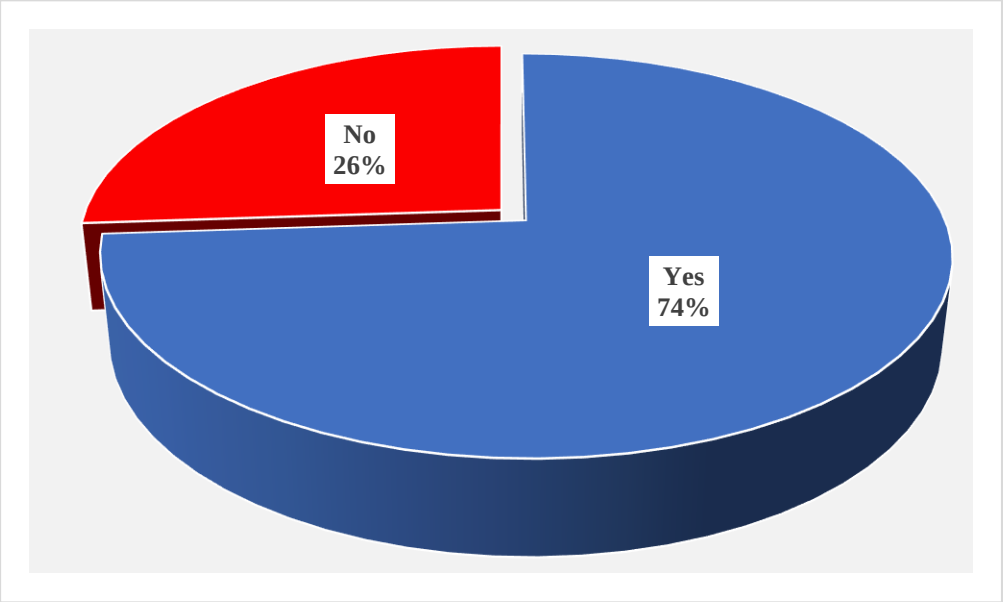
As shown in Figure 4.3, majority (74.4%) of respondents are not working with only 25.6% disclosing that they are in employment. This implies that, majority of undergraduate students in Journalism and mass communication are not employed. This could as well imply that the students rely on their parents/guardians for financial support and thus the extent of use of smart device for academic purpose by the students could highly be moulded by perception of the parents on student possessing such tool as well as their financial capability to purchase the same for their children.

4.3 Type of smart device applications and communication channel

This section was based on whether respondent has a smart phone (Figure 4.4), total number of hours a week spent on smart phone (Figure 4.5), whether respondent is on social media (Figure 4.6), and the social media sites mostly visited by the student (Table 4.3). The section also

presents the total number of hours a week spent on social media (Figure 4.7) as well as the number of class assignments respondent has handed in since the beginning of 2019 (Table 4.4).

Figure 4.3: Whether respondent has a smart phone

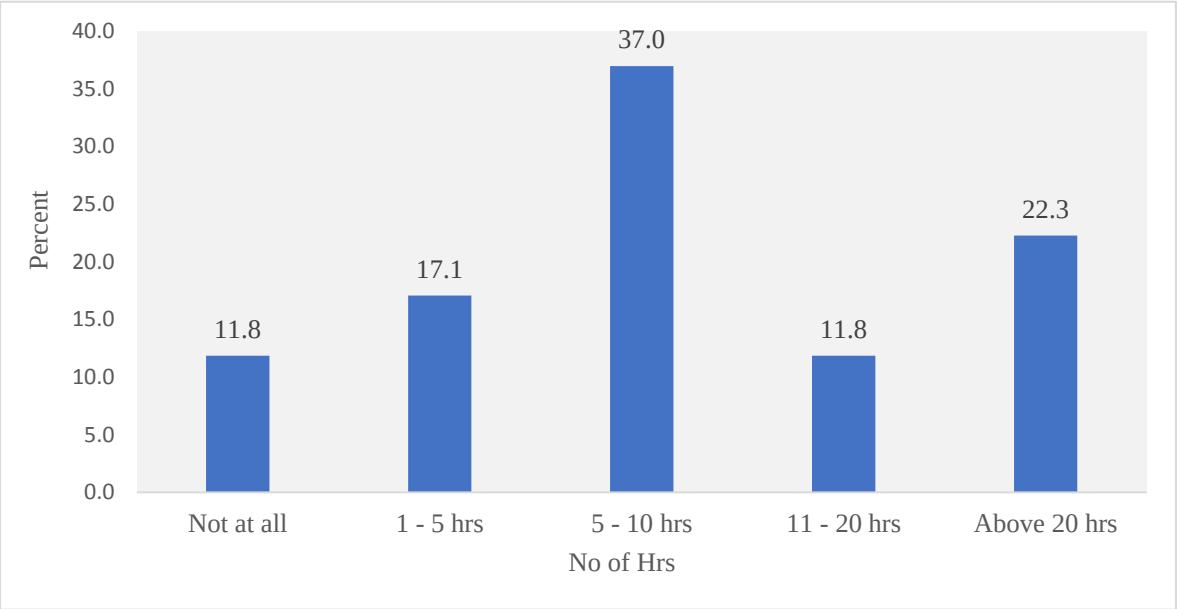


Source: Fieldwork 2019

On whether respondent has a smart phone, a majority of 74% answered to the affirmative with only 26% disclosing that they do not own a smart phone. This confirms that students really need smart devices media because it helps them access important knowledge that is key to their career success. Smart devices are quickly but surely becoming ever-present in today's society and a powerful tool in academic life with higher education facilities practicing their adoption into the learning process (Vazquez-Cano, 2014).

The smart device's popularity has significantly increased over the past few years. After the adoption of wireless services as well as wireless connections, there has been a surge in their use especially in industries and major companies (Jengchung, 2014).

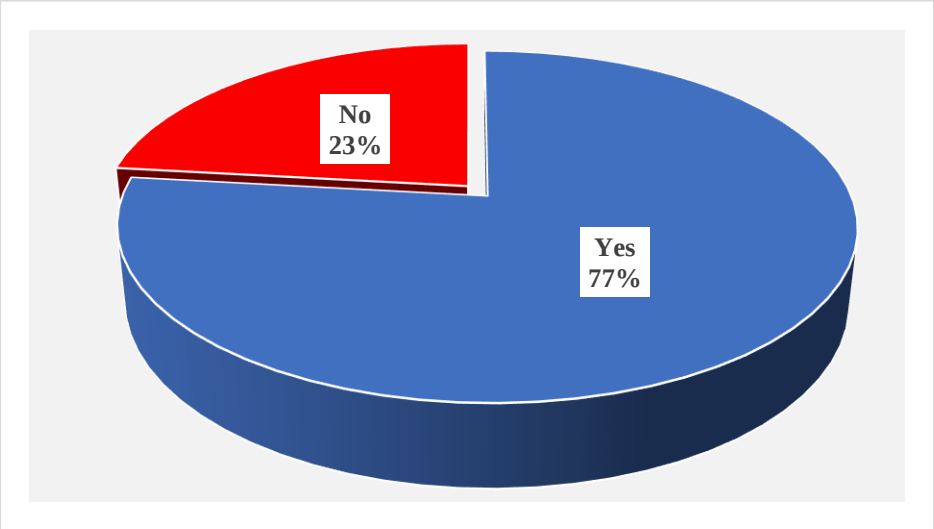
Figure 4.4: Total number of hours a week spent on smart phone



Source: Fieldwork 2019

Figure 4.5 shows the total number of hours a week spent on smart device. From the findings, numbers of hours were distributed from 5 - 10 hrs. (37.0%), above 20 hrs. (22.3%), 1 - 5 hrs. (17.1%), and 11 - 20 hrs. (11.8%). The remaining 11.8% said that they don't spend any time on smart phone. This suggests that majority of students in Journalism and Mass Communication spend at least 5 hours a week on their smart device.

Figure 4.5: Whether respondent is on social media

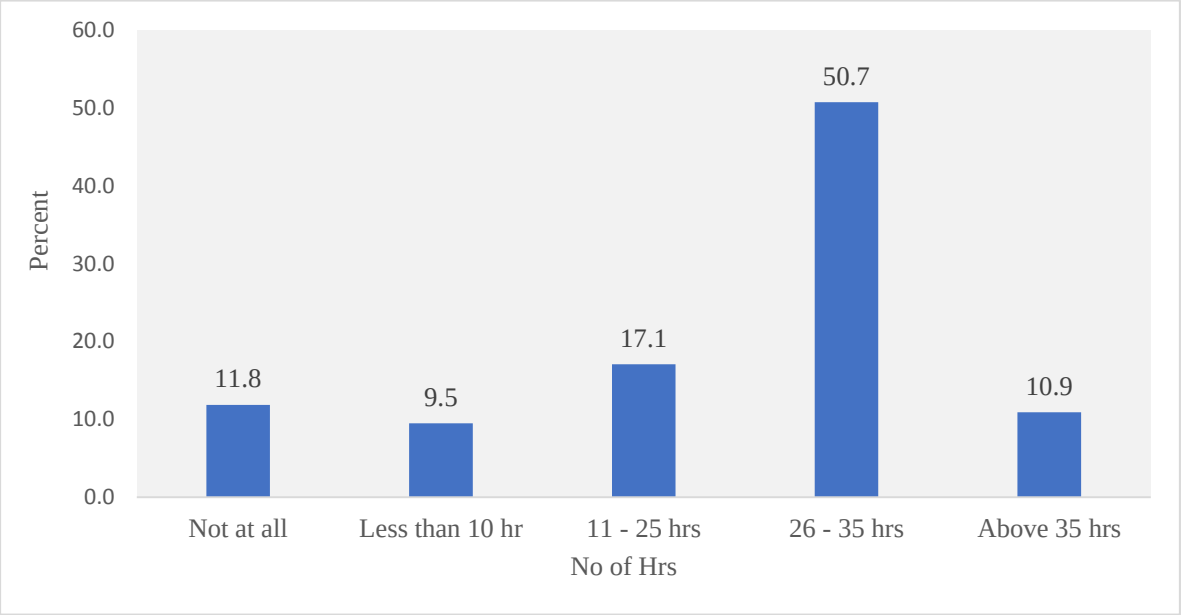


Source: Fieldwork 2019

Regarding whether the respondents have been on social media, 76.8% of the respondents answered to the assertion with the remaining 23.2% saying they do not use social media.

Today's generation of teenagers, especially those born in the 1990's have been labelled as the iGeneration because they are the most connected ever. The people born in this generation do not know of a world that doesn't include access to technology (Lusekelo & Gervas, 2015).

Figure 4.6: Total number of hours a week spent on social media



Source: Fieldwork 2019

Figure 4.7 presents the total number of hours a week spent on social media. From the findings, majority of respondents (50.7%) spends between 26 and 35 hrs. on social media per week. Other respondents cited 11 - 25 hrs. (17.1%), Above 35 hrs. (10.9%), and Less than 10 hr. (9.5%). The remaining respondents (11.8%) do not at all use social media.

These findings conform with a research done by Pew Research Centre who found that internet use in developing countries is mostly associated with social media when compared with first world countries. Social networking sites like Facebook and Twitter have made people crave social interactions with millenials, the youth of today, highly probable to be in use the internet for such as compared to adults aged 35 and over (Poushter, 2016).

Table 4.3: Number of class assignments respondent has handed in since the beginning of 2019

Number of class assignments	Frequency	Percent
0 – 5	22	20
6 – 10	70	63
11 – 15	17	15
15 and above	2	2
Total	**111**	**100.0**

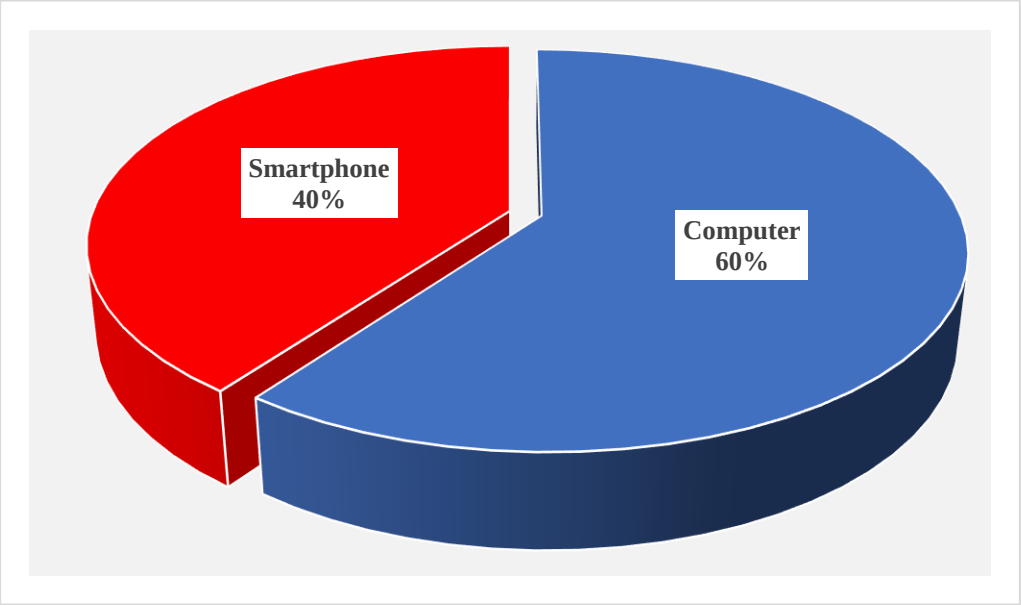
Source: Fieldwork 2019

Regarding the number of class assignments respondent has handed in since the beginning of 2019, a majority (63%) of respondents have done between 6 and 10 assignments. Others have done 0 - 5 (20%), 11 - 15 (15%), and 15 and above (2%). Table 4.4 shows the same information.

According to the key informant,

> "*Students from the second year mostly come to the computer lab to deal with their online portals like registering for units and checking grades while students in third and fourth come to research and type their class assignments"*

Figure 4.7: Means of ICT respondent used to access information for the assignment(s)



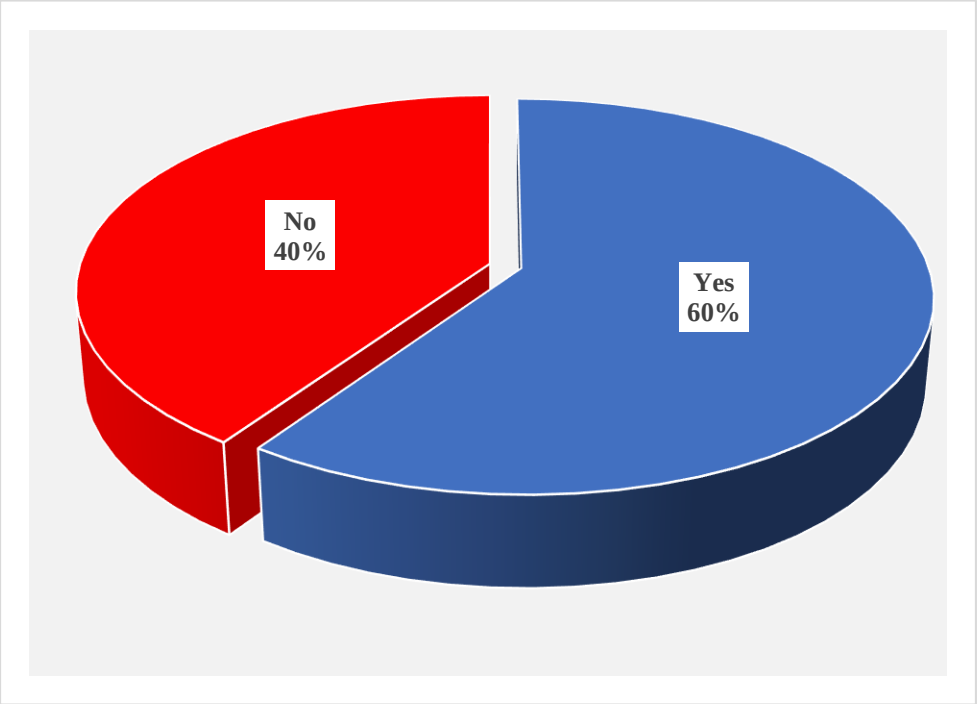
Source: Fieldwork 2019

As shown in Figure 4.8 majority (60.2%) of respondents cited that they use computer as means of ICT with the remaining (39.8%) using smart device to access information for the assignment(s).

> *"Smart devices are the next beneficial choice after the computer because it is like a mini-computer students carry around in their pocket. This is why we also have Wi-Fi in the computer lab, to enable them to complete what they came to do without having to log on."*

This goes in relation to the ethnographic observational study done by Mauro Cherubini and De Oliveira to explore the refusal of mobile contextual services was based on the belief that the smart device was the most suitable substitute for the computer but however found that its functions and applications are poorly understood by the general public (Aldhaban, 2016).

Figure 4.8: Whether respondent has ever heard of educational smart device apps



Source: Fieldwork 2019

On whether respondent has ever heard of educational smart device apps, Figure 4.9 shows that majority of respondents (59.7%) answered to endorsement with the remaining 40.3% indicating that they have never heard of educational smart device apps.

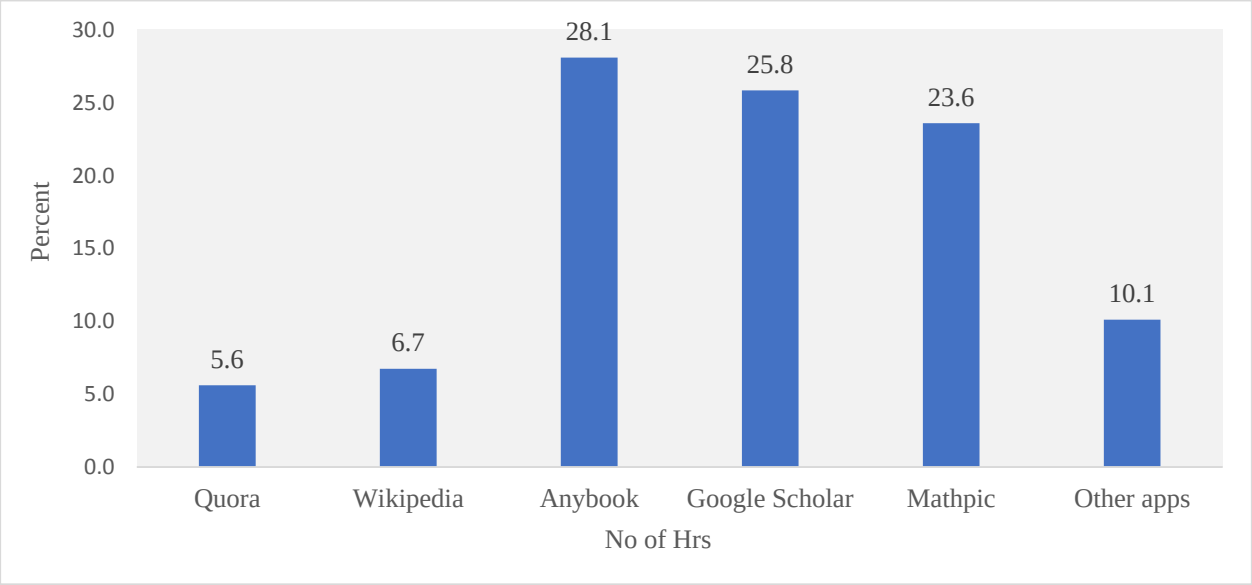
As explained by Vazquez-Cano (2014), smart devices are quickly but surely becoming ever-present in today's society and a powerful tool in academic life with higher education facilities practicing their adoption into the learning process. Devices such e-books found on smart device tablets have been successful in connecting the world thus increasing information accessibility. There have been applications precisely established for use among university subjects which have been highly appreciated because they have been surprisingly useful in both distance and face to

face studies thus students have access to a mobile learning system with an advantage in portability, flexibility and context.

4.4 Rate of smart device adoption and use

This section was based on the educational application the respondents have heard about (Figure 4.10), where the respondent heard about the mentioned educational applications (Figure 4.11), whether respondents use their smart device in academic work (Table 4.5), whether respondent prefer using their smart device applications as opposed to going to the library (Figure 4.12) and whether respondent would be interested in school facilities like the library than using smart applications (Figure 4.13).

Figure 4.9: Name of the educational application the respondents have heard about



Source: Fieldwork 2019

Figure 4.10 indicates the educational application the respondents have heard about. Findings show that, Anybook (28.1%) was known to many respondents followed by Google Scholar (25.8%). Other applications included Mathpic (23.6%), other apps (10.1%), Wikipedia (6.7%), and Quora (5.6%). This implies that Anybook, Google Scholar and Mathpic are the most known application to 2nd, 3rd, and 4th year students in Journalism and Mass Communication in University of Nairobi.

Other apps stated by the surveys were Evernote, Dropbox, Duolingo(language learning app that does so through little games), Linkedin Learning(has a lot of courses and tutorials for professional use) and Udemy (video lectures that help students with things like public speaking and cooking).

As seen in Figure 4.2, majority of the students sampled were from the second year and this is in relation to 60% of the total sample size having heard of smart device applications. This shows that early on in their university education students are exposed to educational smart device applications.

As noted by Gayle (2015), there are multiple applications found in both the Apple store and Google Play store that are specifically made to help students in their academic work like the Dropbox App that allows students to file share in the classroom and teachers use the application to distribute hand-outs. The Evernote is another application used in academia that enables students to view. Despite the fact that smart devices have multiple applications that aide students in academia, most students in campus only use their smart devices for recreational activities like social media through applications like Facebook, Twitter and Instagram, listening to music and playing videogames like Candy Crush and Need for Speed.

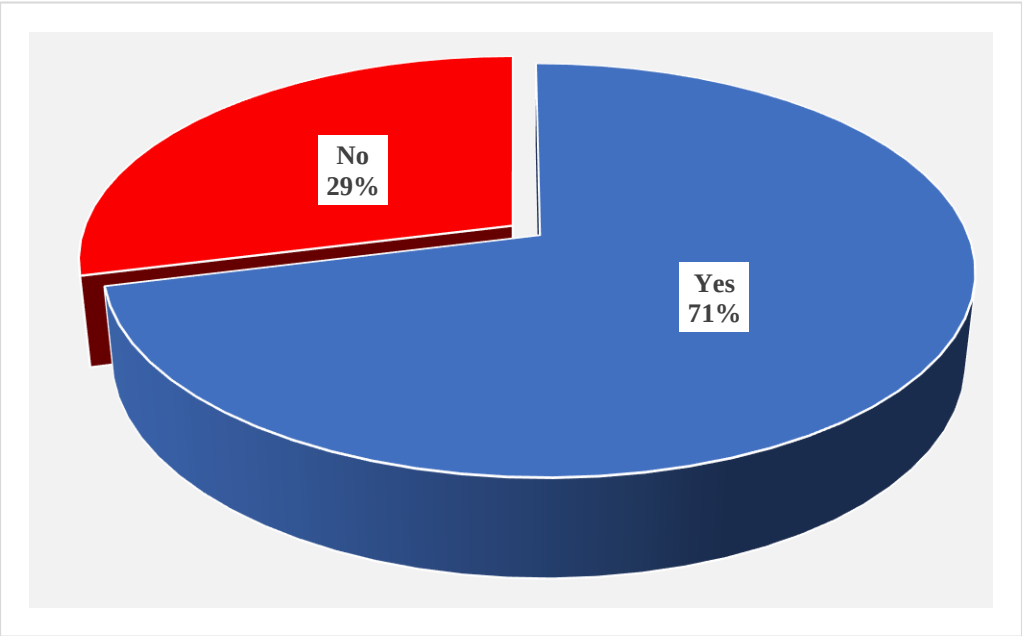
Table 4.4: Where the respondent heard about the mentioned educational applications

Source of information	Frequency	Percent
Television	30	27
Social Media	46	41
Newspaper	11	10
A friend	20	18
Website ads	4	4

Source: Fieldwork 2019

Table 4.5 shows where the respondent heard about the mentioned educational applications. A majority of them mentioned social media (41%) with others stating television (27%), friends (18%), newspapers (11%), and website ads (4%). This implies that social media is an effective mean of disseminating information on educational applications. According to research done by Pew Research Centre, internet use in developing countries is mostly associated with social media when compared with first world countries. Social networking sites like Facebook and Twitter have made people crave social interactions with millenials, the youth of today, more likely to use the internet for such as compared to adults aged 35 and over (Poushter, 2016).

Figure 4.10: Whether respondents use their smart device in academic work



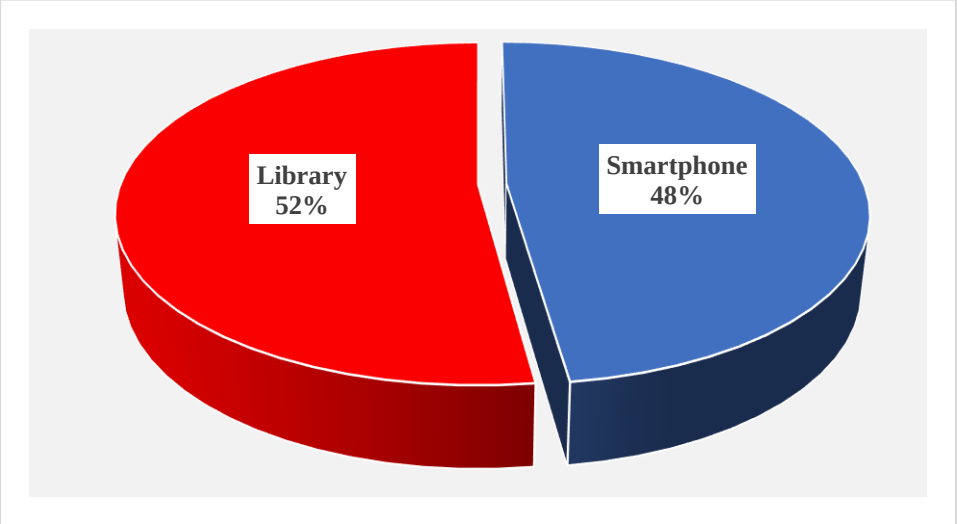
Source: Fieldwork 2019

On whether respondents use their smart device in academic work, a majority of respondents (71.1%) said thy do with the remaining 28.9% revealing that they do not use their smart device in academic work. For those who use smart phones for academic work normally do so in research and consultation, YouTube tutorials since its easiest way to get information. On the other hand, students do not use smart device in academic because of either lack of smart phone or to avoid destruction from other apps.

Information and communication technologies have been used in the field of Education since inception with developed countries applying them to school education. Technological advancements have placed ICTs in almost every aspect of our life. This is because with each new generation ICTs have become competent with their use and with schools being an information dispensing facility, ICTs should be a fundamental tool (Hepp, 2004).

Therefore, there are some intervening variables or hindrances that could force students to choose whether they may even be able to use their smart devices in academic work. One of them being the cost of smart devices as not everyone could be financially stable to afford a smart device. Most people who are not able to afford smart devices are able to afford ones that have limited to no internet connectivity. Unawareness as an intervening variable comes in when students have both the smart device capability and internet connectivity but do not know how their smart devices can benefit them in academics.

Figure 4.21: Whether respondent prefer using their smart device applications as opposed to going to the library



Source: Fieldwork 2019

Figure 4.12 illustrates whether respondent prefer using their smart device applications as opposed to going to the library. From the findings, a majority of respondent mentioned library (52.1%) as opposed to smart device (47.9%). They cited easiness to use books as the main reason for preferring library to smart phone. Other contributing factors include time saving,

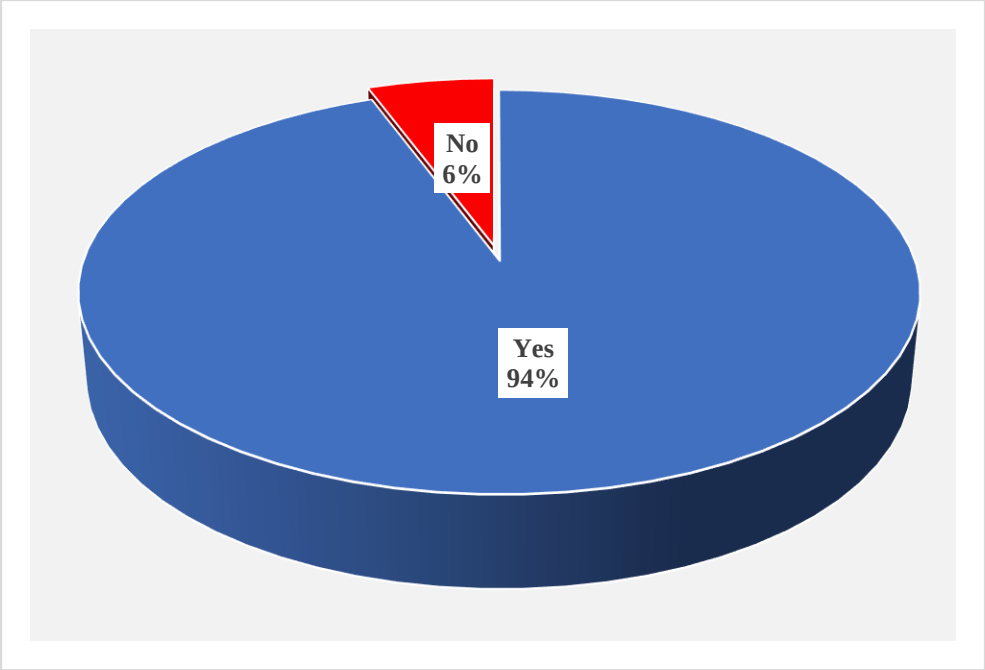
accessibility, better concentration and understanding. Those who prefer smart device to library, nonetheless, said phones are available everywhere and easier to find information. At the same time, phones are more convenient with some reference materials are not available in library.

This goes hand in hand with Wang (2014) on how the current problem in society does not lie in technology but rather society's mentalities due to technology, because technology improves the swiftness in the amount of time we spend on doing a particular task. Smart devices today are more and more like fully functioning computers with modern operating systems as well as contain multiple applications that in turn enhance productivity.

4.5 Extent to which smart device application use has impacted/influenced academic work

This section was based on whether respondent would be interested in school facilities like the library than using smart applications (Figure 4.13), ICT programmes/applications offered by respondent's school (Table 4.6), whether respondent would be interested in school services that use smart application in relation to services mentioned (Figure 4.14), and other services that respondent would like their respective school to offer in regard to smart device applications.

Figure 4.32: Whether respondent would be interested in school facilities like the library than using smart device applications



Source: Fieldwork 2019

On whether respondent would be interested in school facilities like the library than using smart applications, an overwhelming majority (94.3%) answered to the affirmative with only 5.7% disclosing that they would not be interested with such facilities. The reasons cited for this preference was that, everyone is able to access the smart device more than the library and can access smart device applications at the comfort of their house. Besides, smart devices make student work easy in accessing and compiling take-away school work. Over and above, some respondents felt that library would give limited source of information compared to smart phone.

This study conforms to the findings by Chris Bjornsen (2015) at the University of Taiwan on computers in human behaviour which found substantial evidence on how majority of students, 90%, use their cell phones in class. The study found that most students preferred internet

libraries as opposed to library books and the students required computer and smart device technology to complete academic assignments and researches that ranged from weekly assignments to term papers. Even though many of the students expressed doubts on what factors actually make a source credible and were content with the quality of sources and citations they came up with, it was evident that smart devices had morphed into academic tools used predominantly by students because they are basically pocket-size portable computers that carry the research, reading and writing functions (Regalado, 2014).

Table 4.5: ICT programmes/applications offered by respondent's school

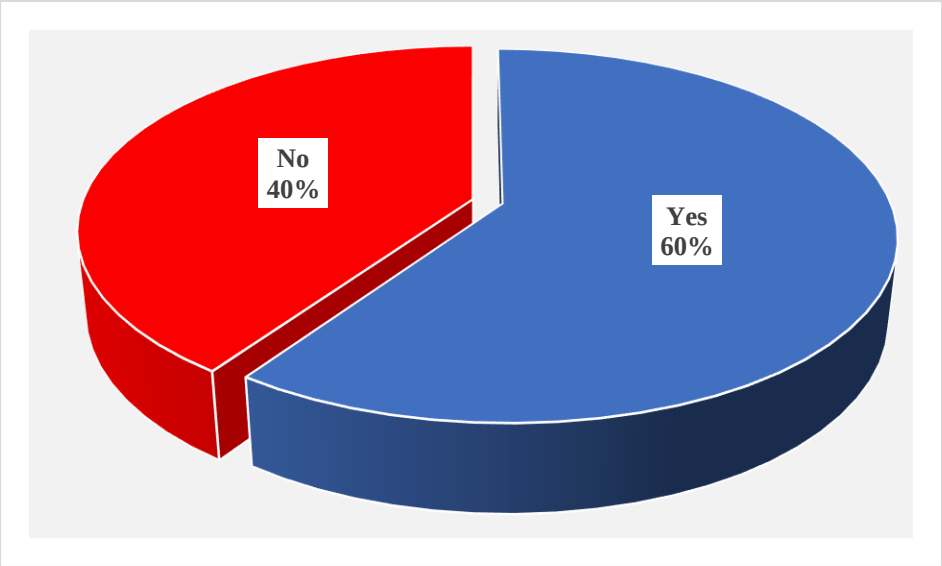
ICT Programme offered	Frequency	Percent
Podcasts	38	27.5
Facebook and Twitter	85	61.6
YouTube	23	16.7
Blogs	25	18.1
Online Repository	21	15.2

Source: Fieldwork 2019

Table 4.6 shows the ICT programmes/applications offered by respondent's school. From the findings, social media (61.6%) was found to be the most prevalent application with podcasts (27.5%), blogs (18.1%), YouTube (16.7%), and Online Repository (15.2%) being the other ICT programmes/applications offered by respondent's school. This emphasises the central role played by social media among Journalism and Mass Communication Students in University of Nairobi.

As proclaimed by Alejandro (2010), it is highly evident that information intake today is not as similar as before because now, people can quickly know what is happening around the world with the help of 24-hour television news platforms. Additionally, there have been a growing number of readers, viewers and listeners opting for online information. Despite the fact that television, newspapers and radio are still popular means of information dissemination, there has been a growing antagonism from interactive online media platforms (Alejandro, 2010) especially from online articles, blogs, and publications among others.

Figure 4.13: Whether respondent would be interested in school services that use smart device applications in relation to services mentioned



Source: Fieldwork 2019

Figure 4.14 illustrates whether respondent would be interested in school services that use smart application in relation to services mentioned. A majority of respondents (59.7%) said yes with the remaining 40.3% saying they would not be interested. The reasons mentioned were that,

students can easily do their work at the comfort of their house. It also makes it easy for student to get the services from smart phone given that they have them at their disposal. Smart applications are also time saving and easier to be accessed.

Other services that respondent would like their respective school to offer in regard to smart device applications were blog with past write-ups, career connections with relevant course of study, free internet, podcasts for lectures, as well as class attendance and suggestions.

According to the Key Informant,

> *"The policies that have been put in place is that no student is allowed to access a computer for more than an hour per day to browse and to do research to allow other students to have access when needed. But being that there are more than 800 students this computer lab has to cater for, smart devices are the next best thing in relation to ICT in academic work."*

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.0 Overview

This chapter presents the summary of the study, conclusions and recommendations. The study also presents suggestions for further studies.

5.1 Summary of the Study

5.1.1 Interview

From the interview conducted on the undergraduate computer lab technician as a key informant. It was seen that there were a total of 20 computers that the students were able to use when they felt the need to do so and approximately 30 students are able to access the computer lab on a daily basis from the time the computer lab opens till closing time. The policies that have been put in place is that no student is allowed to access a computer for more than an hour per day to browse and to do research to allow other students to have access when needed. All students are also required to sign in to ensure that the computer lab is used solely by School of Journalism students. There are multiple applications that are found on the computer that are smart device accessible for example adobe Photoshop and Microsoft Office. There is also wireless internet whereby each student is allocated a username and password to allow them to access said applications on their laptops, tablets and smart devices just in case the computer lab may be full at a certain point during the day.

5.1.2 Questionnaire

From the study, majority of 74% do own a smart phone. The total number of hours a week spent on smart phone ranged from 5 - 10 hrs. (37.0%), above 20 hrs. (22.3%), 1 - 5 hrs. (17.1%), and

11 - 20 hrs. (11.8%). Regarding whether respondents have been on social media, 76.8% of the respondents answered to the assertion with the remaining 23.2% saying they do not use social media.

Majority of respondents (50.7%) spends between 26 and 35 hrs. on social media per week. Other respondents cited 11 - 25 hrs. (17.1%), Above 35 hrs. (10.9%), and Less than 10 hr. (9.5%). The remaining respondents (11.8%) do not at all use social media. Regarding the number of class assignments respondent has handed in since the beginning of 2019, a majority (62.6%) of respondents have done between 6 and 10 assignments. Others have done 0 - 5 (20.4%), 11 - 15 (14.7%), and 15 and above (2.4%). In addition, 60.2% of respondents cited that they use computer as means of ICT with others (39.8%) using smart device to access information for the assignment(s) with the remaining.

On whether respondent has ever heard of educational smart device apps, 59.7% answered to endorsement with the remaining 40.3% indicating that they have never heard of educational smart device apps. At the same time, Anybook (28.1%) was known to many respondents followed by Google Scholar (25.8%). Other applications included Mathpic (23.6%), other apps (10.1%), Wikipedia (6.7%), and Quora (5.6%). A majority of them mentioned social media (61.6%) with others stating television (27.5%), friends (18.1%), newspaper (16.7%), and website ads (15.2%). This implies that social media is an effective mean of disseminating information on educational applications.

On whether respondents use their smart device in academic work, a majority of respondents (71.1%) said thy do with the remaining 28.9% revealing that they do not use their smart device in academic work. A majority of respondent mentioned library (52.1%) as opposed to smart

device (47.9%). They cited easiness to use books as the main reason for preferring library to smart phone. Other contributing factors include time saving, accessibility, better concentration and understanding.

On whether respondent would be interested in school facilities like the library than using smart applications, an overwhelming majority (94.3%) answered to the affirmative with only 5.7% disclosing that they would not be interested with such facilities. Social media (61.6%) was found to be the most prevalent application with television (27.5%), friends (18.1%), newspaper (16.7%), and website ads (15.2%) being the other ICT programmes/applications offered by respondent's school. This emphasises the central role played by social media in academic works for Journalism and Mass Communication Students in University of Nairobi. A majority of respondents (59.7%) said yes with the remaining 40.3% saying they would not be interested. The reasons for these responses were that, students can easily do their work at the comfort of their house.

5.2 Conclusion

The researcher can conclude that the types of applications used in academic work among university students include Instagram and Twitter were the most common followed by Facebook, WhatsApp, YouTube, Reddit, Tiktok, and Pinterest. The rate of adoption of smart device has been high given that smart phones are available everywhere and easier to find information. At the same time, phones are more convenient with some reference materials are not available in library. Smart device application use has highly impacted/influenced academic work and this confirms that students really need smart phones since their availability in social media as well as academic work helps them access important knowledge that is key to their career success.

5.3 Recommendations

The researcher recommends that following:

i. University students in undergraduate programmes should make use of smart phone to advance their academic pursuits given the easiness, convenience, and accessibility of the academic resources from the gadgets.
ii. The university should also increase the number of computers available to undergraduate students being that they are so many compared to the number of computers available.
iii. Government through the relevant policy makers should ensure adequate and effective policies are put and place and enhanced to ensure that students are able to easily access and also afford smart phones that can accommodate academic applications.
iv. University should also create conducive environment outside of the classroom for students to use smart phones for the purpose of learning. This should include providing free or affordable internet at universities and also introducing common courses that would educate students on use of such phones in academic research.

5.5 Suggestions for Further Studies

Given the findings and limitations of this study, the researcher recommends the following:

i. A study should be carried out to investigate the adoption and use of smart device applications in academic work among university students in departments other than at the School of Journalism in University of Nairobi.
ii. For comparative purpose, the same study should be extended to other public universities in Kenya.

iii. Moreover, a similar study should be done in private universities and colleges targeting different departments and levels

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APPENDIX I: QUESTIONNAIRE

My name is Caroline Kagose, a graduate student at the University of Nairobi, currently doing research on the adaptation and use of smart device technology in research among students at the School of Journalism. Your opinion is highly appreciated and the answers given are solely for research purposes only.

Section A: General Information (tick one answer)

1. State your gender.

a) Male

b) Female

2. How old are you?

a) 16-20

b) 20-25

c) 25-30

d) 30 and above

3. Are you working?

a) Yes

b) No

Section B: Type of smart device applications and communication channel

4. Do you have a smart device?

a) Yes

b) No

5. What is the total number of hours a week that you spend on a smart device?

a) Less than 1

b) 1-5

c) 5-10

d) 11-20

e) 20 and above

6. Are you on social media?

a) Yes

b) No

7. How many hours a week do you spend on social media?

a) Less than 10

b) 10-25

c) 25-35

d) More than 35

8. How many class assignments have you handed in from the beginning of 2019?

a) 0-5

b) 5-10

c) 10-15

d) 15 and above

9. What means of ICT did you use to access information for the assignment in 10 above?

a) Computer

b) Smart device

c) Other (specify below)

…….

10. Have you ever heard of educational smart device apps?

a) Yes

b) No

12b. If yes above, which ones?

……..

11. Where did you hear of these educational applications?

a) Television

b) Radio

c) Social media

d) Newspaper

e) From a friend

Section B: Rate of smart device adoption and use

14. Do you have access to a smart device?

a) Yes

b) No

15. Do you use your phone in academic work?

a) Yes

b) No

16. If yes above, please explain how?

……..

16b) If no to question 15, explain why

…….

17. Do you prefer using your smart device applications as opposed to going to the library?

a) Smart device

b) Using the library

18. Would you be interested in school facilities like the library that using smart device applications?

a) Yes

b) No

19. Please explain your answer above.

……

20. Which ICT services does your school offer (tick more than one)

a) Podcasts

b) YouTube

c) Facebook and Twitter

d) Blogs

e) Online Repository

21. Would you be interested in school services that use social media services like all mentioned above?

a) Yes

b) No

20b. If yes above, explain why

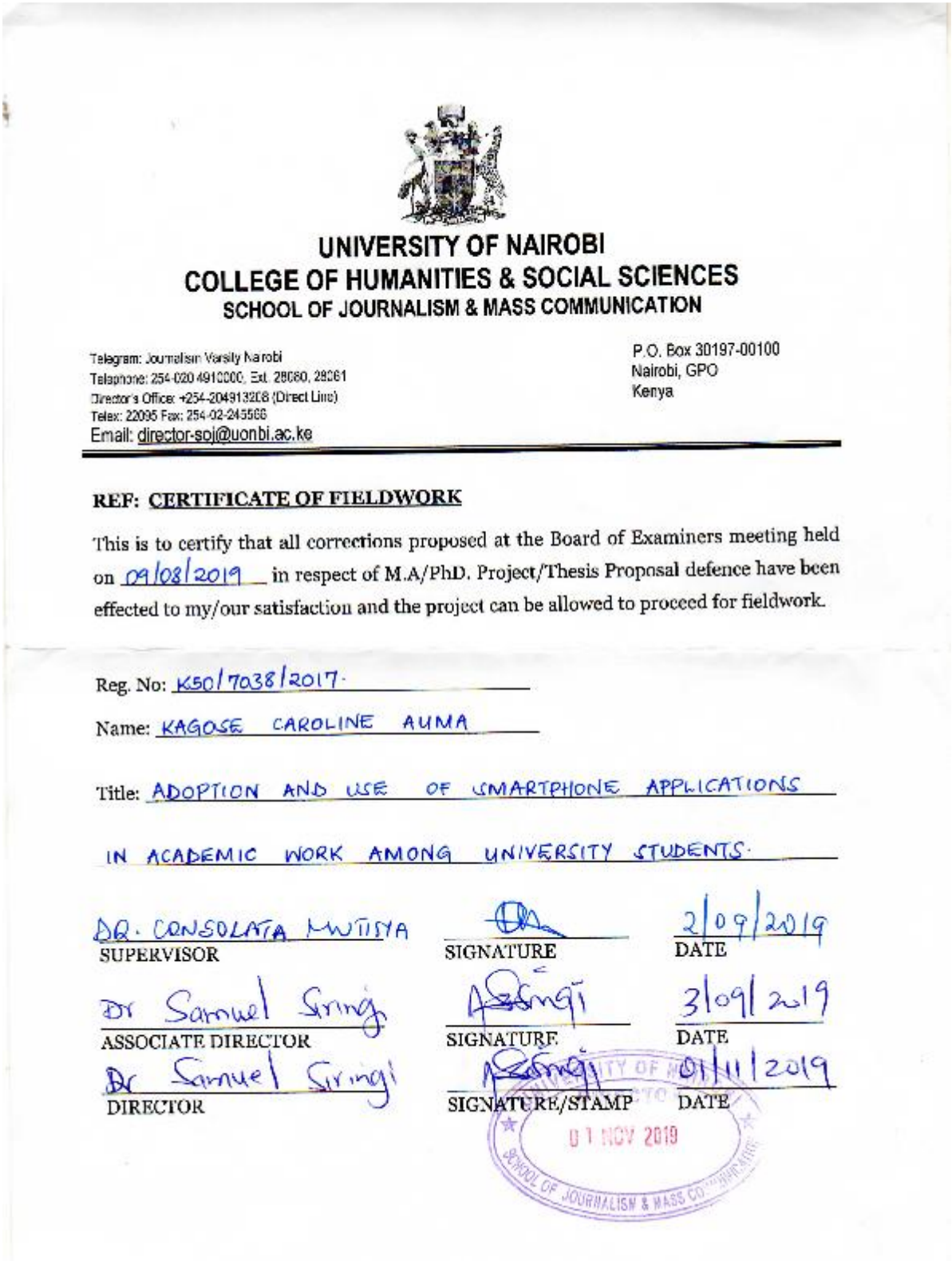
……..

22. What other services would you like your school to offer in regard to smart device applications?

APPENDIX II: INTERVIEW GUIDE

1. How many computers does the School of Journalism have for student use at an undergraduate level?
2. Approximately how many students does the School of Journalism facilitate on a daily basis?
3. What is the frequency of student attendance in the computer lab according to year of study and reason for use?
4. What policies have been put in place on daily computer accessibility per student?
5. Do you think smart devices applications can be adopted by the university as an aide to education?
6. Do you have any smart device capable applications available on the computers that are easily accessible to the students?
7. What percentage of the programmes available on the computers used at the school is smart device capable?

APPENDIX III: CERTIFICATE OF FIELDWORK



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This is to certify that all corrections proposed at the Board of Examiners meeting held on 09/08/2019 in respect of M.A/PhD. Project/Thesis Proposal defence have been effected to my/our satisfaction and the project can be allowed to proceed for fieldwork.

Reg. No: K50/7038/2017

Name: KAGOSE CAROLINE AUMA

Title: ADOPTION AND USE OF SMARTPHONE APPLICATIONS IN ACADEMIC WORK AMONG UNIVERSITY STUDENTS.

DR. CONSOLATA MUTISYA SUPERVISOR	SIGNATURE	2/09/2019 DATE
Dr Samuel Siringi ASSOCIATE DIRECTOR	SIGNATURE	3/09/2019 DATE
Dr Samuel Siringi DIRECTOR	SIGNATURE/STAMP	01/11/2019 DATE

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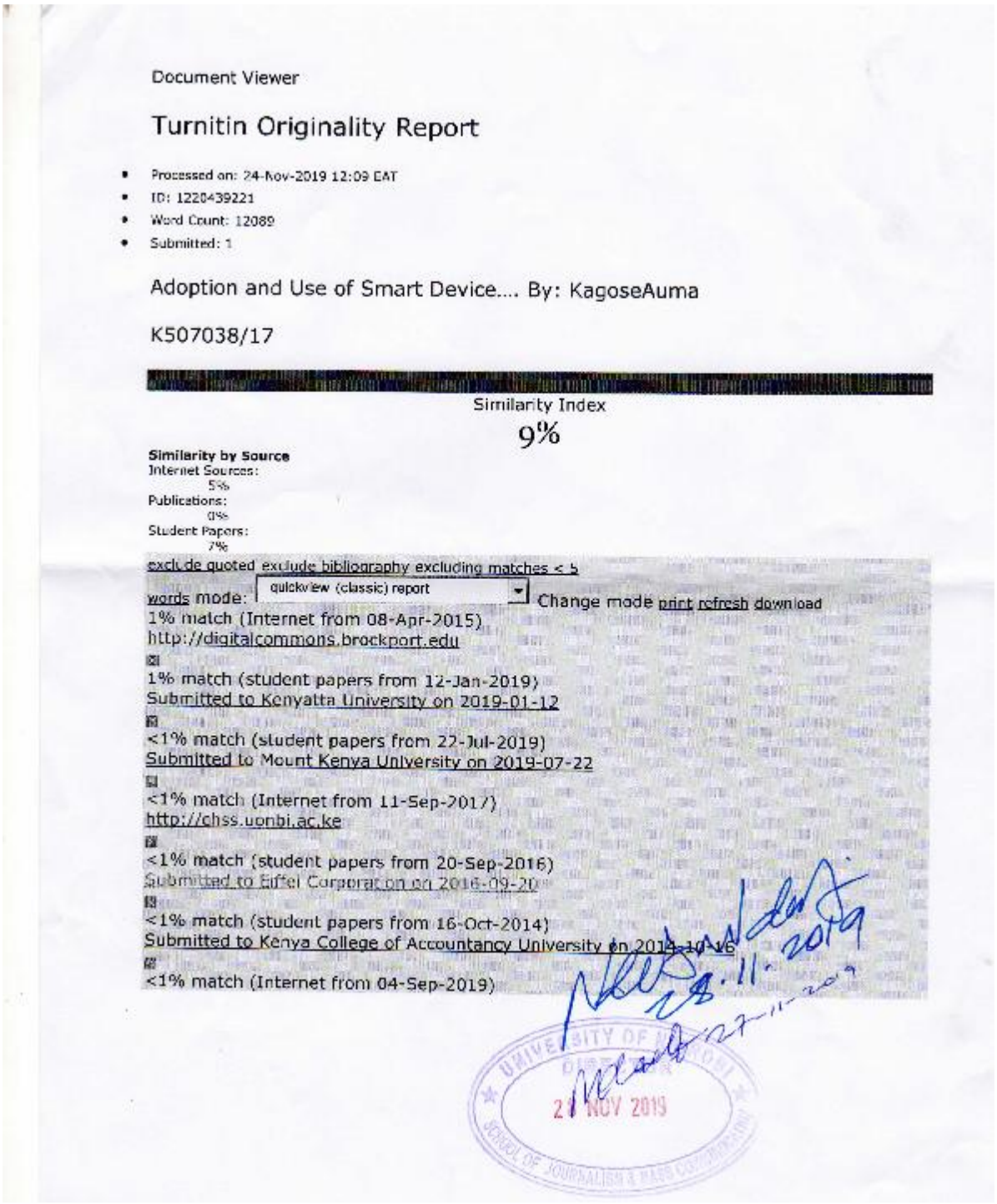

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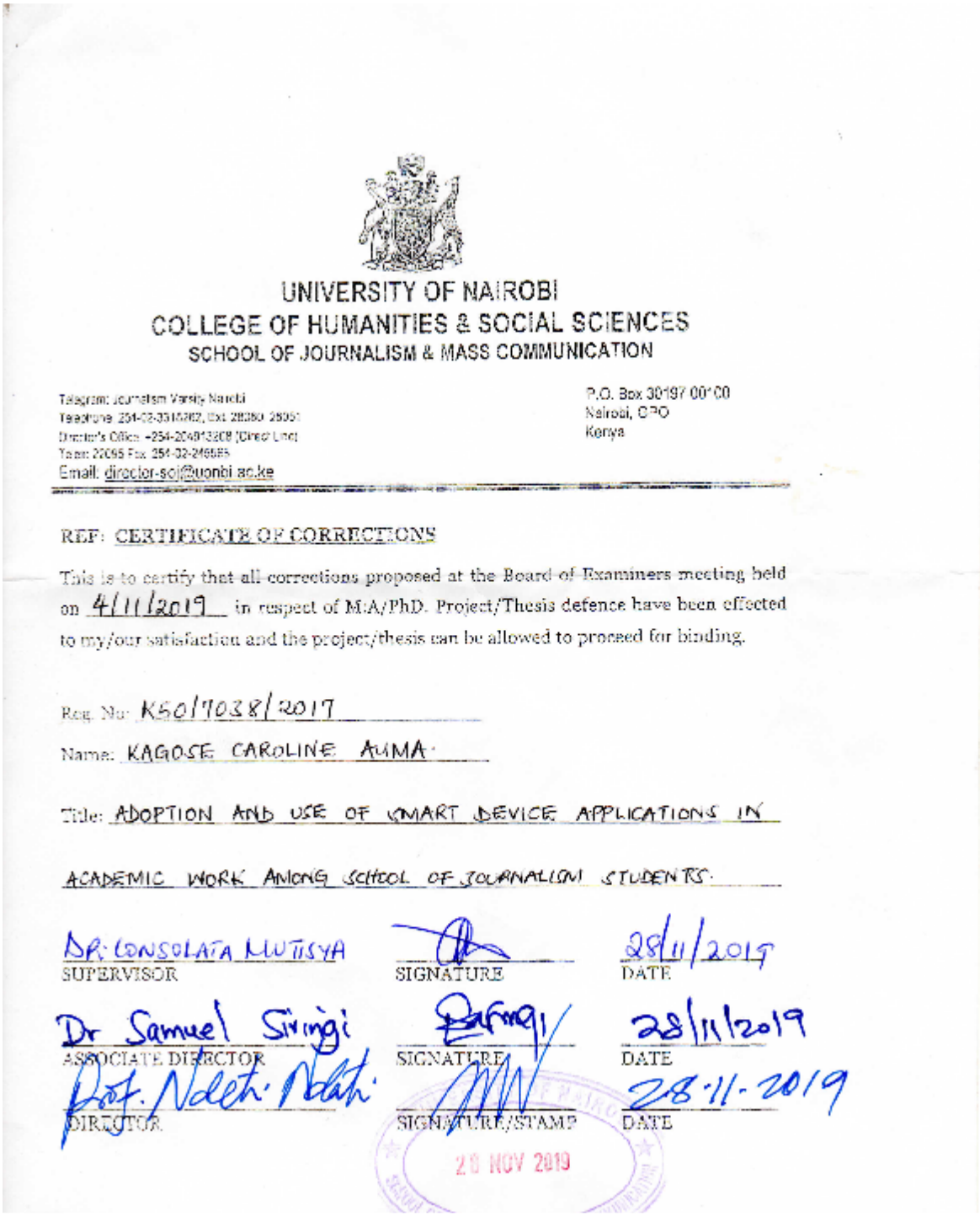

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Reg. No: K50/7038/2017

Name: KAGOSE CAROLINE AUMA

Title: ADOPTION AND USE OF SMART DEVICE APPLICATIONS IN ACADEMIC WORK AMONG SCHOOL OF JOURNALISM STUDENTS

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