

**DETERMINANTS OF SMARTPHONES ADOPTION AND USE AT  
KENYA AIRPORT POLICE UNIT, KENYA**

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## **DECLARATION**

This project is my original work and has not been presented for a degree in any other university

Signature ..... Date.....

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## **DEDICATION**

I dedicate this research report to my lovely cherished wife Damiana Kamwenzwa and to my sons Fabian Mutuku and Felix Munyao for their understanding and overwhelming moral support as I pursued my dream of acquiring a Master's degree in my area of specialization with a view of broadening my strategic leadership and management skills in the security management.

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## TABLE OF CONTENTS

<b>DECLARATION.....</b>	<b>ii</b>
<b>DEDICATION.....</b>	<b>iii</b>
<b>ACKNOWLEDGEMENTS .....</b>	<b>iv</b>
<b>TABLE OF CONTENTS .....</b>	<b>v</b>
<b>LIST OF TABLES .....</b>	<b>ix</b>
<b>LIST OF FIGURES .....</b>	<b>x</b>
<b>OPERATIONAL DEFINITION OF TERMS.....</b>	<b>xi</b>
<b>LIST OF ABBREVIATIONS AND ACRONYMS.....</b>	<b>xii</b>
<b>ABSTRACT.....</b>	<b>xiv</b>
<b>CHAPTER ONE: INTRODUCTION.....</b>	<b>1</b>
1.1 Background of the study .....	1
1.1.1 Smartphones Use .....	3
1.1.2 Smartphones Adoption.....	5
1.1.3 Kenya Airport Police Unit (KAPU).....	6
1.2 Statement of the problem. ....	7
1.3. Objectives of the study.....	9
1.3.1 General objective .....	9
1.3.2 Specific objectives .....	9
1.4 Research Questions .....	9
1.5 Significance of the Study .....	9

1.6 Scope of the study.....	10
1.7 Limitations of the study.....	11
1.8 Assumptions of the study.....	11
1.9 Organisation of the study .....	11
<b>CHAPTER TWO: LITERATURE REVIEW.....</b>	<b>13</b>
2.1 Introduction.....	13
2.2 Theoretical Literature Review .....	13
2.2.1 Technology Acceptance Model .....	13
2.2.2 Diffusion of Innovation Theory (DOI) .....	15
2.2.3 TAM 2 and 3.....	17
2.3 Empirical Literature Review .....	19
2.3.1 Perceived Ease of Use .....	19
2.3.2 Behavioural Intention to Use Smartphone Technology.....	21
2.3.3 Perceived usefulness and use of smartphones .....	21
2.4 Summary of Empirical Review .....	24
2.5 Conceptual Framework.....	26
<b>CHAPTER THREE: RESEARCH METHODOLOGY .....</b>	<b>27</b>
3.1 Introduction.....	27

3.2 Research Design.....	27
3.3 Target Population.....	27
3.4 Sample Size and Sampling Techniques .....	28
3.5 Data Collection Instruments .....	29
3.5.1 Pilot Test .....	30
3.5.2 Validity of the Data Collection Instruments .....	30
3.5.3 Reliability of the Data Collection Instruments .....	30
3.6 Data Collection Procedures.....	31
3.7 Data Analysis and Presentation .....	32
3.8 Ethical Considerations .....	33
<b>CHAPTER FOUR: RESEARCH FINDINGS AND DISCUSSION .....</b>	<b>34</b>
4.1 Introduction.....	34
4.2 Pilot Study.....	34
4.3 Response rate .....	34
4.4 Respondents socio-demographic information.....	35
4.5 Respondent’s work information.....	36
4.6 Use of smart Phone in Crime Prevention.....	38
4.7 The ease of smart phone use by Police officers in crime prevention.....	40
4.8 Effects of police officer’s personal norm on use of smart phone in crime prevention ..	43
4.9 Inferential Statistics .....	48
4.9.1 Coefficient of Determination Results .....	48

4.9.2 Multiple Regression Analysis Model Results.....	49
<b>CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS .....</b>	<b>51</b>
5.1. Summary.....	51
5.1.1 Ascertain the effect of perceived usefulness on smartphones adoption and use ....	51
5.1.2 Determine impact of perceived ease of use on smartphones adoption and use .....	52
5.1.3 Analyse the effect of subjective norms on smartphones adoption and use.....	52
5.1.4 Factors that affects the implementation of smartphones adoption and use .....	53
5.2 Conclusion .....	54
5.3 Recommendations.....	55
5.4 Suggestions for Further Research .....	55
<b>REFERENCES AND APPENDICES .....</b>	<b>57</b>
<b>APPENDICES .....</b>	<b>56</b>
APPENDIX I: LETTER OF TRANSMITTAL .....	63
APPENDIX II: RESEARCH QUESTIONNAIRE FOR AIRPORT POLICE OFFICERS ...	64
APPENDIX III: LETTER OF AUTHORISATION .....	73
APPENDIX IV: LETTER OF RESEARCH APPROVAL .....	74
APPENDIX V: PERMISSION TO SEEK FOR STUDY PERMIT .....	75
APPENDIX VI: RESEARCH AUTHORISATION LETTER.....	76

## LIST OF TABLES

Table 2.1	Summary of empirical literature .....	24
Table 3.1	Target sample population frame .....	28
Table 3.2	Sample size and Sampling Technique frame .....	29
Table 4.1	Respondents by Gender, Age and the level of education .....	36
Table 4.2	Police officers Period of service, Rank, section and the length of service .....	37
Table 4.3	Response on Police officer's usage of smart phone in crime prevention .....	39
Table 4.4	Police officers rating of their proficiency of smart phone applications in policing..	40
Table 4.5	Frequency of smart phone applications Usage in crime prevention duties .....	41
Table 4.6	Police Officers attributes of smart phones integration in crime prevention.....	42
Table 4.7	Frequency of smart phone applications use in communication .....	44
Table 4.8	Police Officers attributes of smart phone usage in crime prevention.....	44

Table 4.9 One Sample statistics for the objectives study .....	46
Table 4.10 One Sample statistics for the study of variables .....	47
Table 4.11 Model Summary .....	48
Table 4.12 Significance of Regression Model .....	49
Table 4.13 Coefficients of Regression Model .....	50

### **LIST OF FIGURES**

Figure 2.1: Technology Acceptance Model.....	14
Figure 2.2: Diffusion of innovation theory .....	17
Figure 2.3: Conceptual Framework.....	26
Figure 4.1: Response Rate .....	35

## **OPERATIONAL DEFINITION OF TERMS**

**Smartphones Adoption:** is the social acceptance, appropriation, and application of  
smartphone technology.

**Smart phones:** Are mobile gadgets that combine computing and mobile phone capabilities.

**Smart phones use:** is a method of using mobile devices that combine computing and  
mobile  
phone capabilities.

**Subjective norms:** This research uses subjective norms to explain service industry  
employment requirements based on factors such as working circumstances and peer pressure.

**Perceived ease of use:** is what percentage of police officers think adopting smartphone  
technology would be effortless.

**Perceived usefulness:** Perceived usefulness in this study indicated that a police officer believed that using a certain application framework would significantly improve their job performance within the setting of an organization.

### **LIST OF ABBREVIATIONS AND ACRONYMS**

AIG	Assistant Inspector General
ANU	Anti Narcotics Unit
ATPU	Anti Terror Police Unit
ASP/SP/SSP	Assistant Superintendent/Superintendent/Senior Superintendent of Police
CCTV	Closed Circuit Television
CI	Chief Inspector
CP	Commissioner of Police
CPL	Corporal

DCI	Directorate of Criminal Investigation
DCIO	Divisional Criminal Investigation Officer
DNA	Deoxyribonucleic Acid
DOI	Diffusion of innovation theory
FCIO	Formation Criminal Investigation Officer
ICT	Information Communication Technology
IP	Inspector
IT	Information Technology
JKIA	Jomo Kenyatta International Airport
KAPU	Kenya Airport Police Unit
MIA	Moi International Airport
NACOSTI	National Commission for Science, Technology and Innovation
OCS	Officer Commanding Station
OCPD	Officer Commanding Police Division
OCPP	Officer Commanding Police Post
PC	Police Constable
S/SGT	Sergeant/Senior Sergeant
TAM	Technology Acceptance Model
PEOU	Perceived Ease of use
PU	Perceived Usefulness

SPSS

Statistical Package for social science

UTAUT

Unified Theory of Acceptance and Use of Technology

## **ABSTRACT**

Over the past ten years, smartphones have been invented and have become more and more ingrained in people's lives, serving both social and professional purposes. According to some experts, smartphones may have negative consequences on the workplace, such as lowering productivity, isolating employees from their duties, adding stress from personal issues, and encouraging poor behavior. While some organisations may encourage their staff to use their smartphones as tools to increase the efficiency in their organisation, it can be challenging for organisations to impose a policy that forbids the usage of smartphones. Although there is a lot of potential for smartphone use to enhance policing, the research on police smartphone usage is lacking, which raises concerns about the effects of smartphones on policing. The research set out to determine what elements in the Kenya Airport Police Unit's environment encourage police personnel to embrace and utilize mobile apps for the purpose of crime prevention. The police department isn't making the most of its smart phones because its officers aren't using them to their full potential. The organization's attempts to decrease crime might benefit from seeing how police personnel utilize mobile apps. Because of their convenience and low cost, police departments may benefit from smart phone apps. Perceived utility (PU), perceived ease of use (PEOU), and the idea of the diffusion of innovations (DOI) were the study's guiding concepts, and they were crucial to the successful rollout of cellphones. Subsequently, SPSS was used to create visual representations of the quantitative data using frequency and percentage. After processing, the data was presented in both graphical and tabular formats. After elucidating the meanings of the qualitative data, thematic analysis was used, and inferential statistics, such as multiple regressions, were used to identify the link between the variables. The research aimed to provide light on the connection between utility, usability, and subjective norms in regards to the adoption and usage of cellphones by the Kenya Airport Police Unit in Kenya. All appropriate norms and standards for such a research were adhered to. Smartphones were found to be effective instruments for crime prevention by the Kenya Airport Police Unit. The modified technology acceptance model (TAM) indicated that social media and messaging apps including Facebook, WhatsApp, Twitter, emails, and SMS all provide a positive impact on crime reduction. It showed that the usage of smartphones by police had a positive impact on reducing crime. It was discovered that police efforts to use smartphone technology had significantly good benefits on crime prevention. Research findings should inform the development of specialized police mobile apps and the training of police personnel to make better use of existing applications.

## **CHAPTER ONE: INTRODUCTION**

### **1.1 Background of the study**

The growth of information and communication technologies has greatly impacted police smartphone technology. Technology has aided in both law enforcement and the dissemination of information. According to (Cooke, Jackson, Lindsay, 2014). Keep in mind that today's crimes are often transnational, thus the use of technology in law enforcement, in addition to more conventional police practices, is inevitable and should be unrestricted.

In Sweden, citizens can participate in regular police work by utilizing social media apps on their smartphones, such as Twitter and Facebook. In order to communicate local safety information with law enforcement, this technology has moved from big cities to rural police departments. (Ceccato & Dolmen, 2013).

Dlodlo (2015) in South Africa acknowledged the police's main problems of year-to-year decline in crime rate. In doing so, the Internet has been used to guarantee the protection of the world and to promote remedies for crimes. The National Police service of Kenya is needed to provide protection, maintain the environment, protect peace, protect life and property. It also prosecutes offences, gather information, deter and detect criminal activities, hunt for suspects, enforce all the rules and legislation it is tasked with and, in compliance with National Police Service Act 2011, the National Police Service is expected to provide help to people in need.

A National Police Policy Task Force report (2009) highlighted shortcomings in their systemic weaknesses to implement modern technology by police forces. The systems lacked basic information and communication capabilities, facilities and equipment, and the absence of an integrated computer network and communication system linking police stations. This

compromises the police's capacity for police purposes to use quick and inexpensive contact devices. The police have neglected to provide vital facts or evidence to aid them not only in detecting suspects, but also in educating them of crime rates or trends and in the handling of case.

According to the 2014 annual study of the National Police Service, 69,736 criminal offences, shows reductions of 2096 or 3% compared with 71,832 criminal cases in 2013. The total crime registered in 2013 was down from the 77,852 cases reported in 2012, by 6,020 cases or less, 7.7 percent. Nairobi is a leading hub in ICT innovations in Africa in the last 5-10 years and has seen rapid progress in the use of smartphone technology (Frilander, Lundine, Kutalek, & Likaka, 2014).

Although the ICT adoption by Kenya's society has been rapid, ICT has not systematically been integrated in their operations by the Kenya Airport Police Unit and has tended to rely on face to face communication and sometimes radio. Individual police officers make their own smartphones, an integral part of the day-to-day public relations. While not given priority due to resource restrictions, the importance of expansion in the use of ICT as part of reforms began in 2009.

The mobile phone, which has become so integral to modern life, is a revolutionary device that has liberated our ability to stay in constant contact. From a simple "technological object" to an essential "social object," it is altering people's daily life (Srivastava, 2005). The proliferation of smartphones is worrying, and manufacturers are rapidly tailoring their wares to individual consumers' interests. Smartphones have altered human behaviour in several ways, including how people see themselves and how they relate to others.

In the security and police sectors, rapid technological changes have occurred in recent decades. Koper, Lum, Hibdon (2014) noted that IT has brought significant developments in

mobile phones, there are many technologies that have a significant impact on police departments, including closed-circuit television (CCTV), license plate readers, DNA testing, and video surveillance systems. It's also vital to remember that law enforcement organizations invest a lot of money on technology in order to increase their efficacy and efficiency. This is because the fight against crime around the world continues to pose a major challenge to law enforcement officers in recent years (Quarshie, 2014).

According to a plethora of studies, people are more likely to find something beneficial if they find it easy to use (King & He, 2006). If people perceive that a technology is straightforward to use, they are more inclined to embrace it (Bruner & Kumar, 2005). Nonetheless, the connection is still ambiguous (Aladwani, 2002). More subsequent research (such as Jantan et al. (2001) and Shyu & Huang (2011)) have refuted this finding, however Gefen & Straub (1997) concluded that the link was not essential in anticipating the adoption of email as a technology.

Recent research in the realm of e-commerce, however, has demonstrated a correlation between the two, since it seems to reason that consumers who view online purchase as easy should also show an inclination to view it as value, as argued by Ramayah and Ignatius (2005). As a result of their own positive experiences with online shopping, customers have a propensity to form favorable impressions about the convenience and ease with which it is often conducted. This is in accordance with the findings of Heijden's (2000) study, which argues that customers would value online shopping more if the websites are easier to use.

### **1.1.1 Smartphones Use**

According to Research Gate, smart phones use is how mobile devices that combines mobile telephone and computing functions are used. Smart phone use is measured by experience, knowledge and involvement to use the system. Smartphones are currently not being used for

policing at Kenya Airport Police Unit. Fixed phones are used for intercom purposes in the offices and radio communication in the field. This has made it hard to detect white collar crime committed at the airport being a port of entry into the country.

According to Research Gate, the resources provided by smartphones in the 21st century must be explored and improved in order to improve knowledge exchange and policing in the Kenya Airport Police Unit. To realize the advantages of this method, it is advisable to investigate elements that influence adoption and use by the Kenya Airport Police Unit on smart phones for combating crime. The survey discusses Kenya Airport Police Unit's adoption and use of smartphones. The research on how Kenya airport police Unit attempts to deter crime was focused on the perceived ease of use and perceived useful elements of the M-TAM mobile applications and Diffusion of Innovation Theory.

According to the TAM, perceived utility refers to how much a person believes using a particular technology will enhance their capacity to complete their tasks. According to Davis et al. (2021), perceived utility describes how customers perceive the result of the interaction. When people share knowledge, they connect better, perform better, and build greater careers. The capacity to save training expenses and maintain know-how even if staff members opt to work elsewhere are two advantages of knowledge sharing at KAPU.

All information affecting KAPU employees' everyday lives, including layoffs, changes in the hours worked, wage and benefit adjustments, needs to be communicated directly to them. Continuous improvement has always relied on the sharing of best practices. The objective is to find the most effective method of doing something, then implement it across the entire KAPU to raise everyone's performance to the maximum level.

Subjective norms are the expectations that a prominent individual or group would support and promote a specific conduct. Subjective norms are the desire to agree with other people's

opinions and the perceived social pressure from others to behave in a specific way. Everyone views life, in the eyes of law enforcement officers, in the same way. As a result, it frustrates the officer when a witness is unable to provide the information that is required and, in the officer's opinion, should be known by the witness. Smartphones will help in evidence gathering for the witnesses.

Peer influence is at play when you choose to do something you ordinarily wouldn't do because you want to be liked and respected by your friends. Not all instances include being made to perform any action. Peers influence adoption of smartphones because of the sense of belonging in embracing technology. The underlying beliefs, presumptions, values, and social standards that shape the psychological and social climate of a certain organization are referred to as organizational culture. Being a point of entry where people from many nations enter the country, KAPU as an entity should accept and use smartphones.

### **1.1.2 Smartphones Adoption**

According to Research Gate, smartphone phrase "adoption" describes how smartphone technology is embraced, incorporated, and used in society. Adoption is measured by crime rates reported, number of arrests made, fines issued as well as calls for service made as a result of active use of smartphones. The lack of adoption of smartphones has led to complaints from civil society, national police service commission and members of the public as police is regarded as not embracing modern technology. Significant modifications have been made to police work and equipment as a result of mobile technologies. (Samuel Tanner, Michaël Meyer,2015).

The adoption of smartphones by the Kenya Airport Police Unit in the war against crime is not known, though mobile devices are thought to be influential. Smartphones can be used in profiling of suspects which is not the case currently. Radio communication currently in use

relies on voice but smartphones will send pictures in real time. These smartphones are privately owned by the police officers and can be reached via both mobiles and social network pages.

Around the world, public safety agencies and organizations are focusing more and more on smartphones. Agencies now view cellphones as more than just a call and texting device because of its undeniable agility. Smartphones give organizations the ability to work more effectively, retain real-time situational awareness, and improve first responder safety when combined with secure, user-friendly software apps and ruggedized accessories. For organizations trying to implement new technology, there are always obstacles to overcome, particularly when the equipment is distributed on an individual basis. Fortunately, there are several strategies and recommendations for removing these typical barriers to smartphone and tablet use.

### **1.1.3 Kenya Airport Police Unit (KAPU)**

Kenya Airport Police Unit is a formation of National Police Service started in 1974 and is tasked with maintenance of law and order in airports and airstrips in Kenya. It consists of both general duty and directorate of criminal investigations(DCI) officers.

It has four divisions namely Nairobi, Mombasa, Kisumu and Eldoret. Nairobi consists of JKIA, Wilson, and Isiolo police stations. Mombasa has MIA, Manda and Malindi police stations as well as Ukunda police posts. Eldoret has Eldoret police station as well as Eldoret airstrip, Kitale and Lokichogio police posts. Kisumu has Kisumu police station.

The formation is headed by commandant whereas DCI is headed by FCIO. Divisions are headed by OCPDs, stations by OCSs, and police posts by OCPPs. DCI has four divisions in Nairobi, Mombasa, Kisumu and Eldoret headed by DCIOs. It also has ANU, ATPU units as well as Bomb Squad and Dog Unit.

Kenya Airports Police Unit, Nairobi City County is the geographical location for the report. Although the ICT adoption by Kenya's society has been rapid, ICT has not systematically been integrated in their operations by the Kenya Airport Police Unit and has tended to rely on face to face communication and sometimes radio. Individual police officers make their own smartphones, an integral part of the day-to-day public relations. While not given priority due to resource restrictions, the importance of expansion in the use of ICT as part of reforms began in 2009. The division is cosmopolitan and has all sorts of crimes in Kenya's capital. It is chosen because it offers a good area of research and is considered busy with all forms of crime exposure, and police officers working there are considered as owners and use smartphones in the field of crime prevention.

## **1.2 Statement of the problem.**

Crime is a problem that hinders the overall development of countries and threatens their material and spiritual well-being. Additionally, it undermines human dignity while fostering an atmosphere of violence and fear. Numerous strategies have been used since the 18th century to combat crime and unrest. Most of the world's leading countries have led their countries to their current status by continuously controlling crime through all possible and applicable strategies including modern information communication technology. ICT especially smart phone computing has been growing widely in its application in all sectors.

Elsewhere police departments have been in forefront in application of smart phone application in crime reporting. Social networking and other smartphone apps are quite popular in Kenya, according to studies. When it comes to Facebook users, for example, Kenya ranks sixth globally and first in East Africa (Internet World Stats, 2022a). In addition to Facebook, Twitter has seen significant growth in recent years. According to Portland (2022), Nairobi is "the most active city in East Africa and the sixth most active on the

continent" when it comes to tweeting. Indeed, Kenya has been dubbed the world's most technologically advanced nation, and according to recent surveys, it is also setting the bar high for social media usage (Macharia, 2021). As this application gets their applicability in wide range of areas of human life, it is not clear how these applications have revolutionized the Kenya Airport Police officers in sharing of criminal related information with colleagues.

National Police Service 2022 annual report, 69,736 criminal cases were reported in which it was a decrease of 2,456 cases or 3% as compared to 2021 which recorded 71,832 cases. In 2021, the overall crime recorded was a decrease of 6,020 cases or less 7.7% from 77,852 cases reported in the year 2020. The use of smart phones by police officers in fighting crime remains unknown although smart phone technology is believed to have an influence in which need to be ascertained. These individually owned smart phones by police are fit to access to all form of smart phone applications and social network site.

Modernization of the service continues to get keen government focus in effort to address the insecurity in the country. This modernization entails adoption of information technology in crime prevention approaches which has so far not made the Kenya society free from danger and fear as envisioned by our development blueprint of Vision 2030 thereby creating a gap which ought to be filled (Kenya Vision 2030 Research Team, 2007). The study made application of technological acceptance models (TAM) to explore how police officers' in this geographical locale are influenced by the smart phone in crime prevention.

Though, the application of social media application may have wide applicability in crime prevention among the police, the use of smart phone application in crime prevention still remains unclear especially in Kenya Airport Police Unit. This study examined how the adoption and use of smart phone technology by the Kenya Airport Police Unit, Kenya has influenced crime prevention.

### **1.3. Objectives of the study.**

#### **1.3.1 General objective**

The purpose of this study is to establish the determinants of smartphones adoption and use at Kenya Airport Police Unit, Kenya in detection and prevention of crime.

#### **1.3.2 Specific objectives**

- (i) To ascertain the effect of perceived usefulness of smartphones adoption and its use at KAPU, Kenya.
- (ii) To determine the impact of perceived ease of use on smartphone adoption and use at KAPU, Kenya
- (iii) To analyse the effect of subjective norms on smartphones adoption and use at KAPU, Kenya.

### **1.4 Research Questions**

- (i) How does perceived usefulness affect smartphones adoption and use at KAPU, Kenya?
- (ii) How does perceived ease of use affect smartphones adoption and use at KAPU, Kenya?
- (iii) How do subjective norms affect smartphones adoption and use at KAPU, Kenya?

### **1.5 Significance of the Study**

Smartphones have a profound impact on the police force. Every day, police officers in front of the airport use cutting-edge smartphone technology to enhance their knowledge, skills, and abilities in the areas of enforcement and investigation. It facilitates a more mutually beneficial relationship between compliance and the general populace.

This study is significant as it seeks to explore a very specific human aspect that touch on their understanding, purpose and actions towards the use of smartphones in an attempt to improve their use, efficiency and productivity output. The information gained in this study informs the National Police Service of the value and intent of airport police officers on the use of smartphones in crime prevention approaches and assists in decision-making that addresses their performance. The report also adds to the limited and well-known literature on the usage of smartphones by police officers in the area of crime prevention.

The findings of this study can also be used by the government and policy makers to create and implement a strategy that will improve airport police performance. Policies and regulations may lead to the training of security staff and potential workshops to improve the ability of the Kenya Airport Police Unit to use smartphones to deter crime.

Last but not least, the study's findings help close the knowledge gap on the subject. The study's findings are a useful addition to the existing learning between smartphone use and the effectiveness of airport police in crime prevention.

### **1.6 Scope of the study**

The study's geographic coverage was the Jomo Kenyatta International Airport in Nairobi County, home to the Kenya Airport Police Unit's headquarters. It explored 1-10 years of police experience operating between 2010 and 2020 after smartphone use began in the mid-2000s. The study was carried out between October to December 2022. The variables under study were perceived ease of use by police officers, perceived utility, subjective standards that affect the use of smart phones as independent variables, and their relationship when used by the Kenya Airport Police Unit as dependent variable. The respondent were police officers who are actively and indirectly involved in the prevention of crime, including managerial and leadership positions at the airport. The study focused on the categories of smart phone

applications for group communication and social networking through short text messages, WhatsApp, Facebook, twitter, e-mail, etc.

### **1.7 Limitation of the study**

Firstly, the airport police officers individually have a varied capacity and willingness to use smartphones in the prevention of crime due to various factors such as experience, training, visibility, etc. Secondly, the airport police officers collectively have restrictions on the use of smart phones in the prevention of crime due to the various levels of individual motivation.

Thirdly, the airport police officers using smartphones to deter crime are affected by personal norms outside the reach of this report. Lastly, the use of smartphones by airport police officers in the prevention of crime is influenced by the introduction of a number of management approaches.

### **1.8 Assumptions of the study**

It is assumed that police officers are easily affected by internal and external influences of smartphones in crime reduction. The police are also thought to be affected by success factors in the obvious usage of smart phones in criminal prevention.

Police officers who chose to use smart phones are often considered to be relying on their personal standards. The use of smart phones in crime reduction is believed to be influenced by the introduction of diversified management approaches. The study assumed that the respondents were possibly impaired by the recall issue.

### **1.9 Organisation of the study**

The proposal is divided into five parts. In the first chapter, we discuss why this study is necessary, what we want to learn from it, what limitations we anticipate, and how we propose to conduct the research. The second chapter surveys the relevant theoretical and empirical

literature and highlights any gaps in our understanding. The intellectual underpinnings are also laid forth. In Chapter 3, we discuss the procedures that were used to complete the research. Discussion of findings was the primary topic of Chapter 4. Chapter 5 is the last section of the research and includes a synopsis, final thoughts, and suggestions.

## **CHAPTER TWO: LITERATURE REVIEW**

### **2.1 Introduction**

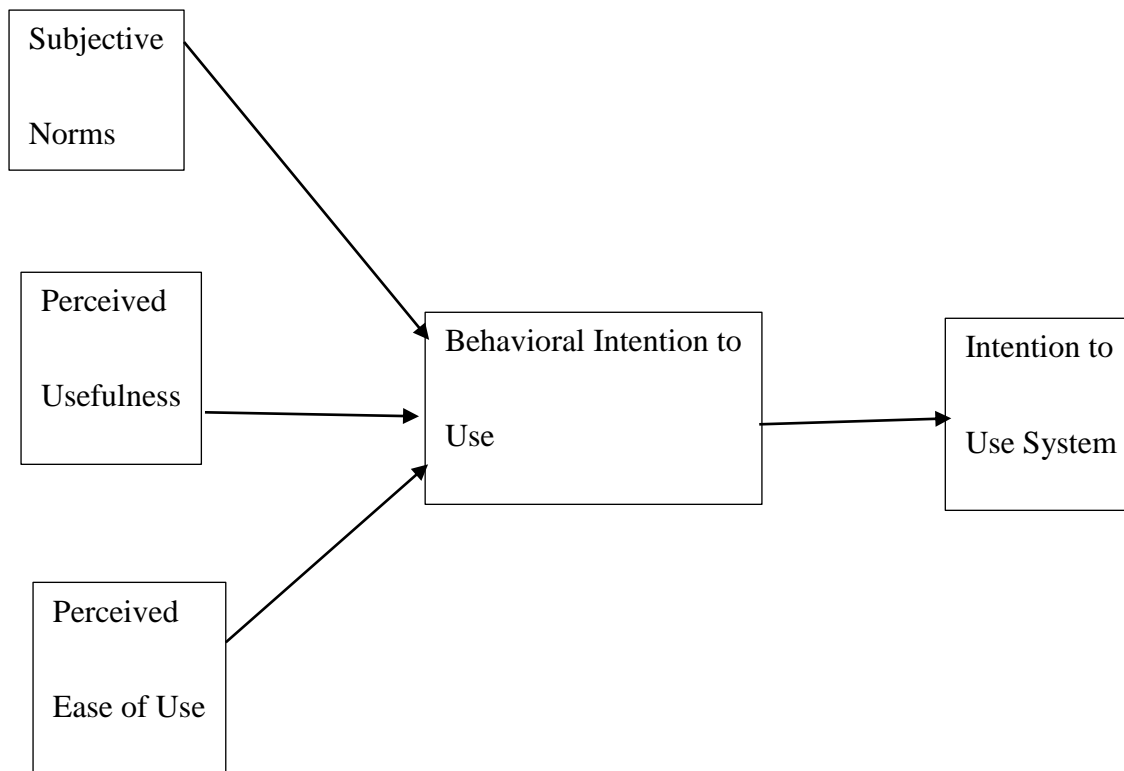
Airport security personnel and other market actors are studied to develop a theoretical model for effective mobile technology use. Phone conversations, texts, emails, and monitoring tools are just some of the social network platform applications made possible by smartphones. ICT in the form of smartphones has lately been adopted and used by the police organization across all of crime prevention. If airport security personnel are intrinsically motivated to use them, they might be a useful tool for preventing criminal activity. Perceived utility (PU), perceived ease of use (PEOU), and the adoption of technology in connection to individual perception and behaviour are the focus of the literature, which is based on Technology Acceptance Models (TAM). This chapter explores how the TAM mandated the use of smartphone apps by airport police officers while they carried out their primary responsibility of maintaining law and order.

### **2.2 Theoretical Literature Review**

#### **2.2.1 Technology Acceptance Model**

Users of computerized technology are portrayed in the TAM (Technology Acceptance Model), a theory of information systems. Davis (1989) created it to characterize computer behaviour. It implies that if consumers have access to a new software package, a number of factors impact the decision of how and when to utilize it. The idea of Diffusion of Innovations, the model of Concern Based Adoption, and the theory of Social Influence may all be utilized to foresee and explain why users would like or dislike the information system. According to Dhume, et al. (2012), TAM is a simple and strong enough model for understanding user behaviour and attitude on social networking of crime prevention. Organizational utility is a factor in the choice to accept and use new technologies. The ideas

shift in response to new knowledge and serve as a lens through which to analyse how people utilize technology in their daily lives. When the contexts of usage for TAM components are indicated, as Jokonya (2015) does, they are perceived as helpful and user-friendly. A user's purpose while interacting with technology may be used as a reliable predictor of their actions.



*Figure 2. Technology Acceptance Model by Davis (1989)*

Behaviour indicators such as utility, purported usability, arbitrary standard, alleged danger, perceived expense, and work pressure were researched by Chen, YI-ming, Bao jian (2009). Research by Lindsay et al. (2013) used the Adapted Technology Acceptance Model for Mobile Police. The study set out to determine what factors affect officer acceptance advantages. The research was meant to uncover what factors were most influential in police officers' use of mobile devices. The use of a qualitative, mostly ethnographic approach allowed for in-depth exploration of this issue. The research was based on a nine-month, mixed-methods longitudinal study of a UK police department's use of mobile technology.

The technology acceptance model (TAM) was developed into TAM2 and TAM3 to give a useful theoretical framework for a mobile police scenario. It was found that there are four basic types of factors that contribute to an officer's acceptance: efficiency, security, dependability, usability, management, and intelligence. The investigation's findings indicated a serious flaw in all three versions of the TAM: they overemphasized validating the user's viewpoint at the expense of validating the larger organizational variables present in the social and operational settings for mobile law enforcement. It was proposed that the modified mobile police model's high-level design be applied in other organizations, independent of the mobile operating system chosen, in order to overcome the barriers to adoption. Given the prevalence of smartphones in Kenya, this research analysed the unit's adoption and use of such devices.

### **2.2.2 Diffusion of Innovation Theory (DOI)**

The concept of "diffusion of innovation," developed by E.M. Rogers in 1962, was an early one in the field of social science. It was first used in communication to describe the gradual increase of support for a concept or product before its widespread adoption. As a result of this spreading, individuals progressively incorporate the innovative concept, behaviour, or object into a social structure. A behaviour is referred to as being adopted when it deviates from what the person has previously done. A person must find a notion, activity, or product innovative or novel in order to embrace it. This enables the spread to take place.

O'Connor et al. (2014) found that it is also successful in attracting and retaining individuals who are otherwise difficult to reach. Our knowledge of change is enhanced, and new avenues for collaboration and information sharing are opened up. One research found that early adopters share certain traits with individuals who embrace technologies later. Understanding the characteristics of your audience is essential before making a presentation, since these

factors may either encourage or discourage the reception of your proposal. Most people lie somewhere in the centre of the spectrum of potential early adopters, but it doesn't mean they shouldn't be taken into account. should be familiar with the demographics of the intended audience. When marketing a new product or service, marketers use a wide variety of strategies to reach all potential early adopters.

People that are creative often rush to put their ideas to the test. They have no fear and are interested in innovative concepts. These individuals are often the first to come up with novel concepts because they are willing to take calculated risks. It doesn't take much effort to appeal to this group. Cain et al. (2010), Taylor et al. (2010), and Jones & Hayter (2013) all point out that various generations have distinct ways of thinking about and interacting with social media. While increasing technological knowledge may help smooth out age gaps on Twitter, such gaps still remain (Cresci et al., 2010).

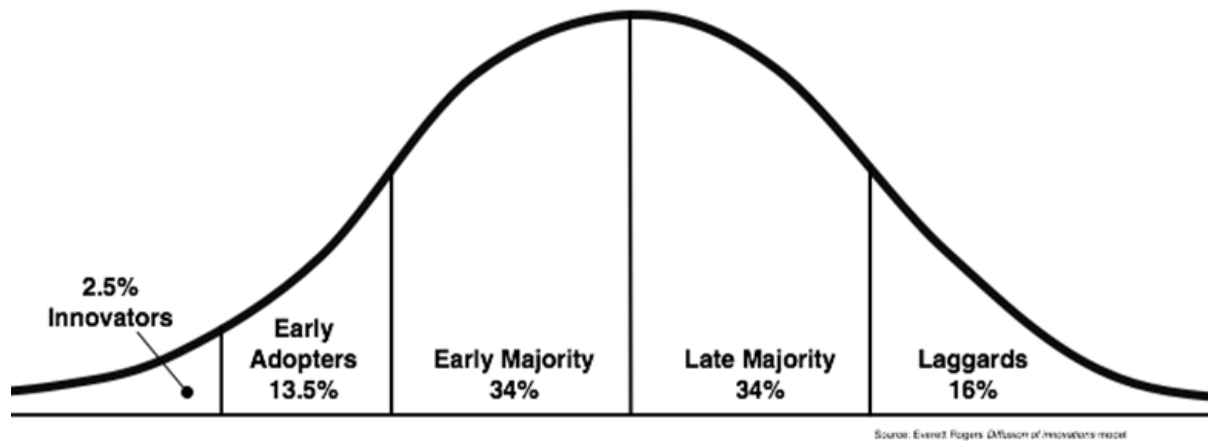
The leaders of opinion are the ones who embrace new technology first. They appreciate taking charge and adapting to new situations. They are comfortable implementing novel concepts because they realize the importance of doing so. Implementation guides and user manuals will appeal to this audience. No amount of knowledge will persuade them to alter their minds.

The third category, the early majority, is characterized by a lack of initiative but an early embrace of new concepts. However, before adopting a new idea, they often want proof of its effectiveness. You may entice this group of people using strategies like success stories and examples of practical applications of the notion.

People who are resistant to change and who wait for widespread adoption of a new concept are part of the fourth category, called the late majority. To win over this group, you may, for

example, provide statistics on how many individuals have already tested and embraced the innovation.

The last group consists of the classic and conventional laggards. They are the group that is hardest to persuade since they are the most adamantly opposed to change. Peer pressure from other adopting groups, statistics, and fear-based arguments can all



*Figure 2.2 Diffusion of innovation theory by E.M Rogers (1962)*

The procedures by which a person adopts an innovation and as a result, diffusion is finished include awareness of the need for the innovation, choosing to embrace (or reject) the innovation, utilizing the innovation initially to test it, and continued use. Five important factors, each of which is present in the five adopter types to variable degrees, influence the acceptance of an innovation.

An innovation's perceived superiority over the idea, plan, or item it replaces is measured by its relative advantage, which is the first notion. Second, the innovation's suitability for the needs, requirements, and conditions of potential adopters is assessed. The third factor, complexity, refers to how challenging it is to comprehend and/or apply the invention.

The fourth factor is triability, which refers to how much the invention can be evaluated or tried out before being decided to implement. The innovation's observability, or how well it produces measurable results, comes last.

### 2.2.3 TAM 2 and 3

Model 2 of the TAM, proposed by Venkatesh and Davis (2000), is an expansion of the original TAM that includes new primary factors for TAM policy units. It includes mental and emotional processes as well as the subjective norm, volunteering, perception, and experience. The value of labour, the calibre of the product, and the end outcome are all mental tools. Subjective norm acknowledges the influence of peers in determining how one should conduct oneself; voluntary accounting for effects of mandatory and non-compulsory uses on purpose of use; picture referring to the extent to which technology can alter one's social standing; and experience showing that a subjective norm's direct effect can decrease over time by increasing system experience. Job relevance dictates what tasks a given system can perform; performance quality positions are taken to measure how successfully a system completes tasks, and demonstrability of results is the degree to which the effects of adopting a technology can be shown (Venkatesh and Davis, 2000). By focusing only on the PU aspect's foundation and disregarding the PEOU build, TAM2 is constrained to Lindsay et al. (2011) and provides a less comprehensive understanding of the elements that need to be addressed to maximize utilization. PEOU words "user auto-efficacy" and "playfulness of the computer," "external control awareness," "computer anxiety." An individual's conviction in his or her own ability to complete a task is related to their "computer self-efficacy." It has been suggested that TAM3's emphasis on individuals rather than the wider implementation of an organization makes it less than comprehensive, despite the fact that it has been determined to be more thorough. Lindsay et al. (2014) conducted an empirical test of the applicability and transferability of the Model M-TAM to other police forces in the UK. Previous studies (Lindsay, 2013) shown that the M-TAM was built and disseminated to different police agencies using a variety of mobile devices. He said the approach will be helpful for the global troops in carrying out the 'mobilization' plan.

## **2.3 Empirical Literature Review**

### **2.3.1 Perceived Ease of Use and smartphone use**

According to the Technology Adoption Model (TAM) (Davis et al., [www.ccsenet.org/mas](http://www.ccsenet.org/mas)), PEOU plays a significant role in the spread of a given innovation. Page 51 of Volume 6, Number 4 of the April 2012 issue of the Canadian Center for Applied Science (1989). Canadian Center for Science and Education. Users anticipate substantial mental and physical labor when they think about using technological solutions. For each given technological system, the percentage of effort-free operation (PEOU) is described (Davis, 1989). Buton-Jones and Hubona (2005) argue that the interfaces of online stores and other ubiquitous technologies are crucial to their ease of use. More customers are more likely to embrace a technology, as shown in research conducted by Selamat et al. in 2009. One technology may be perceived as being simpler to use than another, yet consumer perception of a technology's complexity affects how quickly it is adopted.

A system's simplicity of use increases the likelihood that it will be adopted and employed since users will have to put in less effort to master it (Teo, 2001). Other studies have shown that a system's seeming simplicity has a positive effect on consumers' attitudes on utilizing it for transactions (Bisdee, 2007; Yuliharsi & Daud, 2011). This is consistent with the findings of Childers et al. (2001), who found that customers have a more positive attitude toward online retailers who provide user-friendly experiences like being able to browse at their own pace and without too much mental strain.

Customers are more likely to embrace an easy-to-use technology, but consumers' perceptions of a technology's complexity may slow its rate of adoption. A system's simplicity of use increases the likelihood that it will be adopted and employed since users will have to put in less effort to master it (Teo, 2001). According to other researchers, customers' opinions toward using the Internet to do online shopping were favorably influenced by the system's perceived ease of use (Bisdee, 2007; Yulihastri & Daud, 2011). According to Davis, Bagozzi, and Warshaw's (1989) research, improving a technology's output quality and usability would have a beneficial impact on how useful and enjoyable it is judged to be a system of information.

It was shown that PEOU greatly enhanced customers' opinions of online stores. Users' estimations of an online store's worth were found to be significantly influenced by the PEOU, as found by Green and Pearson in 2011. According to PEOU, consumers are more likely to be receptive to the idea of making purchases online if online stores are easy to navigate (Lim & Ting, 2012, p. 54).

The usage of mobile vouchers was also shown to increase once PEOU was implemented (Jayasingh & Eze, 2010; Kwan & Chidambaram, 2000). According to Maholtra and Segars (2005), the delayed adoption of mobile commerce may be attributed to the widespread belief that using the wireless web required substantial behavioral changes. According to the research (Venkatesh, Morris, Davis, & Davis, 2003), PEOU is more popular among women, older employees, and users with less technical abilities.

Zigama (2010) discovered that primary school teachers in East Africa generally had a favourable attitude toward the use of ICTs in the classroom. Chemwei (2013) discovered that although Wanjala (2010) found that teachers' attitudes, self-confidence, judgments of the technology's utility and relevance, accessibility, pedagogical practices, and policy

development were among the elements impacting their acceptance of computer technology in the classroom. However, the level of integration of ICTs in primary teacher training colleges in Kenya is quite low.

Gakure et al. (2013) used a descriptive survey design to investigate the factors that influence the efficiency of the Mkesho in the Nairobi Area. The article said that M-Pesa and Equity have created MKesho Account, a user-friendly, low-cost bank account that allows consumers to utilize MPesa Account to deposit and receive funds from their phone. The primary purpose of this research was to discover why Mkesho service adoption rates are so low among subscribers. The survey population density in May 2013 was based on the approximately 700,000 people who were registered users of Mkesho at any one time during that month. The sample size was 100 people, which is equivalent to 0.0142% of the population.

The findings showed that although 20% of customers were using Mkesho on day 24, 80% of respondents were not. This suggested that fewer people were utilizing Mkesho's services, which was a bad sign. The findings also suggested that consumers were unfamiliar with the Mkesho service and that the availability of competing and substitute products like the simple and user-friendly Mshwari contributed to the service's low adoption rate. This illustrates that factors other than perception and attitudes affect the spread of mobile technologies.

### **2.3.2 Behavioural Intention to Use Smartphone Technology**

Intention and mental state have been linked for a long time in studies (Suki & Ramayah, 2010). Attitude toward conduct and object attitude were conceptually split by Fishbein and Ajzen (1975). The former relates to how someone rates an item, whereas the latter describes how someone rates an action. For this reason, the TAM model theoretically operationalizes attitude via the second attitude categorization. This revised attitude categorization (Suki & Ramayah, 2010) denotes the emotional response that mediates beliefs and intentions to utilize

a target system due to its usefulness and ease of use. A customer's primary point of contact with an online retailer during an online transaction is the retailer's website (Ahn, et al., 2004). Understanding customer expectations and sentiments about frequently used websites is crucial, according to previous studies (Chen et al., 2002; Suh and Han, 2002). According to studies by Cronan and Al- Rafee (2006), attitude is the single most influential factor in shaping future behavior. Happiness with online shopping has been shown to improve a consumer's inclination to participate in it (Ahn et al., 2004).

To foretell the factors influencing students' behavioral intentions about the use of mobile learning, Cheng-Min Chao (2019) in Taiwan developed and empirically tested a model (m-learning). In order to examine consumers' behavioral intention to use m-learning, this research enhanced the unified theory of acceptance and use of technology (UTAUT) by include moderators such as perceived pleasure, mobile self-efficacy, satisfaction, trust, and perceived danger. This study used a research paradigm based on many theories of technology acceptability to perform a cross-sectional analysis.

The data was acquired through a survey administered online, and structural equation modeling was utilized to evaluate the results. Partial least squares (PLS) regression was used for model and hypothesis testing. Contentment, trust, and confidence were shown to have a significant and favorable effect on future behavior. Perceived pleasure, performance expectations, effort expectations, and behavioral intention were all shown to be positively related. In addition, mobile self-efficacy strongly affected reported satisfaction, but perceived risk significantly influenced the link between behavioral intention and performance expectation. In conclusion, our research lends credence to the UTAUT paradigm and provides administrators and educational institutions with a valuable resource for developing academic mobile learning programs.

People's propensity to use mobile banking was examined via the lenses of age, financial burden, level of education, and platform safety (Korir, 2012). The study's intended sample size was 400 people, all of whom were clients of Kenya Commercial Bank Ltd. in the Garissa District. Few users thought that utilizing mobile banking services was costly, but this did not deter the researchers from their mission: they wanted to see whether or not banks would develop a technically solid, reliable, and user-friendly mobile banking system. He noted that many implications for behavior, especially those associated with perception and attitude, have not been thoroughly investigated. (Korir, 2012).

### **2.3.3 Perceived usefulness and use of smartphones**

Attitudes toward use may also be influenced by PU, a key component of the TAM paradigm (Davis et al., 1989). How much a potential user (PU) thinks a new piece of technology would enhance the way a task is completed (Davis, 1989). Achieving one's shopping objectives, as well as improving one's shopping performance and productivity, were shown to be critical variables in defining a successful consumer purchasing activity by McCloskey (2004). Customers will have favorable impressions of products and/or services that they believe provide adequate benefits or attributes to meet a problem, while they will have negative perceptions of products and/or services that they believe fall short. Online retailers that provide resources to aid in decision making are more likely to attract and retain customers, according to research by Kim and colleagues (2003).

For the same reason, Bisdee's (2007) study shows that consumers will have a favorable view of online shopping if the site they visit provides them with useful services that they cannot get in a traditional store (such as a quick way to compare different products). Supporting this idea are the findings of Childers et al. (2001), who found that consumers who had a positive

view of online shopping said that online merchants were significant because they could increase their purchasing efficiency, effectiveness, and capacity.

Thando conducted research in 2013 to determine how Zimbabwean company owners felt about and utilised MPPs. To do so, we will be using Green Mobile of Zimbabwe's given database of 1842 MPP registered agents. Independent contractors made up 558 of the 1842 agents. These representatives may help customers sign up for the MPP. Study results show that most informal business owners had a positive impression of the MPP service provider; nonetheless, the researcher suggests that the provider devote more time and energy to educating the business owners about the platform's features and benefits.

Oduor, Acosta, and Makhanu (2014) investigated the potential of Smartphone technology to reduce crime in Kenya. A smartphone app for Kenyans to use to report criminal activities was one of the study's goals. Kenyans will benefit from the ability to report crimes to the local police station, get notifications about new crime hotspots, enquire about detainees, and show their support for community police. The thesis employed computer analysis and participant observations to look at many different types of criminal behavior. The Kenyan police have conducted a large number of interviews.

The police department now has access to an online application under beta testing that can be used to register incidents, map crime, and generate reports. The mobile app was tested on a number of various Android versions to ensure compatibility. The Huawei Ideos, the Techno Swipe, and the GT-S5570Mini Galaxy were some of the other smartphones that were put through their paces in the lab. Since Android 2.1, it has been developed and evaluated by a group of experts in mobile apps. The beta version of an Android mobile app has been released. A new frontier in Kenya's fight against crime has been uncovered: mobile

technology. Oduor's (2014) research does not employ TAM, and it does not evaluate police officers' perspectives on or usage of mobile devices in the service of crime prevention.

## 2.4 Summary of Empirical Review

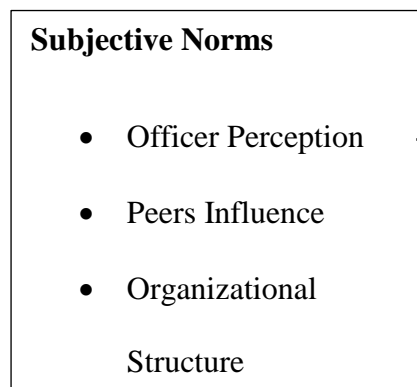
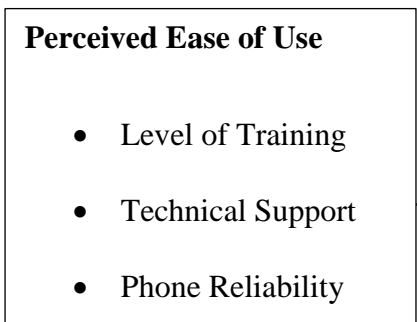
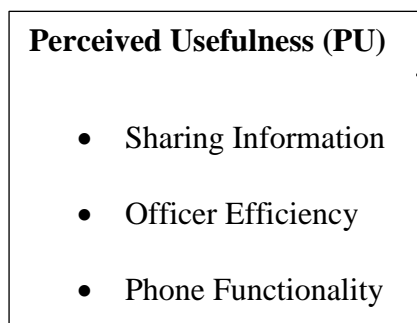
Table 2.1 Summary of empirical literature

<b>Author</b>	<b>Focus of the study</b>	<b>Major Findings</b>	<b>Knowledge gap</b>	<b>Focus of the current study</b>
Davis, Bagozzi and warshaw(2021)	Ease of use provided by technology	Positive effect on perceived usefulness	The focus is on attitudes	Perceived ease of use of smartphones
Cheng-Min Chao(2019)	Student's behavioural intentions on m-learning	Its influenced by satisfaction, trust, and effort expectancy	The focus is on educational institutions	Behavioural intention to use smartphones
Oduor, Acosta, Makhanu (2014)	Digitising police operations in Kenya	A prototype web application was created for crime reporting	How police officers perceive and use mobile devices was not done	Perceived usefulness of smartphones
Jokonya (2015)	User perceptions on information Technology	Demographic factors affect information Technology	Need to involve those to be affected by information	How smart phone technology can be used in crime

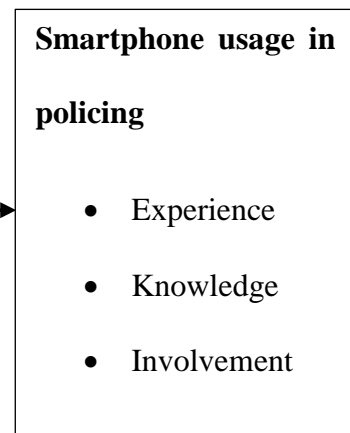
		adoption	technology adoption	prevention
Sago (2013)	Factors affecting the adoption and frequency of use	There is a positive correlation between frequency and ease of use	The focus was on university students	How smartphones adoption can aid policing

## 2.5 Conceptual Framework

### INDEPENDENT VARIABLES



### DEPENDENT VARIABLES



*Source: Adapted M-TAM by Lindsay et al (2014)*

*Figure2. 3: Conceptual framework*

## **CHAPTER THREE: RESEARCH METHODOLOGY**

### **3.1 Introduction**

This chapter detailed the research methodology used to examine police officers' opinions on the effectiveness, ease of use, and subjectivity of smartphone applications in the fight against crime. Population, sampling technique and strategy, data sources, data processing, and the reliability and validity of the instruments used in the study were all discussed at length.

### **3.2 Research Design**

Cooper and Schindler (2009) state that the research design is the blueprint for collecting, measuring, and estimating study data. According to Rajendra (2008), a research design is "the linking and organizing of the conditions for data collection and analysis" (Ozcelik & Ferman, 2006). This is done to strike a balance between process economy and relevance to the study objective.

This study used a descriptive research strategy. Descriptive research designs are constructed and often structured for the sole goal of measuring the characteristics requested in a research question. Since the purpose of the study was to describe the state of smartphone uptake and usage in the Kenya Airports Police Unit in Kenya, a descriptive research approach was appropriate.

### 3.3 Target Population.

Siruri (2019) explains that in research projects, the word "target population" refers to a grouping of everything that makes up the whole from which a conclusion is to be made. The study's target population was 1382 police officers while the sample size consisted of 274 police officers working out of the Nairobi City County headquarters of the Kenya Airport Police Unit in different general police and criminal investigative capacities. There were 197 men and 77 females, with ages ranging from 19 to 58; there were 174 regular duty officers and 100 DCI officers. In order to collect as much useful information as possible, we focused on selecting a representative sample of general duty and DCI officers across all levels, both sexes, and all ages. Below is a diagram depicting the target demographic:

*Table 3.1 Target sample population frame*

<b>Rank</b>	<b>Sample Size</b>
AIG	2
CP	4
ASP/SP/SSP	4
IP/CI	20
S/SGT/SGT	25
CPL	30
PC	189
<b>TOTAL</b>	<b>274</b>

**Source: KAPU establishment (2022)**

### 3.4 Sample Size and Sampling Techniques

Census sampling is used for the CDT, FCIO, OCPD, ANU, ATPU, and DCIO'S offices, while simple random sample is used for the remainder of the airport police force in this research. The study's methodology is well-suited to the hierarchical structure of the police department and the development of cadres. These frames are composed of a funnel whose members perform a variety of roles in the agencies that oversee police activities. The sample size is calculated to be representative of both regular and DCI officers, with consideration given to their relative numbers, ranks, genders, and ages. The diagram of the sample size and sampling method is as follows:

*Table 3.2 Sample size and Sampling Technique frame*

<b>Rank</b>	<b>Sample Size</b>	<b>Sampling Technique</b>
AIG	2	Stratified Random Sampling
CP	4	Stratified Random Sampling
ASP/SP/SSP	4	Stratified Random Sampling
IP/CI	20	Simple Random Sampling
S/SGT/SGT	25	Simple Random Sampling
CPL	30	Simple Random Sampling
PC	189	Simple Random Sampling

<b>TOTAL</b>	<b>274</b>	
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**Source: KAPU establishment (2022)**

### **3.5 Data Collection Instruments**

Saunders and Lewis (2012) state that surveys have a widely varying rate of response. Semi-structured questionnaires were used to collect the main data. Due to the hierarchical character of the police force, we will be doing a census sample of senior officers and a random selection of subordinate officers, despite the fact that we only used a single questionnaire. Participants in such research gave extensive data. The research instruments were designed with that end in mind. They appeared in the following parts: Part A gathered respondents' general knowledge, while Part B assessed respondents' impressions of the smartphone's use. In Section C, we looked at how several variables influenced police officers' usage of mobile devices. The focus of Section D was on determining how much of an effect subjective norms had on the relationship between smartphone uptake and usage within the Kenya Airport Police Unit.

Researchers used both open-ended and closed-ended questions to better understand how police officers' perceptions of smartphone use varied across geographic regions. The respondent's level of guilt was the basis for a score between 1 and 5.

#### **3.5.1 Pilot Test**

Prior to the real data collection, researchers conduct a pilot study to try out their testing instruments. Piloting data collecting devices is the most important step in the questionnaire design process since it reveals what works and what doesn't, such as imprecise instructions and questions (Nachmias & Nachmias, 1996). A researcher's ability to create coding schemes for open topics is evaluated by the pilot study (Orodho, 2009). In order to test the reliability

and validity of the research instrument, a pilot study was conducted with 30 officers, evenly split between 20 general duty officers and 10 DCI officers across ranks, gender, and age ranges.

The headquarters of the Kenya Airports Police Unit in Nairobi City County served as the site for a pilot study. The location was selected because it provides a fertile ground for study, is cosmopolitan and bustling with all types of crime exposure, and has a large population of police officers who are presumed to have access to cell phones useful in the fight against criminal activity.

### **3.5.2 Validity of the Data Collection Instruments**

Orodho (2005) defines validity as "the extent to which data collecting instruments measure what they are designed to measure" in a study. In that case, we checked the instruments' validity using three different methods. As a first step, we had an expert check the study instruments for content validity to make sure they were clear and easy to comprehend. Construct validity was evaluated via a review of relevant theoretical literature to ensure that the research was aligned with its stated goals, and criterion validity was evaluated to guarantee that each question directly and comprehensively addressed the study's stated objectives. All of the study's goals were attained, the required time was spent, and all relevant materials were compared because of this meticulous, item-by-item examination.

### **3.5.3 Reliability of the Data Collection Instruments**

A test is regarded trustworthy only if it accurately predicts results over time. As is the case where repeated testing yields the same result. According to research methods, dependability includes characteristics such as the reliability of a study's measurements and the reproducibility of an instrument's measurements and findings when employed with the same participants. Therefore, it is the reliability of the measurements used in the research.

Cronbach's Alpha, the most well-known reliability coefficient, expresses dependability as a coefficient ranging from 0 to 1 by evaluating the items' relationships with one another and the test's overall internal coherence of data. If the formula yields a coefficient of greater than 0.7, the data collection instrument is regarded dependable; otherwise, it is deemed unreliable (Sekaran & Bougie, 2003). After the preliminary survey was completed, the data were inputted to generate the Cronbach's Alpha coefficient.

### **3.6 Data Collection Procedures**

The administration of KAPU was approached in order to get approval for the researcher to carry out the study inside the institution. Due to the sheer volume of questions, the researcher enlisted the help of undergraduate research assistants. The researcher conducted interviews with potential research assistants, giving preference to those with past expertise in data collection. The research assistants had sufficient preparation to aid in the data gathering process. Data collecting methods were the center of the training, with an emphasis on ethics, interviewee production, and questionnaire treatment. Participants were recruited at random and given self-administered questionnaires to fill out in their own time. After consenting to take part in the study, the responder was given a questionnaire to fill out. A completed survey was gathered and checked for correctness. The researcher maintained all of the surveys they received in a secure location for purposes of analysis, reporting, and participant anonymity.

The researcher was granted a research permission by NACOSTI and received a letter of approval from Kenyatta University.

### **3.7 Data Analysis and Presentation**

Information gleaned from free-form inquiries was coded for computer readability. Data is entered in Ms. Excel and then transferred to SPSS for analysis. The dataset was analysed using descriptive statistical techniques. SPSS was used to calculate percentages and

frequencies from the quantitative data. Minimum, maximum, mean, and standard deviation are just few of the descriptive statistics that are thrown into the mix as well. The information was analysed and then shown using charts and tables. Qualitative data were interpreted and then analysed thematically. The subjects were then classified according to the aims of the study. Tables, pie charts, and bar graphs were used to display the data, when appropriate. Inferential statistical methods, such as multiple regressions, were used to determine the nature of the connection between the variables.

To further elucidate the link between subjective norms and smartphone uptake and usage at the Kenya Airport Police Unit, the research also used a regression model. The diagnostic procedures that followed served to verify the soundness of the regression's presumptions.

The multiple regression equation took the form as expressed below.

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \varepsilon$$

Whereby,  $Y$  = Smartphone Usage in Policing

$X_1$ = Perceived Usefulness

$X_2$ = Perceived Ease of Use

$X_3$ = Subjective Norms

$\beta_1, \beta_2, \beta_3$  are Beta coefficients.

$\varepsilon$  is the error term.

### **3.8 Ethical Considerations**

Before making the trip to the study area, the researcher had both an introduction letter from the Kenyatta University and a research permission from the National Commission for

Science, Technology, and Innovation (NACOSTI). All relevant information about the study's aims, procedures, researcher's authority, and planned use of findings was made clear to respondents. They were given the option to participate in the research, but it was ultimately up to them. Confidentiality was assured after explaining to respondents the nature of the research to be conducted. The participants' names were obscured on the questionnaire and they were asked for permission to take part in the research.

## **CHAPTER FOUR: RESEARCH FINDINGS AND DISCUSSION**

### **4.1 Introduction**

This chapter presents the results of the study's analysis, together with the author's interpretations and findings. The results of the study are graphically represented using frequency tables and charts. An attempt has been made to explain the findings based on the replies of the respondents and the planned study goals.

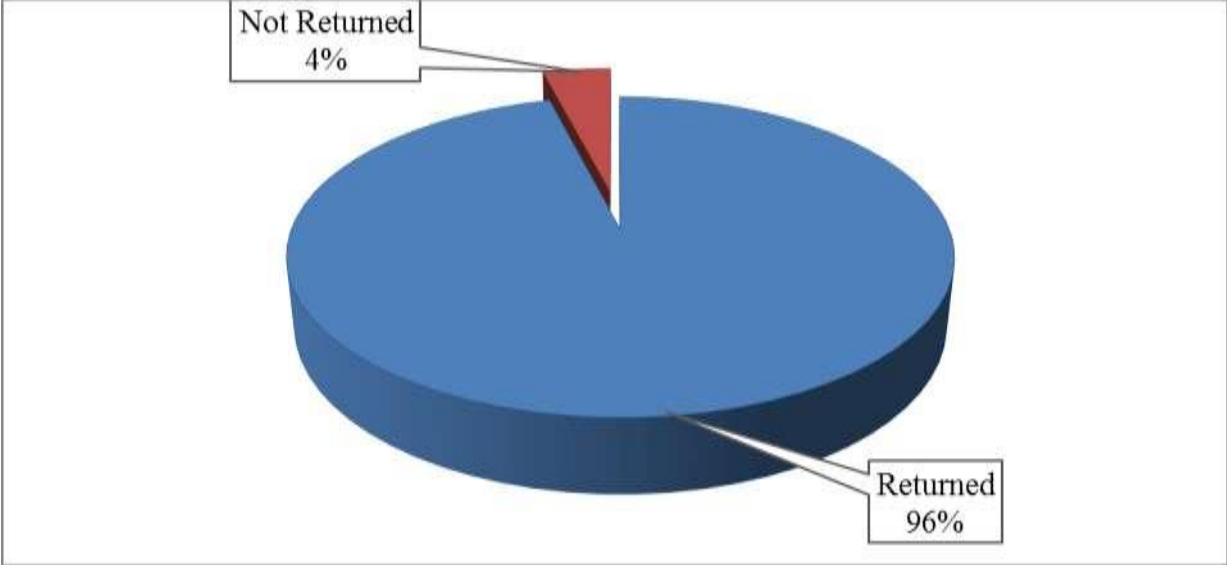
### **4.2 Pilot Study**

Before collecting real data, a pilot research was conducted among personnel at the headquarters of the Kenya Airports Police Unit. Before the exam was given to the general public, 30 police officers piloted its components. Items on the instruments were revised before being sent out to the 274 responders. The results showed that 95% of participants were satisfied with the instruments, which is sufficient to warrant their administration to the required sample size of 274.

### **4.3 Response rate**

A random sample of 274 people was taken from the total population in 1382. The questionnaire was self-administered. Respondents were required to fill out and mail back the questionnaire. Figure 4.1 shows that out of a total of 274 questionnaires sent out, 264 (or 96%) were returned to the researcher. In 2001, the Australian Vice-chancellors' Committee and the Graduate Careers Council of Australia agreed that a Course

Experience Questionnaire (CEQ) response rate of at least 70% was both desired and achievable for Australian universities.



**Survey Data (2022)**

**Figure 4. 1: Response Rate**

**4.4 Respondents socio-demographic information**

In this section, you'll learn more about the men and women who answered our survey questions from the Kenya Airports Police Unit in Nairobi County. This data is broken out according to many fundamental factors, such as the respondents' gender, age range, degree of education, duration of service, job rank, section of service, and length of service in that part. This data allows for a high-level comprehension of the population under consideration. By examining these factors, we may get a comprehensive understanding of the respondent's perspective on the usefulness of smart phones as a tool for crime prevention.

**Table 4. 1: Respondents by Gender, Age and the Level of Education**

<b>Category</b>		<b>n</b>	<b>%</b>
Gender	Male	190	72
	Female	74	28
	Total	264	100.0
Age	19-24 Years	16	6.1
	25-34 Years	78	29.5
	35-44 Years	103	38.9
	45-54 Years	58	22.1
	55-64 Years	9	3.4
	Total	264	100.0
Level of Education	Post-graduate	4	1.5
	Graduate	39	14.8
	Diploma	37	14.0
	Secondary	184	69.7
	Total	264	100.0

**Survey Data (2022)**

Majority of the respondents in this study comprised of males who represented 72% of the respondents. The studied group comprised of mostly post-youth aged between 35-44 years. This implies that most of police officers serving at the Kenya Airport Police Unit had slightly high working experience. The study also found that majority had only attained a secondary level of education with only 30% of the police officers having post secondary level of education.

**4.5 Respondent's work information**

Work experience plays a major role in individual personal and career growth. The study also examined the police work experience based on length of service, rank, and department of police served by the respondent during the study period. The findings are summarized in table 4.2.

**Table 4. 2: Police officers Period of service, Rank, section and the length of service**

		<b>n</b>	<b>%</b>
<b>Length of service</b>	1-5 years	42	15.6
	6-10 years	45	17.0
	11-15 years	15	5.5
	16-20 years	73	27.9
	over 21 years	89	34.0
	Total	264	100.0
<b>Rank</b>	Police constable	175	66.4
	Corporal	44	16.8
	Sergeant	4	1.3
	Senior Sergeant	7	2.7
	Inspector	25	9.4
	Chief inspector	9	3.4
	Total	264	100.0
<b>Section</b>	Administration and support services	11	4.1
	Investigation	134	50.7
	Intelligence unit	9	3.4
	General duties units	110	41.8
	Total	264	100.0
<b>Experience in section</b>	1-5 Years	116	43.8
	6-10 Years	59	22.3
	11-20 Years	68	25.6
	21-30 Years	17	6.6
	Above 30 Years	4	1.7
	Total	264	100.0

**Survey Data (2022)**

Majority (61.9%) of police officers had at least 16 years working experience with most of them indicating that they had over 21 years' experience. The findings are in consistent with Venkatesh and Davis (2003) on TAM 2 which incorporated experience as it affects the subjective norm on technology use. Majority (66.4%) of the respondents held a position of police constable at the time of study. 16.8% comprised corporal while the rest

comprised of Sergeant (1.3%), Senior Sergeant (2.7%), inspector (9.4%), and chief inspector (3.4%).

Most of the respondents were investigative police (50.7%) and general service units (41.8%) who formed more than 90% of the population studied. The rest were administration and support services (4.1%) and Intelligence unit (3.4%)

The findings of the study on police experience on the section worked during the study period implied that police officers changed categories over times. Despite the high working experience on professional experience, most of the police had 1-5 years' experience in the working section/categories during the study period as shown in table 4.2. The factor of experience as found here affects the individual attitude and subsequent behaviour in use of technology and is in consistent with other previous researches by Lindsay et al, (2014) on the adapted technology acceptance model.

#### **4.6 Use of smart Phone in Crime Prevention**

The widespread use of smartphones has completely altered the face of government and administration throughout the world. The purpose of this research was to determine whether or not law enforcement personnel are aware of the potential benefits of using smartphones to reduce crime. The research used a 5-point Likert scale to assess participants' levels of agreement about different elements of utilizing smartphones in police work.

According to the results, the vast majority of respondents learned to use smartphone applications quickly, with a mean and standard deviation of (4.331, 0.5326); the police believed that smartphone applications gave them the information they needed to respond to calls for service, with a mean score of (4.256, 0.8117), which included information on suspects, wanted people, and other matters of interest in policing (3.723, 1.110). This

confirms the findings of previous studies by Lindsay et al. (2009) that found smart phone technology improved policing and information exchange.

The vast majority of police officers said that they relied on their own expertise rather than the smartphone app (4.124, 1.104). When questioned about the likelihood of employing a smartphone application to carry out routine police work responsibilities, the respondent inclined to agree on incorporation (mean: 3.607, standard deviation: 1.104). The results are summarized in Table 4.3. Lindsay et al.'s (2009) comment in their research that this could be caused by the lack of a police organization providing a route for notifying its employees of events is consistent with this finding.

**Table 4. 3: Responses on Police officer’s usage of the smart phone in crime prevention**

	<b>n</b>	<b>Mean</b>	<b>Std. Deviation</b>
It's true that I picked up the ins and outs of smartphone apps rapidly.	264	4.331	.5326
I can get the data I need from the apps on my phone to help with service calls.	264	4.256	.8117
Suspect and wanted-person databases, as well as other police-related data, were made available through smartphone apps.	264	3.723	1.110
Instead of using crime-related smartphone apps, I depend on my own past experiences to make judgments.	264	4.124	.7220
It's conceivable that I'll start using my smartphone's apps to carry out my regular police duties.	264	3.607	1.104

**Survey Data (2022)**

According to Byrne and Marx (2011), a lack of regulatory enforcement makes it difficult for people to use smart phone technology. The question of how other aspects of smart phones affect police officers' roles in crime prevention was also put to them. The majority of police officers stated that their smartphones were helpful in cases where they needed to track suspects using their devices, and that this method made it easier to share information about suspects and to conduct information and record searches.

However, the majority of the cops claimed that using a smart phone made them more vulnerable to criminals, threatening their lives while on duty because some officers were leaking information to criminals via their smart phone devices, making it difficult for law enforcement to locate them. It was suggested that suspects and criminals really utilize the same social media site in order to evade capture. They also claimed that the widespread distribution of photographs of wanted individuals via WhatsApp and Facebook had helped reduce crime and increase call-ins.

**4.7 The ease of smart phone use by Police officers in crime prevention**

The research also looked at how naturally police officers used their cellphones to stop crimes from happening. Respondents were asked to score their degree of competence in the use of mobile apps in policing affairs on a Likert scale of four where (1= Non user, 2= Below Average, 3= Average, 4= competent, and 5= Very competent), in order to assess this aspect of service delivery among the police officers. Based on the results, it was determined that most police officers claimed to be adept with the use of Emails, SMS, and Facebook, with mean scores of (3.976), (0.9624), and (3.978), (1.136), and (3.978), (1.99), respectively. The twitter and the WhatsApp use proficiency level was rated at a higher average level with respective means scores of (3.748, 1.2220) and (3.573, 1.255) as shown below by table 4.4.

**Table 4. 4: Police officers rating of their proficiency of smart phone applications**

	<b>n</b>	<b>Mean</b>	<b>Std. Deviation</b>
Email usage	264	3.976	.9624
Short text messages	264	3.978	1.136
Facebook	264	3.978	1.199
Twitter	264	3.573	1.255
WhatsApp	264	3.748	1.222

**Survey Data (2022)**

The frequency of engagement with various mobile applications in one’s daily endeavours serves to facilitate the process of furnishing the proficiency. The researcher examined the rate of usage of mobile applications such as email, short messages texts, face to face, twitter and WhatsApp by police officers in different approaches of crime prevention in their daily duties execution. The apprehension of the offenders, maintenance of law and order, enforcement of all other laws and preservation of peace were stated as the frequently executed duties in crime prevention with a high mean score and the standard deviation of (3.89,1.178), (3.407, 1.240), (3.462, 1.238) and (3.336, 1.267) respectively. Protection of life and property was outlined as the moderately executed duty in light of mobile phone applications such as twitter, WhatsApp, short messages text, Facebook and email with a means score of (3.150, 1.193) as indicated in table 4.5.

**Table 4. 5: Frequency of smart phone application usage in crime prevention duties**

	<b>n</b>	<b>Mean</b>	<b>Std. Deviation</b>
Maintenance of law and order	264	3.407	1.240
Apprehension of perpetrators	264	3.389	1.178
Life and property protection	264	3.150	1.193
Preservation of peace	264	3.336	1.267
Enforcement of all other laws	264	3.462	1.238

**Survey Data (2022)**

Clarke (2004) also noted how the diversity of technological change deters adoption. In the context of this study, finding internet connectivity and a smart phone that works in Kenya is still difficult. The ease of integration of the smart phone application technology in execution of duties by the police officers is an indicator of the effective use of the approach technicalities of crime prevention. The study investigated the use of the smart phone technology application and its effects in different aspects of curbing crimes by the police officers from their consent. With regard to technical application of the smart phone

technology, majority of the respondents agreed in light of the stipulated Likert scale that the smart phone application allowed them to submit reports in a timely manner with a high mean score and a standard deviation of (4.223, 0.692).

The essence of smart phone applications being easy to use, even at quarters and in the field together with the smart phone applications having helped police officers to be more productive were highly agreed with by the respondents from the respective aspects mean scores and standard deviations of (4.215, 0.7151), (4.119, 0.7259) and (4.061, 0.8142). The findings are in consistent with earlier studies by Smith and Zook, (2011) which found the communication platform offers enhanced clients engagement which depicts police officers get more involved in crime prevention through mobile technology adoption by the police institution. The logic of the mobile applications having enhanced the officers job satisfaction was rated at a moderate level with a mean score of (3.896, 0.9034) as presented in table 4.6.

**Table 4. 6: Police Officers attributes of smart phone integration in crime prevention**

	<b>n</b>	<b>Mean</b>	<b>Std. Deviation</b>
Smart phone applications have enhanced my job satisfaction	264	3.896	.9033
The smart phone applications have helped me be more productive	264	4.062	.8141
The smart phone applications are easy to use	264	4.215	.7151
The smart phone application is easy to use even at lines, quarters and in the field	264	4.119	.7259
smart phone application allowed me to submit reports in a timely manner	264	4.223	.6962

**Survey Data (2022)**

The survey respondents were asked to qualitatively outline other assistances attributed to the use of mobile phone applications in their duties execution endeavors of crime prevention. The qualitative analysis revealed on the respondents take that technology has empowered their knowledge and skills of tracking criminals and also networking with officers in terms of gathering real time intelligence data and acting upon receiving any

reported information. Officers further outlined that the mobile applications such as Facebook had assisted a lot in profiling of suspects and tracing the accomplices, apprehension of wrong doers and ease in relaying of vital information alongside the proper coordination and the ability to assess what was happening in the fields. The relay of information from the informants and also studying the mode of any criminal by ascertaining their location at any given time, communication and reporting process has been effectively eased through the smart phone applications technology. The findings are consistent with Sago (2013) studies where positive relationship between frequency of use of social media and its perceived usefulness, enjoyment and perceived ease of use was found.

#### **4.8 Effects of police officer's personal norm on use of smart phone in crime prevention**

The study sought to establish the extent to which the police officers are influenced by the personal norms on the use of mobile phone in crime prevention. To address this objective, police officers being asked to point out the rate they used the smart phone to relay information to other officers through face to face model of communication, police radio, email, short message texts, Facebook, twitter and WhatsApp. The engagement of the smart phone in relaying information via face to face approach, police radio, WhatsApp and short text messages were outlined as the most frequently used method of communication amongst the officers with mean scores of 3.496, 3.302, 2.976 and 3.223 respectively. The use of the Facebook, twitter and email mobile applications were rated as the rarely used mode of communication by the police officer in their execution of duties pertaining the prevention of crimes from their responses mean perspective of 2.574, 2.233 and 2.562 respectively as displayed below by table 4.7.

**Table 4. 7: Frequency of smart phone applications use in communication**

	<b>n</b>	<b>Mean</b>	<b>Std. Deviation</b>
Face to face	264	3.496	.5880
Police radio	264	3.302	.5834
Email	264	2.562	.8553
short text message	264	3.223	.7289
Facebook	264	2.574	.8992
WhatsApp	264	2.976	.8243
Twitter	264	2.233	1.019

**Survey Data (2022)**

To ascertain the use of mobile application by officers in service delivery in light of the outlined smart phone applications technology, the survey participants were asked to rate their consent regarding different aspects of the interaction with the respective mobile applications in a Likert scale of 5 levels. The weighted means responses regarding this attributes were ranked as presented in table 4.8.

**Table 4. 8: Police Officers attributes of smart phone usage in crime prevention**

	<b>n</b>	<b>Mean</b>	<b>Std. Deviation</b>
I found using smart phone applications enjoyable	264	4.397	.6207
Smart phone application use made me comfortable in work	264	3.923	.8682
Smart phone application use made socialization with colleagues easier	264	4.468	.5167
Smart phone application use kept me informed and easily assisted in making decision	264	4.333	.6325
Use of smart phone reduced time spent in police pocket phone	264	4.092	1.007

**Survey Data (2022)**

utilizing a high mean score and a standard deviation of (4.397, 0.621), the study revealed that the majority of police officers agreed that they found utilizing smart phone apps pleasurable. Respondents generally agreed with the application's stated goals of facilitating communication between police officers, providing relevant information to officers, and aiding in decision-making, and decreasing the amount of time officers spent on their pocket phones (mean scores of 4.468, 4.333, and 4.092). The suggestion that police officers' use of smart phone apps has increased their job satisfaction was the only point on which the majority of respondents did not agree (mean score: 3.923).

Officers were surveyed qualitatively to determine how they believed the police department might improve its policies and procedures so that its officers made better use of mobile technology to reduce crime. The vast majority of respondents agreed that the organization should create an app that would be installed exclusively by all police officers responsible for crime control deliberation, and that every police officer should have a smart phone to ensure the app's operability with their devices.

To further improve online information sharing, equip officers with the knowledge and skills necessary to deal with various types of crime scenarios, and increase confidentiality by bringing everyone on board via a binding set of parameters of operations, respondents highlighted the need to train police officers on the use of smart phone applications. The majority of respondents to the survey agreed that a centralized database linking all police stations is necessary so that reports on different types of crimes and other relevant information can be quickly retrieved through the crime units' own servers while still maintaining confidentiality.

**Table 4.9: One-Sample Statistics for the objectives of study**

	N	Mean	Std. Deviation	Std. Error Mean
Police usage of smart phone on crime prevention	264	4.0188	.54922	.05014
Usage of smart phone application by police	264	3.7493	.87493	.10103
Frequency of use of smart phone application	264	3.3152	1.10519	.09619
Efficiency on adoption of smart phone application	264	4.0969	.55920	.04905
Frequency of use of smart phone technology in internal police communication	264	2.7851	.61116	.05724
Attitude on use of smart phone technology	264	4.2365	.50432	.04493
Intention and future use of smart phone technology	264	3.9500	.59196	.05404

**Survey Data (2022)**

The study tested the significance of the variables using one-sample t-test. The study was conducted at  $\alpha=0.05$ . Table 4.9 above provides descriptive statistics associated with one sample t-test. The study found that the means of the variables ranged between 2.7851 to 4.2365 with a standard deviation of between 0.044 and maximum of 0.101. The attitude towards use of smart phone was rated high by many police officers. On the other hand, the use of smart phone applications was rated average with a mean of 3.7493 and standard deviation of 0.10103 indicating varied responses among the respondents.

The table 4.9 summarizes the mean and standard deviations computed from the variables of the study.

**Table 4.10: One-Sample Test statistics for the study variables**

	Test Value = 4					
	t	df	P_value	Mean Difference	95% C.I of the Difference	
					Lower	Upper
Police usage of mobile phone on crime prevention	0.374	119	0.709	0.019	-0.081	0.118
Usage of mobile application by police	-2.481	74	0.015	-0.251	-0.452	-0.049
	-7.119	131	0.000	-0.685	-0.875	-0.495
Frequency of use of mobile phone application usage	1.976	129	0.050	0.097	0.000	0.194
Efficiency on adoption of mobile phone application	-21.225	113	0.000	-1.215	-1.328	-1.102
Frequency of use of mobile technology in internal police communication Attitude on use of mobile technology	5.264	125	0.000	0.237	0.148	0.325
Intention and future use of mobile technology	-0.925	119	0.357	-0.050	-0.157	0.057

**Survey Data (2022)**

The study tested the significance of variables in the study at  $\alpha=0.05$ , the computed significance/p-value were compared with tabulated,  $\alpha=0.05$ . The variables were considered insignificant if since the  $P\_value \Rightarrow \alpha=0.05$ . The study found that police usage of smart phone on crime prevention was insignificant at  $\alpha=0.05$  since the  $P\_value=0.019 < \alpha=0.05$ . These findings contradicted Cole and Reeves (2003) findings that use of

technology among the police increased the efficiency of data capturing, reporting, dissemination and sharing.

The intention and future use of smart phone technology was also found insignificant at  $\alpha=0.05$  since the  $P\_value=0.2510 > \alpha=0.05$ . The study by Byrne and Marx (2011) observes the actual adoption of the technology is difficult to estimate. Byrne and Marx argue that the technology has both advantages such as frequent changes thus the intention to use may change with time.

Other variables tested in this study were usage of smart phone applications, frequency of use of smart phone applications usage, efficiency on adoption of smart phone applications, frequency of use of smart phone technology in internal police communication, and attitude on use of smart phone technology. The study found usage of smart phone applications by police was significant at  $\alpha=0.05$ . The frequency of usage of smart phone applications, efficiency on adoption of smart phone applications, frequency of use of smart phone technology in internal police communication, and attitude on use of smart phone technology were also found to be significant  $\alpha=0.05$ .

Our findings corroborate those of Alaghbandrad, Nobakht, Hosseinalipour, and Asnaashari (2011), who noted that factors such as cultural norms, education, regulations, ease of use, cost, and the absence of a universal standard for the adoption of information and communication technologies (ICTs) all have an impact on people's propensity to use such tools. In contrast to the results of Alaghbandrad et al. (2011), this research found that positive attitudes about technology usage were significantly associated with higher rates of adoption and more frequent technology use.

## 4.9 Inferential Statistics

### 4.9.1 Coefficient of Determination Results

The predictive power of the statistical model was tested using the coefficient of determination. The Model Summary is shown in Table 4.12.

**Table 4.11: Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.536(a)	.287	.270	.988

#### Survey Data (2022)

- a) Predictors: Individual Police Norms, perceived ease of use and perceived usefulness
- b) Dependent Variable: smart phone usage

The study further tested the ability of regression model to predict crime prevention at  $\alpha=0.05$ , the study found that the model significantly predicted the crime prevention. The research indicated that the perceived utility, perceived simplicity of use, and subjective norms of smart phone apps account for 28.7% of crime prevention when testing the association between smart phone usage and crime prevention.

### 4.9.2 Multiple Regression Analysis Model Results

The main aim of multiple regression is to better understand the association between the determinants of smartphones adoption and use. In order to calculate the degree to which a unit change in a specific independent variable causes a change in the dependent variable, the study employed SPSS to enter and code replies from the respondent. Table 4.12 and 4.13 presents the multiple regression.

#### ANOVA (b)

**Table 4. 12: Significance of regression model**

	Sum of Squares	df	Mean Square	F	Sig.
Regression	47.951	3	15.984	16.381	.05 (a)
Residual	119.041	261	.976		
Total	166.992	264			

**Survey Data (2022)**

a) Predictors: (Constant), Individual Police Norms, Perceived ease of use and Perceived usefulness

b) Dependent Variable: smart phone usage

Only Perceived usefulness among variables contributing to the model were found significant at  $\alpha=0.05$

**Coefficients (a)**

**Table 4. 13: Coefficients of regression model**

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-1.101	.684		-1.610	.110
Perceived ease of use	.521	.228	.229	2.284	.024
Perceived usefulness	.554	.184	.291	3.008	.003
Individual Police norms	.231	.225	.113	1.027	.306

**Survey Data (2022)**

a) Dependent Variable: smart phone usage

The variable contributing to the model can be fitted as shown below.

$$\text{Smart phone usage} = -1.101 + 0.521(\text{Perceived ease of use}) + 0.554(\text{Perceived usefulness}) + 0.231(\text{Individual Police norms}).$$

## **CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS**

### **5.1. Summary**

According to the study's objectives to determine the impact of perceived utility on smartphone uptake and use at KAPU the results can be divided into three groups in Kenya, to determine how smartphone adoption and use at KAPU, Kenya, are impacted by perceived ease of use and to analyse the effect of subjective norms on smartphones adoption and use at KAPU, Kenya.

#### **5.1.1 Ascertain the effect of perceived usefulness on smartphones adoption and use**

Police officers ease of use of smart phone in crime prevention was assessed in terms of their ability to proficiently use the smart phone applications, their experience in using the respective apps and the likelihood of them adopting the smart phone in execution of their daily police duties. Majority of the police officers argued that they easily learnt to use smart phone applications quickly and also the respective smart phone apps provided them with the information needed to respond to the call of service. Most of the officers reported that they tend to rely on their own experience than using the smart phone applications while a number of them outlined their intention to adopt the smart phone applications in conducting their daily police tasks. Officers also observed that using a smart phone was beneficial since it helps in situations when the suspects are tracked through their devices; the method had also

made it easier to convey information about suspects and to conduct information record searches.

On the other hand, many police officers claimed that their use of smart phones had negatively impacted their ability to prevent crime by making them more vulnerable to criminals and endangering their lives while on duty because some officers were leaking information to criminals via their smart phone gadgets. They also pointed out that social media might be used for information exchange, communication, and the dissemination of wanted person photographs. Although the same platform was implied to be practically employed by suspects and criminals to conceal themselves from being caught, WhatsApp groups and Facebook's social media platforms have proven useful along with call receptions. Use of technology in crime prevention explored by other scholars is based more on the use of the telephone, the two-way radio, and the automobile.

### **5.1.2 Determine impact of perceived ease of use on smartphone adoption and use**

Since many institutions, including insurance firms, public health and welfare agencies, schools, and commercial enterprises rely on the police to help them in risk management, demand for police information has significantly expanded. These factors prompt the police to use technology to capture share just in Case. The police officer's intention to use the smart phone in crime prevention was evaluated in terms of their proficiency in using emails, short text messages, twitter and Facebook mobile applications.

This study found that integration of the smart phone applications in execution of crime prevention tasks by the police officers was mainly propagated by effectiveness of smart phone applications on submission of reports in a timely manner and ease to use, even at quarters and in the field alongside boosting their productivity. Knowledge and skills empowerment on criminal tracking while networking with officers in terms of gathering real

time intelligence data and acting upon reported information was overriding factors influencing the police officers.

### **5.1.3 Analyse the effect of subjective norms on smartphones adoption and use**

The extent of the personal norms effect on the police officers embracing the smart phone was examined in light of the frequency of using the face to face model of communication, police radio, email, short message texts, Facebook, twitter and WhatsApp. Most of the police officers reported their engagement of the smart phone in relaying information via face to face approach, police radio, WhatsApp and short text messages as the most frequent technicalities of deliberation. The use of the Facebook, twitter and email in smart phone applications were realized to be employed to a less extent by the police officers in their execution of duties pertaining the prevention of crimes. Majority of the police officers noted that they found using smart phone applications enjoyable and had eased the socialization between colleague's police officers alongside enhancing them in making informed decisions. However, majority of the police officers disagreed with the implication of smart phone applications having made them comfortable.

With regard to the proposition the police organization ought to impose to enhance the use of the smart phone by its officers to benefit in crime control approaches. Majority of the participants noted that the organization ought to develop an application that will be installed specifically by all police officers charged with crime control deliberation and every police officer be equipped with a smart phone to facilitate the applications operation compatibility with their gadgets.

They also proposed that there was need to train the police officers on the use of smart phone applications so as to facilitate online information sharing and furnish officers knowledge and skills in dealing with various crimes. Predominantly, the survey participants stated that there

was need of creating a database integrating all police stations in the retrieval of reports on various crimes operant and any vital information regarding the same could be easily accessed through the crime units own servers whereby the information relayed will be secure and confidential.

#### **5.1.4 Factors that affects the implementation of smart phone adoption and use**

The hindrance to effective implementation of smart phone in crime prevention was evaluated in terms of the aspects of the police officer's management style. Majority of the officers argued that they would recommend smart phone applications use to their colleagues and also stated that they intended to use the smart phone applications frequently in policing matters and more expressed their desire to know more on use of smart phone applications. On the other hand, most of the police officers were not sure on the attribute of having been using the smart phone applications due to technical support by the police management.

The police officers argued that in order to improve the use of smart phone applications in the police organization's strategy to prevent crime, management of the police officers' organization should create a new app that will only be available to the officers in order to protect their privacy when handling criminal cases, as well as in-service or training the officers on how to use smart phone applications in order to improve the effectiveness of service delivery regarding crime.

#### **5.2 Conclusion**

The results of this study led to the conclusion that, although they still need to be fully deployed, smart phone applications usage have changed the police's crime prevention unit to some extent. The development of several applications, including social networking platforms like Facebook, Twitter, emails, brief text messages, and WhatsApp, has fueled the usage of smartphones in crime. In some ways, this strategy has made it easier for police officers to

carry out their duties related to crime prevention, but more needs to be done in terms of how police officers use their smartphones, their personal norms (cognitive acceptance), their ease of use, and the way their organization is managed in order to effectively improve crime prevention on this platform. It has been discovered that perceived ease of use and perceived usefulness of smartphone technology have significantly good benefits on smart phone usage.

### **5.3 Recommendations**

The following are some recommendations based on the results of the study: Police personnel should be issued smart phones and given training on how to utilize them to facilitate more productive conversations about ways to reduce crime. The leadership of the police organization should create a database that integrates all police stations or create a smartphone application for the police personnel and a specific crime unit domain to make it simple and secure to share reports and access to reported cases on a secure platform. In order to encourage police personnel to raise their production and responsibilities, the police organization's administration must provide them with material and technical support.

### **5.4 Suggestions for Further Research**

More study on how the general public values the usefulness of smart phone applications is required since smart phone usage in crime prevention is a group effort.



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## **APPENDICES**

### **APPENDIX I: LETTER OF TRANSMITTAL**

Sila M. Benedict

Department of Management Science

School of Business

Kenyatta University

P.O Box 43844-00100 Nairobi-KENYA

Email: [sila.musili@students.ku.ac.ke](mailto:sila.musili@students.ku.ac.ke)

Phone:0721458528

Dear Respondent,

I am Masters student currently conducting a research study on, "Smartphones Adoption and Use at the Kenya Airport Police Unit, Kenya ". In line with the course requirements, this questionnaire seeks to collect data for the execution of the study. Your individual answers will be kept completely confidential in the final report. The questions are to determine your use of smartphones applications in crime prevention. To obtain a copy of the study's final report, contact Kenyatta University if you are willing to be open and honest.

Yours faithfully

Sila M. Benedict

ADM. No. D53/OL/CTY/32377/2017

## **APPENDIX II: RESEARCH QUESTIONNAIRE FOR AIRPORT POLICE OFFICERS**

DO NOT WRITE YOUR NAME ANYWHERE ON IT.

### **PART A: Background Information.**

#### **1. Sex/gender (Please select from one from the following categories):**

Male  Female

#### **2. Age (in years)**

19-24  25-34  35- 44  45-54  55- 64

#### **3. Education Level (e.g. tick appropriately).**

Post Graduate  Graduate  Diploma  Secondary

Primary  Others levels please specify.....

#### **4. Length of service**

1-5 years  6-10 years  11-15 years  16-20 years

Over 21 years

#### **5. Rank (What is your rank in the police service?)**

Police constable  Corporal  Sergeant  Senior Sergeant  Inspector

Chief inspector ( ) Ass/superintendent  Superintendent  Senior Superintendent

#### **6. Section. (Which section do you work?)**

Administration and support services  Investigation  Intelligence unit  Traffic

General duties  others please specify.....

#### **7. How long have you worked in this section in**

years/months?.....

**PART B: How does perceived usefulness affect smartphones adoption and use at KAPU, Kenya**

8. To what extent do you agree with the following statements?

S/No		Strongly agree (5)	Agree (4)	Not Sure (3)	Disagree (2)	Strongly disagree (1)
a.	I did learn to use smartphone applications quickly.					
b.	Smartphone applications provide data I need when I respond to calls for service.					
c.	Smartphone applications provide information on suspects, wanted person and other matters of interest in policing.					
d.	When making decisions about crime problems, I tend to rely more on my own experience than using smartphone applications.					

e.	I'm likely to adopt the use of smartphone applications in conducting my daily police duties.					
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9. In what other ways is the use of smartphone affects your performance?

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**PART C: How does perceived ease of use affect smartphones adoption and use at KAPU, Kenya**

Check the boxes next to the smart phone applications that meet the criteria for policing issues in the table below.

**very competent** (I can use a smartphone well and also teach my peers)

**Proficient** (I use smartphone all the time and know most of its features)

**Average** (I use the smartphone sometimes, but only for basic tasks)

**Below average** (I have little knowledge of how to use smartphone)

**Non user** (I do not know how to use these smartphones applications)

10. Describing your overall smart phone use on the following applications.

<b>Rate/Application</b>	Very proficient (5)	Proficient (4)	Average (3)	Below average (2)	Non-user (1)
<b>Emails</b>					
<b>SMS</b>					
<b>Facebook</b>					
<b>Twitter</b>					
<b>Instagram</b>					
<b>WhatsApp</b>					

11. How frequently do you apply smartphone applications e.g. email, short message text, Facebook, Twitter, Instagram and WhatsApp in your duty performance?

S/no	Duty	Most frequently (5)	Frequently (4)	Moderately (3)	Least Frequently (2)	Not used (1)
a.	Maintenance of law and order					
b.	Apprehension of perpetrators					
c.	Life and property					

	protection					
d.	Preservation of peace					
e.	Enforcement of all other laws					

**12.** To what extent do you agree with the following statements?

S/no		Strongly agree (5)	Agree (4)	Not sure (3)	Disagree (2)	Strongly disagree (1)
a.	Smartphone applications have enhanced my job satisfaction.					
b.	Smartphone applications have helped me to be more productive.					
c.	Smartphone applications are easy to use.					
d.	Smartphone application use is easy even at lines, quarters and in the field.					
e.	Smartphones application					

	allowed me to submit reports in a timely manner.					
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13. In general, how else has the use of smartphone applications assisted you in performing your duties? .....

**PART D: How do subjective norms affect smartphones adoption and use at KAPU, Kenya**

14. How frequently do you use the smartphone applications to communicate information to other officers?

	Most frequently (5)	Frequently (4)	Moderately (3)	Rarely (2)	Never (1)
Face to face					
Police radio					
To obtain a copy of the study's final report, contact Kenyatta University if you are willing to be open and honest. Email					
SMS					
Facebook					
Instagram					

Twitter					
WhatsApp					

15. To what extent do you agree with the following statement?

S/no		Strongly agree (5)	Agree (4)	Not sure (3)	Disagree (2)	Strongly disagree (1)
a.	I found using smartphone phone applications enjoyable.					
b.	Smartphone application use made me comfortable in work.					
c.	Smartphone applications use made socialization with colleagues easier.					
d.	Smartphone applications use kept me informed and easily assisted in making decision.					
e.	Use of smartphone reduced time spent in police pocket					

	phone.					
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16. In your own opinion how do you think the police organization should do to enhance the use of smartphone by its officers to benefit in crime control approaches?

.....

.....

.....

.....

**PART E: How does usage affect smartphones adoption and use at KAPU, Kenya**

17. To what extent do you agree with the following statements?

S/no		Strongly agree (5)	Agree (4)	Not sure (3)	Disagree (2)	Strongly disagree (1)
a.	I intend to use smartphone applications frequently in policing matters.					
b.	I intend to know more on use of smartphone applications.					
c.	I use the smartphone application due to technical support by police					

	management.					
d.	I would recommend smart phone application use to my colleagues.					

**18.** In what other ways do you think the police organization management may improve the implementation on use of smart phone in its plan to prevent crime?

.....

.....

.....

.....

**Thank you for your feedback and kind cooperation**

**APPENDIX III: LETTER OF AUTHORISATION**

BENEDICT MUSILI SILA,  
P.O Box 19004-00501,

NAIROBI.

17th January, 2023

Email: silamusili@students.ku.ac.ke

The DIG KPS,

P.O Box 30083-00100,

NAIROBI.

The Commandant,

Kenya Airport Police unit,

P.O Box 19004-00501,

NAIROBI.

Dear Sir,

**RE: RESEARCH PROPOSAL**

I am the above named student from Kenyatta University Registration Number D53/OL/CTY/32377/2017 pursuing Master of Business Administration (Management Information Systems) degree course at Kenyatta University.

I am requesting for an authority to carry out a research on “Determinants of Smartphones Adoption and Use at Kenya Airport Police Unit, Kenya by Police Officers in Kenya Police Service and Directorate of criminal investigation in Detection and prevention of Crime at Jomo Kenyatta International Airport, Nairobi City County”.

The research is intended to be carried out at Jomo Kenyatta International Airport, Nairobi City County incorporating police officers drawn from Nairobi Airport Police division under KPS and DCI.

Attached is a copy of approval from Kenyatta University.

Yours faithfully,

BENEDICT MUSILI SILA

Encl

## APPENDIX IV: LETTER OF RESEARCH APPROVAL



KENYATTA UNIVERSITY  
GRADUATE SCHOOL

E-mail: [dean-graduate@ku.ac.ke](mailto:dean-graduate@ku.ac.ke)

P.O. Box 43844, 00100  
NAIROBI, KENYA  
Tel. 810901 Ext. 4150

Website: [www.ku.ac.ke](http://www.ku.ac.ke)

Internal Memo

FROM: Executive Dean, Graduate School

DATE: 9<sup>th</sup> January, 2023

TO: Benedict Musili Sila  
C/o Management Science Dept.

REF: D53/OL/CTY/32377/2017

SUBJECT: APPROVAL OF RESEARCH PROJECT PROPOSAL

We acknowledge receipt of your revised Project Proposal as per our recommendations raised by the Graduate School Board at its meeting of 8<sup>th</sup> November, 2022, Entitled, "Determinants of Smartphones Adoption and use at Kenya AirPort Police Unit, Kenya".

You may now proceed with your Data Collection, Subject to Clearance with Director General, National Commission for Science, Technology and Innovation.

As you embark on your data collection, please note that you will be required to submit to Graduate School completed Supervision Tracking Forms per semester. The form has been developed to replace the Progress Report Forms. The Supervision Tracking Forms are available at the University's Website under Graduate School webpage downloads.

Thank you.

A handwritten signature in black ink, appearing to read 'Annbell Mwaniki'.

ANNBELL MWANIKI  
FOR: EXECUTIVE DEAN, GRADUATE SCHOOL

C.c. Chairman, Department of Management Science

Supervisors:

1. Dr. Morrison Mutuku  
C/o Management Science Dept.  
Kenyatta University

## APPENDIX V: PERMISSION TO SEEK FOR STUDY PERMIT



### KENYATTA UNIVERSITY GRADUATE SCHOOL

E-mail: [dean-graduate@ku.ac.ke](mailto:dean-graduate@ku.ac.ke)

Website: [www.ku.ac.ke](http://www.ku.ac.ke)

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

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Our Ref: D53/OL/CTY/32377/2017

DATE: 9<sup>th</sup> January, 2023

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

Dear Sir/Madam,

**RE: RESEARCH AUTHORIZATION FOR BENEDICT MUSILI SILA - REG. NO. D53/OL/CTY/32377/2017**

I write to introduce Mr. Benedict Musili Sila who is a Postgraduate Student of this University. He is registered for M.B.A degree programme in the Department of Management Science.

Mr. Sila intends to conduct research for a M.B.A Project Proposal entitled, "Determinants of Smartphones Adoption and use at Kenya Airport Police Unit, Kenya".

Any assistance given will be highly appreciated.



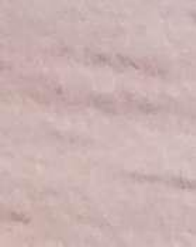


Yours faithfully,

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

**PROF. ELISHIBA KIMANI**  
**EXECUTIVE DEAN, GRADUATE SCHOOL**

EK/nn

# APPENDIX VI: RESEARCH AUTHORISATION LETTER

 <b>REPUBLIC OF KENYA</b>	 <b>NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY &amp; INNOVATION</b>
Ref No: <b>813208</b>	Date of Issue: <b>17/January/2023</b>
<b>RESEARCH LICENSE</b>	
	
<b>This is to Certify that Mr., Benedict sila of Kenyatta University, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Nairobi on the topic: Determinants of smartphones adoption and use at Kenya airport police unit, kenya for the period ending : 17/January/2024.</b>	
License No: <b>NACOSTI/P/23/23196</b>	
<b>813208</b> Applicant Identification Number	 Director General <b>NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY &amp; INNOVATION</b>
Verification QR Code	
	
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