INFLUENCE OF INFORMATION COMMUNICATION TECHNOLOGY ON POLICE OFFICERS' PERFORMANCE IN NYANDARUA COUNTY, KENYA

BY

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DECLARATION

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

_____ _____

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L50/78427/2015

This research project has been submitted for examination with my approval as university supervisor.

_____ _____

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DEDICATION

The research project is dedicated to my wife Caroline Adhiambo and children Gift Maina, Quinton Maina and Asael Mwangi for their great support in the course of the study.

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LIST OF ABBREVIATIONS AND ACRONYMS

ICT	-	Information and communication technology
NPS	-	National police service
CCTV	-	Closed circuit television
GPS	-	Global positioning system
FBI	-	Federal Bureau of Investigation
SMS	-	Short messaging service
VHF	-	Very High Frequency

ABSTRACT

Information and communication technologies are increasingly becoming a point of interaction between governments, public agencies and citizens. ICT is used as a tool in increasing efficiency in crime fighting strategies by police and other law enforcement agencies. In Kenya, ICT has made it possible for police officers to efficiently communicate and effectively exchange information. This results in successful police operations thus reducing the rate of insecurity in the country. The purpose of the study was to assess the influence of communication technologies on police officers' performance, to establish the influence of record keeping technologies on police officers' performance, to investigate the influence of problem solving technologies on police officers' performance. It also sought to evaluate how knowledge empowerment through technology influence police officers' performance. The study will help the Kenyan government in development and implementation of ICT policies. The study was focused on police officers working in Nyandarua County only. The study assumed that the respondents would provide genuine and true information and that questionnaires would be returned on time. The study was based on unified theory of acceptance and technological use as emphasized by Venkatesh(2003). This study adopted a descriptive survey design which was used to obtain information through describing the existing phenomenon. The target population was 817 police officers serving in Nyandarua County. The sample size was obtained through multistage approach and simple random sampling. The sample of the study comprised of 245 police officers. A test-re-test technique was used to test reliability of the data collection instruments. An introductory letter was obtained from the University of Nairobi before commencement of data collection. A research permit was obtained from NACOSTI. The data was collected using questionnaires and interview schedules. Data analysis was done using Statistical Package of Social Sciences. Descriptive statistics was computed and data presented in frequency tables. Pearson moment correlation coefficient(r) was computed to show the association between the independent variable and the dependent variable. Regression analysis was used to determine the extent to which an independent variable influenced the dependent variable. In the first objective there was strong positive association between communication technologies and police officers' performance with r= 0.975. R2 of 0.951 showed 95.1% variation of officers' performance as a result of using communication technology. In the second objective, there was a high positive association between record keeping technology and performance of police officers with r= 0.969. In the third objective, there was a strong positive association between problem solving technologies and performance of police officers with r=0.965. In the fourth objective, there was a strong positive association between knowledge empowerment technologies and police officers' performance. The study concludes that to a large extent, ICT positively influences the performance of police officers in Nyandarua county. Provision of necessary equipment and training should be enhanced. The government should enact laws that facilitate the application of ICT in various police activities.

CHAPTER ONE
INTRODUCTION

1.1. Background of the study

Information and communication technologies are increasingly becoming the point of interaction between government, public agencies and people (Bruce &Tait ,2015). ICT usage by the public sector has been recognized as a key parameter of efficiency in delivering government services to the citizenry. Latin America is experiencing a digital revolution with most of its citizenry being online. There is also a witnessed high rate of organized and interpersonal violence. Due to this, governments such as Brazil, Colombia and Mexico have adopted ICT as a means of reducing the increasing rate of insecurity. This is a tool that is used to add efficiency on the conventional crime fighting strategies applied by police and other law enforcement agencies. The police in these countries have adopted use of security cameras, increased the mobile communication system, installation of GPS and tablets in police vehicles. Police agencies also analyze large volumes of raw data which is e-sourced to gain a deeper understanding of security issues in their respective countries (Muggah & Diniz, 2013). Heads of most police agencies in USA are finding it challenging to develop an optimum mix of technologies given the nature and trend of crime in their respective jurisdiction. Advanced technologies are available to police agencies such as gunshot detection system, body camera technology, predictive analysis systems, GPS technology, facial recognition system among others(Miller, Lindsay, Jessica T., & Police Executive Research Forum, 2014).USA police agencies have been applying ICT to reduce public complaints against police work and to increase public trust. More than a third of police agencies have adopted the use of body cameras to improve accountability of police officers. Body cameras also act as deterrence to police officers from engaging in undesirable behaviors such as use of excessive force. It encourages treatment of members of the public in a just manner (Braga A., Coldren J., Sausa W., Rodriguez D., Alper O., 2017).

Technological advancements are greatly changing the form and content of policing especially with new forms of communication and information exchange in South Africa. The concept of smart policing have been initiated in the country(South Africa) with the ultimate goal of applying ICT to improve police oversight and accountability(Bruce &Tait, 2015).South African police has an official police website that enhance coordination and cooperation between the department and

the community in fighting crime. Social media platforms such as Facebook, Twitter, Whatsup among others has also assisted South African police in rendering efficient and effective service. The department utilizes social media in criminal investigations, finding suspects and finding missing persons (Turck,L.,2016).According to Turck(2016), there are different types of software used by the South African police in fight against crime. The department also greatly applies technologies such as GPS tracking, CCTV, and cell phones when carrying out their mandate.

Through the Smart Rwanda Master plan 2015, the Rwandan government has undertaken to implement information and communication systems and services for government ministries, department and agencies. Rwandan government has embarked on ICT implementation in police department to improve security services. According to Twizere (2013), Rwandan National police uses a radar gun system to detect the speed of motor vehicles on Rwandan roads and thereafter arresting the speeding drivers. This is aimed at reducing the amount of road accidents. The number of accidents and associated human suffering reduced significantly after introduction of car radar gun in Rwanda.

According to the public –sector survey report (2016), the importance of ICT has been underscored by the fact that it was identified as key pillar in the achievement of Vision 2030 goals by the Kenyan government through the ministry of ICT. Kenya is in the process of extensive police reforms whose one of the objectives is institutionalizing ICT to ensure efficient police undertakings (Revised police Reforms program document 2015-2018). NPS through its strategic plan 2013-2018 aspires to modernize police stations through automation of records and use of ICT. In Nyandarua county, police officers have rapidly adopted ICT as a tool for effective delivery of security services. This is through efficient communication and effective information exchange both of which forms the backbone of any police operation.

1.2. Statement of the problem

The government of Kenya has invested heavily in reforming National Police Service (NPS). All police officers in Kenya serve under NPS. NPS is established by the constitution of Kenya 2010. It consists of Kenya police service and administration police service whose distinct roles are well stipulated in National Police Service Act 2011. The Act establishes the chain of command from Inspector General of police at nation level to the commanders in the village levels. The

government of Kenya, through the ministry of ICT, has made available all necessary infrastructures making ICT a critical component in police operations. This is aimed at equipping NPS with necessary technology to keep it par with modern crime trends .According to Verketish (2003) such heavy investment in ICT infrastructure by the Kenyan government creates a facilitating condition for use of ICT by police officers. However, despite such huge investment in infrastructure, crime rate has been increasing in most parts of the country. There is also no extensive empirical research concluded to establish the influence of ICT on police officers' performance in Nyandarua county Kenya. In the light of this, the researcher sets out to investigate the influence of ICT on police officers' performance in Nyandarua county.

1.3. Purpose of the study.

The purpose of the study was to assess the influence of information and communication technology on police officer's performance in Nyandarua county Kenya.

1.4 Research objective

The specific objectives of this study were**;**

1. To determine how communication technologies influences police officers' performance in Nyandarua county Kenya.
2. To establish the influence of record keeping technology on police officers' performance in Nyandarua county Kenya.
3. To investigate the influence of problem solving technologies on police officers' performance in Nyandarua county Kenya.
4. To evaluate how knowledge empowerment through technology influence police officers' performance in Nyandarua county Kenya.

1.5 Research questions.

The research questions of this study were;

1. How does communication technology influence police officers' performance in Nyandarua county Kenya?
2. To what extent does office record keeping technology influence police officers' performance in Nyandarua county Kenya?
3. In what ways does problem solving technology influence police officers' performance in Nyandarua county Kenya?

4. How does knowledge empowerment through technology influence police officers' performance in Nyandarua county Kenya?

1.6 Significance of the study.

The information generated by this study reveals the extent to which ICT influence the performance of police officers. This can help the Kenyan government when developing and implementing ICT policies on policing. This is of great importance based on the fact that huge amount of money has been invested in installation of ICT infrastructure in the NPS. The study will also help individual police officer to aspire to use ICT in their day to day operation hence enhancing the rate of acceptance of ICT use in NPS. The finding of the study will provide more information over existing literature on ICT and police performance in Kenya. It is also hoped that that the findings will trigger further research in other areas of ICT and police performance that might not be the focus of the study

1.7 Limitations of the study

The study focused mainly on police officers in Nyandarua County. Police officers in Nyandarua are stationed in locations widely spread and therefore a risk of getting lost is expected. However a research assistant who has good geographical knowledge of the area was hired by the researcher. The researcher also expected limited time and resources to be at his disposal for the study. The researcher applied sampling of the total targeted population which was well spread across the study area.

1.8 Delimitation of the study

The study was confined to Nyandarua County. It focused on 817 police officers who serve in Nyandarua County. Police officers serving outside Nyandarua county were not investigated.

1.9 Basic assumptions of the study

It the study, the researcher assumed that when responding to the questionnaire, the respondents would provide genuine and true information. It was also assumed that the respondents would be willing to give information without fear and return the questionnaire on time.

1.1.0. Definition of significance terms used in the study.

Information and Communication technology. It refers to all equipment such as CCTV, mobile phone, VHF radios among other and programs such as facial recognition program that are used to process and pass information.

Police officer. This is an administration police officer or a Kenya police officer, and includes officers of the directorate of criminal investigation and reservist

Police station. This is a place designated by the inspector general as a police station

Record keeping. This is a systematic procedure by which records of an organization are created, captured, maintained and disposed off.

Knowledge Empowerment. Refers to consumption of information and insights by an individual to make him/her exceptionally effective and more successful in their career.

1.1.1. Organization of the study

The study was organized into five chapters. Chapter one contains the background study, statement of the problem, purpose of the study, objectives of the study and research questions. The chapter also presents significance of the study, the basic assumption of study, limitation and delimitations of the study and definition of significant terms. Chapter two has introductory issues relating to ICT. It also contains discussion of literature on studies carried out in different parts of the world related to the objectives of the study. Chapter three contains the methodology that was used in the study. It includes description of research design, target population, sample size and sampling procedure, data collection instruments. It also describes how the research instruments were piloted, how validity and reliability of research instruments was tested. The chapter contains data collection procedures, data processing and analysis technique and ethical considerations which were made in the study. Chapter four contain the introduction, return rate of study instruments and demographic characteristics of the respondents. It also presents data analysis, presentation of findings and their discussions as per the objectives of the study. Chapter five contains a summary of findings, conclusion, recommendations and suggestion for further studies.

CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

This chapter undertook to review all literature related to the study. The key theme of the study is use of communication technology by police and related impact in police performance. It also reviewed literature related to the use of record keeping technology and how it affected police officers' performance. The other theme was the use of problem solving and knowledge empowerment technologies and the associated impact on police officers' performance.

2.2. An Overview of Information Communication Technology.

The world has seen a great deal of transformation of information technology. This has lead to new and better way of creating, storing, exchanging and using information. Introduction of internet to the world made it easy for communication and information exchange. The internet era was characterized by extensive data processing, information and knowledge management and elaborate communication systems (Wangwe, 2007). Among the early applications of technology in police work was fingerprinting in 1900s and development of crime laboratories in 1920s. Police communication received a great boost when wireless telegraphy was invented in 1896. This progress lead two discovery of one-way radio which became the means of police communication in most cities (Poli,1942). These technologies helped police to solve complex crime problems. Great advancement in microelectronic and software development has lead to better and improved information and communication technologies (Mansell, 1994). Such technologies greatly augment police ability to handle security and safety issues. Poli (1942) notes that police department in New Jersey introduced the use of small radios attachable to belts to their police officers in 1940. Byrne and Marx(2011), classified police technology innovations into hard and soft technological innovations. The hard technological innovations intended to assist police in fighting crimes include CCTVs, metal detectors, personal protective gear, and alcohol sensor devices among others. The soft technological innovations that assist in police work include risk assessment programs, crime forecasting programs, data sharing systems, crime analysis techniques, and facial recognition soft ware among others.

2.3. Police Communication Technology and Police Officer's Performance

Discovery of telephony enabled members of the community to make emergency calls to police stations. The stations could easily respond to the calls through officers on patrol using their two-way radio(Harris, 2007).Radio communication enhance the speed of coordination among officers at different locations in responding to distress calls especially when using automobiles. Coordination of safety agencies such as police, emergency medical services and fire department is paramount when responding to disasters such as earthquakes, hurricanes, wild fire, plane clashes, and car accidents. Events such as festivals, visiting of dignitaries, sporting activities also requires a high level of coordination of police officers at different locations of the venue through radio communication. Coordination requires high level of planning, cooperation and communication (Taylor, Epper & Tolman, 1998).Two way radio communication is the most used means of communication between police officers in the world. Two way radio are usually mounted on patrol vehicles and motorcycles and helps the commanding stations coordinate and monitor the units on patrol (Ibinkunle & Adefihan, 2014).Each police jurisdiction has a well laid down radio communication procedures and policies. In Kenya some police officers on duty use VHF radios which most commonly are never in good condition. This make them to result to their personal mobile phones (Frilander, Lundina, Kutulek&Likaka, 2014). However the most ideal situation is where each officer is issued with a functional police radio while on duty

In sub-Saharan Africa, almost 60% of the total populations use mobile phones for communication. This has greatly increased person to person interaction and contributed to reduced cost of communication. In some rural areas, this is the first telecommunication means despite the existence of landline telephony for many years. The reduced communication cost has improved the sending and receiving of information of various economic, social and political dimensions.(Aker & Mbiti, 2010). Wide phone coverage provides a communication means among police officers and between police and citizenry in a given country (Hampton & Longham, 2005). Use of mobile phones has greatly increased efficiency and effectiveness of police officers because they can get necessary information on time when on patrols. Hampton and Longham(2005) also notes that use of smart phones in UK by police minimizes manual work which is usually paper intensive. The increased use of mobile phones by police in Brazil coupled by the readiness to use them has increased police accountability. This is so when the phones have video and audio collection capabilities. Such videos and audio can be streamed back to the

commanding station which is able to monitor and account for every officer in the field (Willis, Muggah, Kusslyn & leasin, 2013). The accountability aspects deter police officer from overuse of force and violence.

In Tanzania, police force has issued several mobile phone numbers to the community. These numbers are used by the community to make reports and provide any information relevant to policing. The effort is intended to enhance community policing through participation of the public in policing activities (Ringo & Busagala, 2012)

In Kenya most police officers and citizens posses mobile phones which could be or not be internet enabled. These mobile phones are mainly used for making voice calls or sending SMSs (Frilander,Lundina,Kutulek&Likaka,2014). The extensive ownership of mobile phones by both members of the community and police officers underscore the significance of mobile phone communication in policing activities in Nyandarua county.

Use of social media has grown tremendously with development of internet and smart phones. According to Carafano (2009), there are numerous means of information exchange through internet making conversations easier. Such social networking means include e-mails, face book, my space, you tube, flickers, Digg, LinkedIn, Twitter among others. A social network involves connecting people to form a voluntary group whose members have some interest in common. Such networks often grow beyond national boundaries to global level and consequently impacting on societal aspects including security. A good example is the terrorist attack in Mumbai where people updated each other on the happenings at scene through Twitter. Carafano (2009) notes that most of security agencies in USA such as FBI and Department of Homeland Security have created social media accounts such as Twitter communication. Security agencies have sometimes resorted to existing public social networks to communicate and search for intelligence.

Police agencies use social media to get information on crimes that may have occurred or that are likely to occur. Criminals and members of outlawed gangs usually post information about their criminal activities in social media platforms such as facebook. Such information may be key to police investigations (Wexler 2012).Traffic police in Australia use e-mail to communicate to traffic offenders. Various document necessary to processing of traffic offences are sent to the

offenders through emails hence saving police many man hours (Bruce &Tait, 2015).However Chunk (2015) recognizes the probability of police officers posting personal unauthorized or embarrassing information. According to ACPO, (2013) police should avoid using social media while drunk. They should also avoid using personal mobile phones for private social media purposes during working hours. Police service systems should only be used for social media strictly in accordance to the predetermined regulations. This is to avoid risks associated with police officers use of social media. These risks include exposing of confidential personal information to the public which may lead to legal action. Some posts in the social media may also lead to embarrassment of the service leading to heightened public distrust. unregulated social media use may also lead to disclosure of classified details of police operation reducing the chances of success when carrying out that operation.

In Kenya Inspector general of police and other senior security officers commonly use Twitter to communicate to the public on issues regarding public security and safety (Frilander, Lundina, Kutulek & Likaka, 2014). This attributed to the rising dependability of social media as a means of reaching the mass.

2.4 Record Keeping Technologies and Police Officers' Performance

According to a report by Her Majesty's Inspectorate of Constabulary [HMIC] (2015), information forms the primary base upon which police operation are founded. Any successful arrest, investigation or criminal justice is based on information hence data collection, analyses, storage, retrieval and dissemination activities are a necessity to a successful police undertaking. HMIC (2015) notes that police in England receive millions of report from members of the public and from their fellow officers. The reports are off different types such as accident reports and other which may call for police attention. All these pieces of information must be properly analyzed to ensure timely action depending on urgency of each.

A police information system is made up several components such as staff (both disciplined and civilian), computer hardware and software, a database and organizational policies and procedures that regulate handling of the system (Whisenand,1972). A lot of emphasis is put in collection, recording, processing, evaluation, sharing, retention, and retrieval of relevant information in any police service. By 2003, most police departments in USA had electronic

record on incident reports, warrants, stolen property, traffic accidents, arrests, criminal histories and summons. Most of the agencies have computer terminals with officer in patrol which help them write reports pertaining to their field experiences hence enhancing timely police action. This also reduces cumbersome paperwork associated with traditional policing. However this may impact negatively on the police officers' performance if more time is spent making the report(Koper ,Lum, Willis &Hibdon ,2015). FBI has an information system called uniformed crime reporting program (UCR) which collects crime data from more than 18000 police agencies in USA. Various subunits within FBI collects, manages, publicize and disseminate the received data. It is important to note that management of received data from collection procedures to dissemination changes with time as legislation, ease of accessing and other factors changes (Maltz, 1999).

According to a report by SEARCH (2001), when a suspect is arrested in USA, he is taken through a booking process by the arresting police agency. This involves taking into record personal details of the arrestee. Such details include name, address, eye and hair color, sex, race and any mark such as tattoo. Fingerprints are also taken. A copy of these details is maintained in the agency while two other copies are sent to the state repository and the other to the FBI repository. During record taking, the agency must check the criminal history of the arrestee which will also guide the subsequent criminal justice process. Police department in USA maintain database and data system which aid in data storage, management, retrieval, sharing and analysis. These systems are integrated to facilitate sharing of intelligence and criminal history records between agencies and among states. Police officers can remotely get information necessary for their operation from the integrated systems (Koper, Lum, Willis &Hibdon, 2015). The systems also help the police agencies to work together with other government and non-government agencies such as health care agencies, social workers, among others. Such cooperation helps in curbing crime out of criminal justice system (Milgram, Bremer, Wiest, Beisch&Truchil, 2018). Social workers for example through integrated system can identify the root cause of crime in a particular area and initiate a mitigation measure without involving police.SEARCH (2001) indicates that such state maintains its repository of criminal history records. A police officer can obtain the criminal history from the police agency repository, the state repository or the FBI repository. This access can be through an authorized computer terminal mainly in police stations or patrol vehicles. Such criminal records assist police officers

to carry out criminal investigation. The information also helps police officers in the field especially in identifying a suspected criminal. The criminal history record is important when police officers are requesting for a warrant from a court of law.

2.5. Problem Solving Technologies and Police Officers' Performance

Technological advancements such as innovation of video cameras, data mining systems, GPS technology and internet has made it easy for police activities such as crime control, crime detecting, crime investigations among others. The day to day police operation involves complex problems that require technology to solve efficiently and effectively (Ibinkule& Adejiham, 2014).Use of photography has played a significant role in the history of police investigations and operations. According to Richardson (1970), photography is among the earliest technologies that were applied in police operations. The first cameras used were simple and less effective as compared to the modern ones. By 1942, FBI in USA had a forensic laboratory that had a special photographic unit that evolved into the current Audio, Video, and Image analyst unit. Any photograph taken from a scene of crime and intended to be used as evidence is authenticated in such laboratories to avoid use of fake and irrelevant photographs (Robinson, 2010).According to Robinson (2010), any photograph is admissible in a court of law if only it is material and relevant. Digital photography has grown due to growth in development of digital cameras. Digital photography has greatly helped in the management of prisoners in correctional facilities through preventing prisoners from swapping identities.

Photographic documentation is the backbone of any investigation in a crime scene. Sometimes, it is extremely difficult to access a scene of crime due poor roads, imminent danger, and poor visibility among other reasons. This makes harder to get evidence on time despite the fact that some important evidential elements such as footprints and vehicle tracks can easily be disturbed and reducing their usability as evidence. Use of digital cameras mounted on unmanned aerial vehicles has made it possible to take aerial photographs in such complex scenes of crime. This has made easy for investigating police officers to get intelligence and preserve evidence which would have been impossible without the technology (Mendis, Dharmarathe &Wanasinghe, 2016). With increased use of smart phones that have high level cameras capability, photography in police services is taking a new dimension.

Police agencies in USA use GPS tracking technology to know the movements of suspected criminals by placing a GPS device on their vehicles. This enables officers investigating crimes to tell whether the suspected criminal was involved in a particular crime. It has assist to the Agencies to possible criminal acquaintances of the suspect in crime based on his movements and stopovers. This saves police officers time and difficulties associated with manually following a criminal suspect in search for intelligence (Wexler, 2012).According to Wexler(2012), GPS technology helps to know the position of police officers in -patrol in case they encounter a life threatening occasion such as accidents or attack by gangs. The reinforcement is availed faster because other police officer on patrol can get the precise location of the incident. Mounting GPS devices also enable supervisors in police stations to dispatch the closest police unit in patrol to any incident reported. Riverside police and Ventura county sheriffs in Califonia ,USA use GPS technology to enhance the efficiency of their aviation unit. It makes it possible for aviation unit in a police operation to know their exert location, the speed of the helicopter they are in and the precise location of the incident they are responding to. GPS technology helps the aviation unit to communicate with other police units on the ground to ensure a well coordinated response. This eliminates use of maps which is time consuming and cumbersome (Jaishanker, 2009).

According to Jaishanker (2009), police use GPS technology to conduct criminal investigation in motor vehicle thefts. A bait vehicle with GPS capabilities is placed in an easy to steal location. Police can thereafter get every location of the stolen bait vehicle enabling them to make the necessary arrests. This help to dismantle motor vehicle theft syndicates. This can be applied to other merchandise with high probability of being stolen. A GPS device is concealed in the merchandise. This technology can also be used privately by individual on their auto-mobiles because it boosts their security and monitoring. In England, offenders who are released from jails or on probation sentences are fitted with a GPS tag. This enables police officers to monitor their movements and collect any necessary data from their movements. The scheme is an initiative of the police force which is on voluntary basis (Hucklesby& Holdsworth, 2016). However, according to Ganz (2005), in many countries, the law is unclear on the regulations regarding the use of GPS system. For example, there is no clear law on whether to obtain or not obtain a court warrant before deploying a GPS device on unsuspecting persons suspected to be criminals.

It is estimated that by 2011, there were 1.85 million CCTV being in use in UK. Technological advancement and affordability of CCTV have seen its rapid growth in use in many fields. CCTVs are being used for supervision and oversight in business enterprises. In policing, CCTVs plays a major role in curbing crime and enhancing security (Wexler,2012).In Australia , huge number of CCTV have been installed in public places such as railway and bus stations. The CCTV footages are monitored on 24 hours basis. They help police force in preventing crimes through deterrence. A criminal avoids committing a crime in an area known to have CCTV cameras. The technology also helps police commanders in dispatching police officers to the area that a criminal activity might have been noticed on the CCTV footage. This may prevent a crime from happening to the end and can lead to easy apprehension of the offenders. The footages also help police officers to investigate crimes whose details might have been captured in the CCTV footages. Investigators can for example identify the perpetrator, especially with the help of facial recognition technologies, or a motor vehicle that may have been used in the commission of the crime. For CCTV cameras to be beneficial,they must be strategically placed and monitoring done in the right way (Morgan & Coughlan,2018).The government of Kenya has invested heavily on installation of CCTV cameras in the street of major cities such as Nairobi and Mombasa. The CCTVs, controlled and monitored by NPS, are intended to prevent crime and improve security (Revised Police reforms progress document, 2015-2018). Due to decreased cost and increased ease of use, many individuals have installed CCTV cameras in their homestead or business premises in Kenya.

2.6. Knowledge Empowerment Through Technology And Police Officers' Performance.

Police work is consistently changing as the community within which police officers serve changes. Changes within a community present unique complicated problem that require police to address. Such changes require new knowledge and skills to enhance capability of police officers to offer solutions(Wilson, Dalton, Scheer, Grammich, 2010). Police should take advantage of the advancement in ICT to meet the need for more knowledge and skills. Documentary films have always influenced and shaped human life. The films usually trigger a discussion over a societal topic thereafter a course of change is set. The ability of documentary films to present a non-fictional reality of a happening help individuals learn facts relating to the happening. Most of police based documentaries will include footages for example of police brutality when engaging the public, when arresting demonstrating students, when conducting security operations among

others(Juarez &Sara,2018). Watching such documentaries incites police officers to critically analyze each occurrence in the film and develop a concept of to do or not do given the same situation. A well coordinated documentary film can lead to a shift in societal values and norms culminating in changed societal practices. Watching a documentary film can result into a viewer becoming a defender and advocate of thematic concept of the film (Finneran, 2015). Documentary films whose theme is promotion of lawful police operations and respect for human rights can be very instrumental in influencing the daily practices of a police officer. Use of documentary films has grown with development of internet and you tube.

Libraries support any education system through provision of adequate learning materials such as books, films, recording among others. Different people use library materials for different purposes such as research, book discussion, need for knowledge, among others(Kogamuramath& Angadi, 2015). Much attention has been focused on digital libraries with academician, librarians, publishers and other stakeholders collaborating to develop a digital library model. This is occasioned by the need to develop a model that will ensure security of the information stored and also accessibility of the material by the intended user (Srinivasan, 1997). A huge amount of digital materials such as e-books and e-journals are available in digital libraries though there varied ways of accessing each digital library. According to Srinivasan (1997), some digital libraries require a login ID(identification),others use authentication by IP number while others have open access. The content of digital libraries is converted from physical to digital and stored in digital libraries repositories in PDF or HTML format. Any one in any part of the world can access the repositories so long he/she meets the pre-established access criteria. Most institutions are opting for digital libraries because of its various advantages. Digital libraries can be can accessed at any time whether physical library is open or not. It is also possible to keep record of the rate of library usage. It also saves space as compared to physical learning materials and therefore digital library reduces the running costs in the long run (Tenopir,2003).There are many types of digital libraries such as those developed by research centers, higher institutions of learning and public libraries. E-libraries could also be developed by organization such as home land security in USA (Issa, Blessing, Daura, 2009). Such libraries have enormous. Digital learning materials that can be of great help to police officers in replenishing their knowledge and skills.

Police of the police agencies and services have their information systems that have information that is usable by police officers for purposes of gaining knowledge. According to HMIC (2015), numerous reports both from the public and police officers are deposited in the police information system in UK. These reports present a summary of what a police officer experience in the day to day work. Police information systems contain reports such as crime events, victim/offender characteristics, criminal histories, performance indicators, emerging trends in policing among others. This reports contain a wide range of knowledge necessary to any police officer who may not be well conversant with a particular area of police work. For example, a police officer can gain knowledge on criminal behavior by starting the characteristics of offenders in the reports made earlier (Varano, Cancino, Glass & Enriquez, 2007).

2.7 Theoretical Framework

2.7.1 Unified Theory of Acceptance and Technological Use (UTAUT)

The study is based on Venkatesh (2003) unified theory of acceptance and technological use (UTAUT). Venkatesh (2003) identified four factors that have direct or indirect influence on a person's behavior. He concentrated his attention on information and communication technology. The four factors were performance expectancy, effort expectancy, social influence and facilitating conditions. The first three factors, performance expectancy, effort expectancy and social influence, has direct influence on behavioral intention to use while the fourth factor, facilitating conditions, together with behavioral intention, has direct influence on the technological usage (behavior). Performance expectancy refers to the degree to which a person believes that using a technology will help him achieve better in job performance. Effort expectancy refers to the perceived ease of using the technology. Facilitating conditions refers the level of believe of a person on availability of organizational and technical infrastructure necessary for using the technology. Social influence refers to the level of believe that others believe that he or she should use the technology.Vankatesh (2003) also identified four factors that have a moderating effect on the variables of the UTAUT theory. These moderators are age, gender, experience and voluntariness. According to Venkatesh (2003), if an individual expect high achievement in job performance (keeping other variables constant), he or she will have a positive behavioral intention and will therefore engage in the behavior. For example if one expect high level of achievement when using mobile communication, he or she will form a positive behavioral intention to use the mobile phone which will lead to him or her actually using

the mobile phone. The Venkatesh theory of 2003 will be used as an explanatory framework in the study by the researcher. The researcher will seek to establish existence of any relationship among police ICT usage intention, ICT usage and police officer's performance.

2.7.2. Task Technology Fit Theory (TTF)

The theory as proposed by Zugurs and Backland (1998) suggests that a better fit between technology and task leads to better performance. The major constructs of this theory are task, technology, fit and performance. The theory implies that a better fit between the features of technology and the features of a task leads to better performance. A group task needs a particular behavior towards achieving a given goal, a process and relevant information. This gives the three dimensions of technology as communication support, process structuring and information processing. Tasks can be categorized into simple tasks, problem tasks, decision tasks, judgment tasks and fuzzy tasks based on complexity of each. There are various bases upon which tasks can be categorized such as non-routine, job title, interdependence, complexity among others. Zugurs and Blackland (1998) came up with fifteen fit profiles obtained from the five task categories and the three dimensions of technology. For example, is it better fit between simple tasks and communication support and how does the fit influence performance? Is it a better fit between a problem task and structured process and what is the effect of fit on performance? It should be noted that complexity of a task is defined in terms of multiplicity of solution frameworks and multiplicity of outcome

2.8. CONCEPTUAL FRAMEWORK

INDEPENDENT VARIABLE

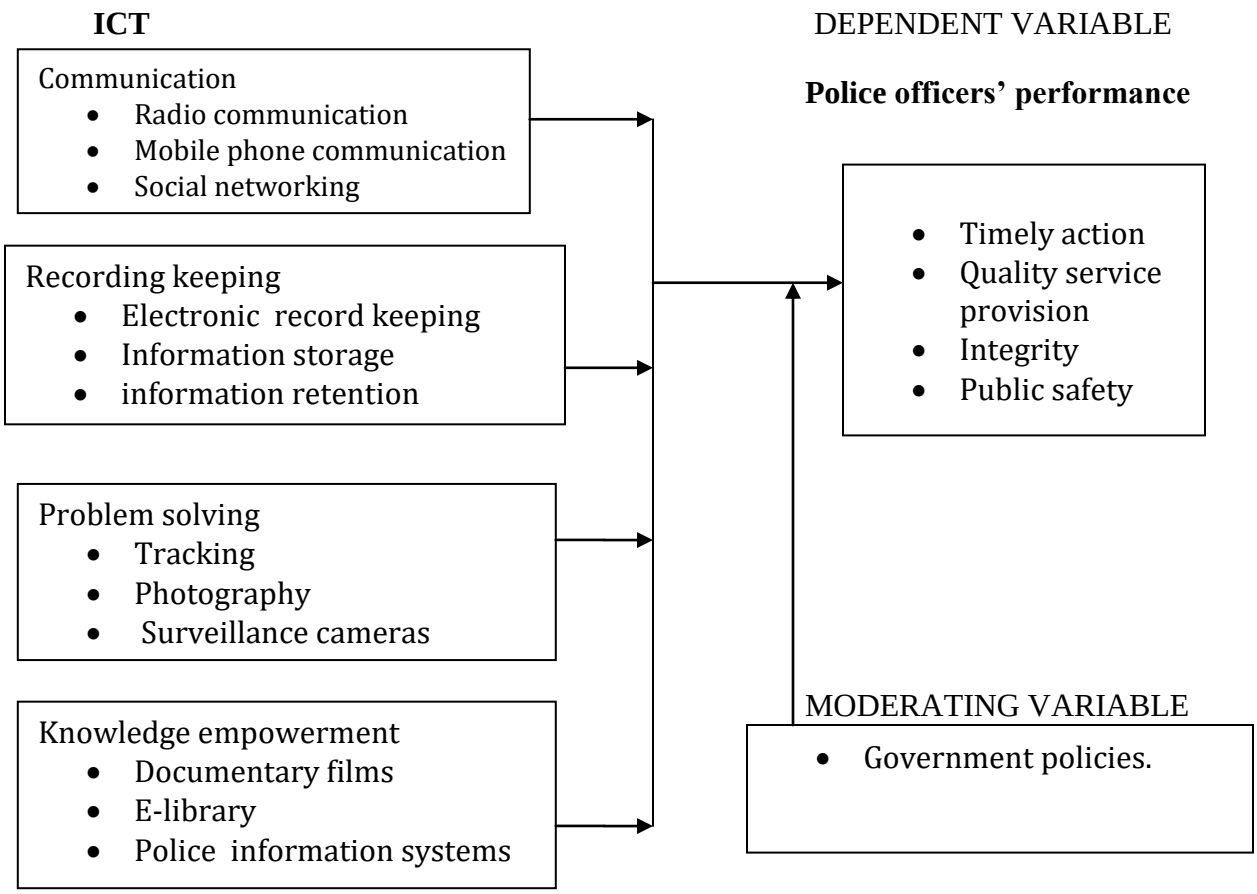

Figure 2.1 Conceptual framework

The study was conducted to establish the influence of ICT on police officers performance in Nyandarua county. The independent variable in the study is ICT. The researcher looked at four aspects of ICT that influence police officers' performance. These aspects are communication technology, record keeping technologies, problem solving technologies and knowledge empowerment technologies. The dependent variable in the study is police officers' performance. The performance has three aspects namely timely action, quality service provisions and public safety. The researcher introduced government policies as a moderating factor. This is in relation to availing financial resources necessary for installing ICT systems for police use. The

government also regulates use of some ICT items for official purposes and therefore police officers' usage of ICT must be within government policies.

2.9 Research gap

The literature review shows that the debate on the influence of ICT on police officers performance is not conclusive. Conducting this study is justified by the increased importance given to use of ICT in policing. The government of Kenya has given a lot of emphasis on providing necessary ICT infrastructure to National Police service. However the investment has not yielded the expected result in crime reduction. There is lack of adequate knowledge on how ICT influences police officers performance. It is against this background that the study aimed to bridge the knowledge gap by investigating the influence of ICT on police officers' performance in Nyandarua county Kenya.

2.10 Summary of Literature Review

The aim of literature review in the study was to elaborate on how aspects of ICT influence police officers' performance. On the influence of communication technologies on police officers performance, most researchers indicated that there was a positive impact. However it was noted that use social networking has associated risks if not well monitored. Use of problem solving technologies has also impacted positively on police performance. This is despite of the fact that there exist no or limited legislations that govern use of technologies such as GPS devices on unsuspecting criminals. Record keeping through police information systems has also contributed positively to police officers' performance. Some researchers indicated that sometimes police use a high percentage of their time writing reports hence isolating themselves from the public. Need for new knowledge and skills was also focused on. Literature review indicated consistent change in policing environment a fact that requires police officers to acquire new knowledge and skills to cope with the changing environment. It was found that technologies such as e-library can offer knowledge and skills acquisition opportunity.

CHAPTER THREE
RESEARCH METHODOLOGY

3.1. Introduction.

This chapter describes methodology that was applied in the study. It describes research design, target population, and sample size and sampling procedure. It also describes instrumentation, data collection procedures, data analysis and ethical considerations in the study

3.2. Research design

The research design adopted in this study was descriptive survey. In employing the descriptive design, the researcher sought to determine the influence of ICT on police officers' performance. Descriptive survey designs are mostly used when investigating social issues as found in the society. It help to describe, analyze and interpret the circumstances at the time of the study. Descriptive design are also easy to conduct (Mugenda 2008).

3.3. Target population

The target population of the study is 817 police officers serving in Nyandarua county . The 817 police officers serves under ten police stations within the county. The researcher focused on those police officers who have been in the service for more than three years as from the time of the study. This is because police officers with less than three years may not have interacted fully with the police system.

3.4. Sample size and sample selection.

The sample of the study comprised of 245 police officers which is 30%of the population of the study. According to Mulusa (1990) a 30% sample is considered a good representative of the population. The researcher used multistage approach to sampling. Five sub-counties out of eight in Nyandarua counties were selected using random sampling. Each police station in the selected sub-counties contributed an equal number of police officers to make up the sample (30% of the population). In the second stage, a list of all officers in a police station was obtained and each assigned a number. Then, every number assigned to the officer was written on a small paper which was folded to conceal the number and put in a tin. A number of papers equal to the amount allocated to the station were picked from the tin by blindfolding. Every officer whose number correspond to the one picked participated in the study.

3.5. Research instrument.

In this study, the researcher used questionnaires as tool of data collection. Questionnaires usually have standardized answers that make it easy to compile and analyze data. Administration of questionnaires is also easy and less costly (Mugenda& Mugenda,2003). Both close ended and open ended questions were used in the questionnaire.

3.6. Pilot testing.

The researcher conducted a pilot study in one of the sub-counties which was not among those sampled for the purpose of the main study. The pilot study was conducted to ensure that the research instruments are reliable. It also enabled the researcher to understand the ease of administering the instruments and detect any error that may not have been noticed. Pilot study was done into two occasions. In the first occasion, data was collected and stored. Then the researcher waited for two weeks to conduct the second occasion of pilot study. The second occasion of the piloting should not take a very short time after the first so as to remember how they answered the questions in the first occasion. It should also not take so long to avoid maturation factor effect on reliability (Kumar, 2005).

3.6.1. Validity

Validity refers to whether the instrument can measure what it was constructed to measure. It is the extent to which the instrument enabled the researcher measure what he/she was out to measure (Kumar 2005). The researcher also determined the content validity which sought to ensure that the instruments' questions are all related to the objective of the study. For content validation the researcher consulted the supervisor and other lecturers from ODeL of University of Nairobi.

3.6.2. Reliability.

Reliability is a measure of the extent to which an instrument produces consistent results after repeated trials (Mugenda& Mugenda, 2003). The trials were done in a pilot study. Pilot study was conducted with an objective of determining how adequate research design and instruments are for data collection. Test retest method was applied in the pilot study. Data was collected from selected ten police officers in two different occasions and time. The reliability of all the items opinions was calculated for all the five scales in the questionnaire as shown in Table 4.1. The computation was done through a computer program (Statistical Package for Social Sciences-veraion 25).The findings from this table showed that this questionnaire was very suitable for data

collection and thus it measured the constructs which it was supposed to measure. All the subscales had Cronbach's alpha of greater than 0.7 which is adequate (Pallant,2007).

Table 3.1 Reliability Statistics

Reliability Statistics

Scale	N of Items	Cronbach's Alpha	Conclusion
Communication technology	10	.895	Reliable
Record keeping technology	10	.945	Reliable
Problem solving technology	10	.934	Reliable
Knowledge empowerment technology	10	.952	Reliable
Performance of police	10	.942	Reliable

3.7. Data collection.

Research authority was sought from the Board of Post Graduate studies of the University of Nairobi to obtain a permit from the National Council of Science and Technology in order to conduct the study. The researcher then booked appointments with the respondents and thereafter personally collected the data. The researcher administered the instrument only after reading the letter of consent to the respondents. Those who didn't want to participate in the study were excused. Data collection was done at police stations only to ensure similarity of environment in the course of the study.

3.8. Data analysis techniques

The data collected from the respondents was analyzed using descriptive statistics by use of means, frequencies, standard deviations and percentages. The collected data was coded and run through Statistical Programme for Social Science (SPSS) which produced frequency tables and means. Text reporting was also used where necessary.

3.9. Ethical considerations.

In pursuit of ethical practices in research, the researcher ensured that all participants were informed that the research is for academic purposes. The researcher also obtained participation consent from all the respondents and ensured that no inducement or pressure was applied to encourage participation. Confidentiality was strictly observed by ensuring that no item that could reveal the identity of the respondents was included in the instruments. Items or questions that could be offensive to the privacy of the respondents were avoided in the questionnaires.

3.10 Operationalization of variables

Objective	Source	Type of information	Data collection instruments	Measuring scale	Analysis technique
To determine how communication technologies influences police officers' performance.	Police officers	• Experience in police communication • Availability of equipment	Questionnaire and interview	nominal	Quantitative
To establish the influence of record keeping technology on police officers' performance.	Police officers	-Experience in record keeping technologies. -availability of necessary equipments	Questionnaire and interviews	nominal	Quantitative
To investigate the influence of problem solving technologies in police officers' performance.	Police officers	-Experience with problem solving technologies -availability of necessary equipments	Questionnaire and interviews	nominal	Quantitative
To evaluate how knowledge empowerment through technology influence police officers' performance.	Police officers	-experience with technology for knowledge empowerment. -availability of necessary resources and facilitation.	Questionnaire and interview	nominal	Quantitative

CHAPTER FOUR

DATA ANALYSIS, INTERPRETATION AND PRESENTATION

4.1 Introduction

This chapter presents the study's findings based on analysis of the primary data that was collected. The chapter begins by presenting information on the rate of return of the questionnaires, the demographic characteristics of respondents and the analysis and interpretation of the findings from the data collected in the field on the influence of information communication technology on police officers' performance in Nyandarua County, Kenya. Presentation of findings was done using tables and below each statistical presentation, relevant explanations and interpretations were given.

4.2 Questionnaire Return Rate

The researcher distributed 245 questionnaires. The study received responses from 194 (79.18%) out of the targeted 245 respondents. The response rate of 79.18% was achieved through support of all the police officers in all the ten police stations. Comparable to previous scholars' works; for example, Awino (2007) who attained 57%, this is a high response rate. According to Bell (2005), a response rate of 60% is adequate to permit data analysis. Mugenda and Mugenda (2003) posit that a response rate of 50% is adequate, 60% is good and above 70% is very good. Going by this, the response rate was adequate for carrying out analysis for this study.

4.3 Demographic Characteristics of the Respondents

The study targeted ten police stations in the County. Respondents to the study were police officers who have been in the police service for at least three years from the time of this study so that they can be able to give informed responses.

4.3.1 Distribution of the Respondents by Gender

The researcher sought to establish the gender for the respondents for the study in order to ascertain whether it was gender sensitive. The results were presented in Table 4.2.

Table 4.1: Respondents Gender

Gender	Frequency	Percentage
Male	135	69.9
Female	59	30.1
Total	**194**	**100.0**

Tables 4.1 showed that majority (69.9%) of the respondents were male. Eagly (2007) posits that there exists a prominent evaluation gap between men and women in the workplace where women are disadvantaged in a male dominated setup. Although women stand at a disadvantaged position in these setting rendering Eagly to recommend that females need extra benefits, further studies should be conducted to look at the effects of gender ideologies in these contexts.

4.3.2 Distribution of the Respondents by Age

The respondents working in the projects were asked to state the age brackets in which they belonged to. The results are as showing Table 4.2.

Table 4.2: Respondents by Age brackets	Frequency	Percentage (%)
18 to 25 Years	8	4
26 to 35 Years	120	62
36 to 45 Years	56	29
Above 45 Years	10	5
Total	**194**	**100.0**

N=194

Table 4.2 shows that more than half (62%)of the respondents were in the age bracket 26 to 35 years, more than a quarter(29%) were in the age bracket of 36 to 45. Respondents above 45 years' age and 18to 25 years of age accounted for a smaller percentage. From this table it is evident that most of the police officers in this study were between 26 to 45 years of age. This showed that most of the officers from these police stations are in their productive ages and therefore were more involved I service delivery and that they understood properly the working modalities of the Kenya police service and hence it is believed that they gave informed responses.

4.3.3 Distribution of the Respondents by levels of education

The researcher also sought to establish the levels of education for the respondents so as to determine how qualified they were. These results were presented in Table 4.3**.**

Table 4.3: Respondents by Level of Education

Level of education	Frequency	Percentage(%)
KCPE certificate	3	1.5
KCSE certificate	109	56.2
Diploma Or Certificate	22	11.4
Bachelor degree	45	23.2
Master degree	10	5.2
PHD	5	2.5
Total	**194**	**100.0**

N=194

Table 4.3 shows that more than half (56.2%) of the respondents had KCSE certificates followed by undergraduates (23.2%). Respondents with diploma qualifications came in third (11.4%) followed closely by college certificate holders. The least representation was post-graduate (5.2%), Doctoral (2.5%) and KCPE (1.5%) qualifications. This therefore made it easier for the respondents to fill the questionnaires since they all could comprehend what was needed of them.

4.3.4 Distribution of the Respondents by length of service at the study

The respondents were asked to state their years of experience at the police service. The results are as shown in Table 4.4.

Table 4.4: Distribution of Respondents by years of experience

Working experience	Frequency	Percentage(%)
0-5 Years	12	6.3
6-10 Years	89	46
11-15 Years	52	27
16-20 Years	22	11.4
21-25 Years	10	5.2
30 and above Years	9	4.1
Total	**194**	**100.0**

N=194

Table 4.4 shows that nearly half(46%) of the respondents had worked at the police service for 6-10 years, more than a quarter(27%) had worked for 11-15 years, 1 out of 10 respondents had worked for 16-20 years, 6.3% had worked 0-5 years, 1 out of 25 respondents had worked for 21-25 years while the least number of respondents had worked for 30 and above years. The majority of the respondents were therefore young people who had less than fifteen years of service. However, this differs with a study on employee engagement where results show no significant relationship between years of service and participant engagement scores (Karen, 2009). It is therefore paramount to have a blend of all experiences as this provided a kind of a balanced alignment.

4.4 Performance of Police officers in Nyandarua County

The study sought to determine influence of ICT on performance of police officers in Nyandarua county. The dependent variable in the study was performance of police officers.The respondents were asked to rate the extent to which the constructs in Table 4.5 conform to the performance of police officers in Nyandarua county. Table 4.5 tabulates these findings

4.4.1 Descriptive Statistics for performance of police officers

To assess the performance of police officers in Nyandarua County, A ten constructs opinions were included in the tool as shown in the Table 4.5.

Table 4.5: Construct opinions showing performance of police officers

STATEMENTS	5	4	3	2	1
ICT help to engage in proactive self- initiated activities	38.1%	30.4%	1.0%	19.1%	11.3%
When making decisions about crime problems, I tend to rely more on my own experience than ICT	21.6%	4.1%	0.0%	32.8%	41.8%
ICT increases my capacity to prevent crime when on patrol	27.3%	35.6%	0.5%	13.9%	22.7%
ICT enhance my and public safety while on job	41.8%	30.4%	0.5%	9.8%	17.5%
Using ICT makes my work more interesting	41.8%	47.4%	0.0%	2.6%	8.2%
ICT makes me more effective in identifying and locating suspects, wanted persons and other persons of interest.	37.6%	31.4%	1.5%	22.2%	7.2%
ICT improves the way I interact and communicate with citizens	42.3%	40.7%	1.0%	10.8%	5.2%
ICT improves transparency and accountability in my work.	28.9%	39.2%	1.5%	25.3%	5.2%
ICT generates statistics that are valuable in assessing my performance	27.3%	35.6%	0.5%	13.9%	22.7%
Commanders and supervisors use information technology to identify underperforming police officers	31.4%	24.7%	2.6%	37.1%	4.1%

N=194

Key: 5=Strongly agree 4 – Agree 3-Neutral 2- Disagree 1 – Strongly disagree

From Table 4.5, the respondents generally agreed that ICT positively influenced their performance. For instance, majority of the respondents(83%) strongly agreed and agreed that ICT greatly improves the way they interact and communicate with citizens.. This correlates with the findings that ICT help police to solve complex crime problems thus greatly augment police ability to handle security and safety issues (Mansell, 1994)

4.5 Influence of communication technology on police officers' performance

The first objective of this study was to determine the influence of communication technology on police officers in Nyandarua county. The dependent variable in this study was performance of police officers. The responses therefore rated the extent to which the stated statements on the influence of communication technology conformed to the performance of police officers in Nyandarua county. This was analyzed using descriptive statistics, correlation analysis and regression analysis.

4.5.1 Descriptive statistics for Influence of communication technology on police officers' performance

A five-point rating scale was used to collect views from the respondents. Ten constructs were presented to the respondents as indicators of communication technology. They responded to the statements from the Likert's scale from strongly agree (5) to strongly disagree (1). This data was analyzed on the basis of percentage frequencies of the respondents and summarized on Table 4.6.

Table 4.6: Influence of communication technology on police officers'performance

STATEMENTS	5	4	3	2	1
I am well trained and conversant with police radio communication.	8.8%	25.8%	0.0%	11.9%	53.6%
Radio communication enables faster communication along the chain of command.	62.9%	21.1%	0.0%	16.0%	0.0%
Radio communication enables coordination between me and other officers during a police operation.	30.9%	21.6%	0.0%	12.4%	35.1%
Members of the public contact me via a mobile phone to report a security incidence.	14.9%	42.8%	1.0%	37.6%	3.6%
Mobile phone help me coordinate with my colleagues when at work	78.4%	18.6%	5.0%	1.0%	1.5%
I use mobile phone voice communication to gather intelligence and other relevant facts.	36.6%	42.3%	1.5%	19.6%	0.0%
Social networks help me interact with members of the community and my colleagues for the purpose of my job.	5.7%	2.6%	0.0%	67.5%	24.2%
Social networks are enables me get intelligence necessary for my work	35.5%	26.3%	1.0%	22.2%	15.5%
Social networks enable me engage community policing activities.	4.6%	36.6%	3.6%	32.5%	22.7%
Members of the community report security related issues through social networks.	1.0%	5.2%	10.8%	83.0%	0.0%

N=194

Key: 5 = Strongly agree 4 = Agree 3 = Neutral 2 = Disagree 1 = Strongly disagree

From Table 4.6, it is evident that communication technology had a significant positive influence of performance of police officers. For instance, in the fifth construct, 78.4% of the respondents strongly agreed that Mobile phone help police officers to coordinate with their colleagues when at work. This agrees with Hampton &Longham(2005) who observed that use of mobile phones has greatly increased efficiency and effectiveness of police officers as they are able to get necessary information on time during patrols.

Police officers were also asked the devices they mostly used in communicating with their colleagues. Results showed that most (64.9%) of the respondents used mobile phones, another 26.3% used radio calls and only 8.8% of the respondents indicated the use of social networks in their communication. This agrees with Aker &Mbiti (2010) who observed that police officers use different means of communication depending on the availability and the prevailing circumstances such as network coverage and urgency

On the issue of internet use for job related purposes, 88.7% of the respondents indicated that they did not visit the internet for job related purposes while 11.3% agreed to been visiting the internet for job related purposes. This indicates that most police officers visit internet for private purpose which is risky if done during work hours. This agrees with ACPO (2013) who noted that police should avoid using personal mobile phones for private social media purposes during working hours. This is to avoid risks such as exposing personal or unauthorized information to the public which lead to legal or disciplinary action.

4.5.2 Correlation for Influence of communication technology on police officers' performance.

This was tabulated using Pearson Moment Correlation Coefficient which measures the strength between two variables and denoted by r which assumes values ranging from +1 to -1 with 0 denoting that there is no association between two variables. This correlation was computed using influence of communication technology scores as the main variable and performance of police officers as the dependent variable. The analysis was indicated in Table 4.7

Table 4.7 Correlation for influence of communication technology on police officers' performance.

		Performance of police officers
Communication technology	Pearson Correlation	.975**
	Sig. (2-tailed)	.000
	N	194

**Correlation is significant at 0.01 level (2 tailed) r = 0.975, N = 194, P<.01

The results showed that there was a strong positive association (r=.975 n=194 p<.01) between influence of communication technology and performance of police officers as shown in Table 4.7. This is in tandem with the study by Taylor, Epper&Tolman(1998) who observed that most police work involve response to distress calls which require high level of coordination through use of communication technologies.

4.5.3 Regression Analysis for Influence of communication technology on police officers' performance

In order to establish the extent of influence of communication technology and performance of police officers in Nyandarua county the study used a coefficient of determination (R^2) using regression analysis. The results are presented on Table 4.8

Table 4.8: Influence of communication technology on police officers' and performance

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.975[a]	.951	.951	.28655

a. Predictors: (Constant), Communication Technology

Table 4.8 evidently shows that the R value which shows the correlation between communication technology and performance of police officers is at .975 which is 97.5%. This shows that there is an influence between communication technology as a predictor and performance of police

officers in Nyandaruacounty. The coefficient of determination (R^2) is .951 which represents 95.1% variation of performance of police officers as a result of communication technology.

Table 4.9: ANOVA for Influence of communication technology on police officers' and performance

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	**Regression**	306.651	1	306.651	3734.586	.000[b]
	Residual	15.765	192	.082		
	Total	322.416	193			

a. Dependent Variable: Performance of Police

b. Predictors: (Constant), Communication Technology

From Table 4.9 it is evident that communication technology is a significant predictor of performance of police officers in Nyandarua county. The P value is below the default Alpha value of 0.05 hence this shows that communication technology predicts performance of police officers.

4.6 Influence of record keeping technology on police officers' performance.

The second objective of this study sought to establish the influence of record keeping technology on police officers performance in Nyandarua county. This was analyzed through descriptive statistics, correlation analysis and regression analysis. The results were summarized in Table 4.10.

4.6.1 Descriptive statistics for Influence of record keeping technology on police officers' performance.

The statistical results in Table 4.10 for record keeping technology represented ten statements opinions. The items were rated on a five points scale from strongly agree (5) to strongly disagree (1). Each item in the responses was therefore converted to percentages that clearly points out how each of the constructs were responded to.

Table 4.10: Influence of record keeping technology on police officers' performance.

STATEMENTS	5	4	3	2	1
I am trained on electronic record keeping and maintenance.	23.7%	55.7%	0.0%	14.9%	5.7%
I prefer electronic record keeping to manual record keeping.	28.4%	36.6%	9.3%	3.1%	22.7%
I record all reports and complaint made at report office electronically.	1.5%	0.5%	1.0%	7.2%	89.7%
Electronic record keeping enables me follow a standardized record taking process.	47.4%	8.8%	2.6%	41.2%	0.0%
Electronic record keeping process enables me give better customer care service.	21.1%	50.0%	1.5%	11.3%	16.0%
Electronic record keeping help to reduce service time per client.	52.6%	19.6%	1.0%	8.8%	18.0%
I can retrieve past report office records from a computer-based storage.	61.3%	34.0%	0.5%	1.0%	3.1%
Electronic record keeping enables me give feedback to the members of the public on a complaint made by them or against them.	0.5%	73.2%	0.5%	14.9%	10.8%
It would be possible to retrieve all my station records if the station is completely destroyed.	77.8%	13.9%	1.5%	6.7%	0.0%
It is easy to alter, delete or expose station records without the necessary authority.	52.6%	19.6%	1.0%	8.8%	18.0%

N=194

Key: 5=Strongly agree 4 – Agree 3-Neutral 2- Disagree 1 – Strongly disagree

Table 4.10 reveals that record keeping technology had a substantial influence on performance of police officers in Nyandarua County. For example, more than three quarters (77.8%) of the respondents strongly agreed that it would be possible for them to retrieve all their station records if the station was completely destroyed. However only 2% of the respondents agreed that they record all reports and complaint made at report office electronically. This is in tandem with study by Koper, Lum, Willis &Hibdon(2015) who observed that most police service emphasize on

digital collection, recording, processing, evaluation, sharing, retention and retrieval of relevant information. However the study notes lack of necessary resources as blowback to such efforts in most police services.

On description of the process of crime report made, most of the police officers, 77.8% reported that it was paper intensive while 22.2% of the police officers found it less paper work. Electronic records such as digital Occurrence books have not been well integrated in the criminal justice system in Kenya. Maltz,(1999) advocates for realignment of legal requirements in the criminal justice system with the technological advancement in record keeping and maintenance. Courts in Kenya still require paper intensive police work such as case file compilation, issuing of summons and warrants among other documents. Official documents in police stations are also maintained in hardcopy in a predetermined format and are not acceptable in any other form. Most police officers lack skills and know-how on digital record keeping and maintenance

4.6.2 Correlation for Influence of record keeping technology on police officers performance.

Using Pearson Moment Correlation Coefficient scores from record keeping as an independent variable and performance of police officers as dependent variable, their correlation was computed. The scores were then converted into ratio scaled data by tabulating mean responses per respondents. The SPSS output results are as shown in Table 4.11 below.

Table 4.11: Correlation for Influence of record keeping technology on police officers performance.

		Performance of police officers
Record keeping	Pearson Correlation	.969**
	Sig. (2-tailed)	.000
	N	194

**Correlation is significant at 0.01 level (2 tailed) r = 0.969, N = 194, P<.01

The results in Table 4.11 clearly showed that there was a high positive association between influence of record keeping technology and performance of police officers (r=.969, n=194, p<.01). According to Koper, Lum, Willis &Hibdon(2015) maintaining databases and data systems police aids in data storage, management, retrieval, sharing and analysis facilitating sharing of intelligence and criminal history records between agencies and states.

4.6.3 Regression Analysis for Influence of record keeping technology on police officers performance.

To establish the level of influence of record keeping technology and performance of police officers the study used a coefficient of determination (R^2) using regression analysis as shown in Table 4.12.

Table 4.12: Influence of record keeping technology on police officers' performance

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.969[a]	.939	.938	.32056

a. Predictors: (Constant), Record Keeping Technology

From Table 4.12 the R value is at .969 which shows that there exists a strong influence of record keeping technology and performance of police officers in Nyandarua county. R^2 shows .939 on variation on performance of police officers caused by electronic record keeping.

Table 4.13: ANOVA Influence of record keeping technology on police officers performance.

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	302.686	1	302.686	2945.540	.000[b]
	Residual	19.730	192	.103		
	Total	322.416	193			

a. Dependent Variable: Performance of Police

b. Predictors: (Constant), Record Keeping Technology

From Table 4.13 where [F (1, 192) = 2945.54, P<.05] it is evident that record keeping technology influences performance of police officers in Nyandarua county and thus a significant predictor.

4.7 Influence of problem-solving technologies on police officers' performance

The third objective of the study sought to examine the influence of problem-solving technologies on performance of police officers in Nyandarua County.

4.7.1 Descriptive Statistics for Influence of problem-solving technologies on police officers' performance

Table 4.14 which represented a ten opinion statements spanning from strongly agree (5) to strongly disagree (1) which is a five points' scale. This was analyzed through descriptive statistics, correlation analysis and regression analysis. The results were summarized in Table 4.14 as shown below.

Table 4.14: Influence of problem-solving technologies on police officers' performance

STATEMENTS	5	4	3	2	1
Tracking technology has enabled me locate the position of a wanted suspect.	15.5%	14.4%	2.1%	53.6%	14.4%
I am conversant with the laws to relating to application of GPS in tracking a suspect	10.8%	1.5%	1.0%	27.3%	59.3%
Tracking system has enabled me get criminal intelligence on time.	21.6%	19.1%	0.0%	22.2%	37.1%
Tracking systems has enabled me know the position of a friendly troop in a police operation	27.3%	14.4%	2.1%	40.2%	16.0%
I am well trained on crime scene photography	2.1%	10.8%	0.0%	46.9%	40.2%
Photography has enabled me properly document a crime scene	42.8%	47.4%	0.5%	4.1%	5.2%
I have used photography as evidence in a court of law.	33.0%	29.4%	1.0%	31.4%	7.7%
CCTV technology has enabled me prevent commission of crime	37.1%	30.8%	16.1%	13.3%	62.4%
CCTV has enabled me identify perpetrators of a crime under investigation.	49.5%	22.2%	3.1%	8.8%	16.5%
CCTV has enabled me know the operation methods of criminals	41.8%	34.5%	0.0%	21.1%	2.6%

N=194

Key: 5=Strongly agree 4 =Agree 3=Neutral 2=Disagree 1 =Strongly disagree

It was evident from the respondents that problem solving technologies posit a strong influence on the performance of police officers in Nyandarua county. For example 49.5% and 22.2% of the respondent strongly agreed and agreed respectively that CCTV has enabled the identify perpetrators of a crime under investigation. However more than half (59.3%) of the respondents strongly disagreed that they were conversant with the laws relating to application of GPS in tracking a suspect. This is in tandem with the study by Ganz (2005) who observed that in many countries , the law is unclear on the regulation regarding the use of GPS system.

Police officers were also asked to state what they use to take photographs in a crime scene, a majority of them (90.2%) stated that they use their mobile phones in taking photographs and only 9.8% agreed to using a camera for this purpose. Police officers use what is available to solve a problem at hand and this explain the use of personal mobile phones in taking crime scene photographs. Approved police cameras and photographers may not be available to handle every crime scene. This agrees with Mendis, Dharmarathe&Wanasinghe (2016) concurred that with increased use of smart phones characterized by high level cameras capability by police officers, photography in police services is taking a new dimension.

4.7.2 Correlation for Influence of problem-solving technologies on police officers' performance

Pearson Moment Correlation Coefficient was used to calculate the scores for problem solving technologies as an independent variable and performance of police officers as a dependent variable. The high scale ratings indicated a high positive association between problem solving technologies and performance of police officers. The SPSS analysis output is shown in Table 4.15.

Table 4.15: Correlation for Influence of problem-solving technologies on police officers' performance

		Performance of police officers
Problem solving	Pearson Correlation	.965**
	Sig. (2-tailed)	.000
	N	194

**Correlation is significant at the 0.01 level (2-tailed). r = 0.965, N = 194, P<.01

From the analysis in Table 4.15, it is evident that there was a strong positive association between problem-solving technologies and performance of police officers (r=.965, n=194, p<.01). This is in agreement with Ibinkule & Adejiham(2014) who observed that technological advancement such as innovation of video cameras, data mining systems, GPS technology and internet has made it easy for police activities such as crime control, crime detecting and crime investigation.

4.7.3 Regression Analysis for Influence of problem-solving technologies on police officers' performance

In order to examine the level of influence of problem-solving technologies on performance of police officers in Nyandarua county the study used a coefficient of determination (R^2) using regression analysis as shown in Table 4.16.

Table 4.16: Influence of problem-solving technologies on police officers' performance

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.965[a]	.931	.930	.34142

a. Predictors: (Constant), Problem Solving Technology

From Table 4.16 the value of R was .965. This shows that there was a strong influence of problem-solving technologies and performance of police officers in Nyandarua county. A 93.1% variation of performance of police officers evidently shows that there exists a level of influence.

Table: 4.17: ANOVA of Influence of problem-solving technologies on police officers' performance

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	300.035	1	300.035	2573.859	.000[b]
	Residual	22.381	192	.117		
	Total	322.416	193			

a. Dependent Variable: Performance of Police

b. Predictors: (Constant), Problem Solving Technology

Problem-solving technologies is a significant predictor of performance of police officers as shown in Table 4.17 where [F (1, 192) = 2573.859, P<.05).

4.8 Influence of knowledge empowerment technologies on police officers' performance

The fourth objective of the study sought to determine the influence of knowledge empowerment on performance of police officers in Nayandarua County. This was analyzed through descriptive statistics, correlation analysis and regression analysis. The result was summarized as shown in table 4.18.

4.8.1 Descriptive Statistics for Influence of knowledge empowerment technologies on police officers' performance

This table has ten statements which tabulated the responses on influence on knowledge empowerment on performance of police officers within Nyandarua county. On a scale of 1-5 where 5 represented strongly agree and 1 represented strongly disagree, the responses were tabulated in Table 4.18.

Table 4.18: Influence of knowledge empowerment technologies on police officers' performance

STATEMENTS	5	4	3	2	1
It's important to enrich my knowledge of various aspect of my job	43.3%	44.3%	0.0%	3.6%	8.8%
I watch police documentary films to update and enrich my police work knowledge.	31.4%	42.3%	0.0%	10.8%	15.5%
Watching documentary films has enabled me observe human rights in the course of my job.	24.7%	39.7%	1.0%	27.8%	6.7%
Watching police documentary films enables me adopt best police practices in the world.	31.4%	42.3%	0.0%	10.7%	15.6%
I am a member of at least one e-library.	3.6%	6.7%	0.0%	4.1%	85.6%
E- Library enables me access reading materials which help me gain more knowledge on police work.	6.7%	20.1%	0.0%	58.2%	14.9%
E-library enables me access source of knowledge more cheaply than conventional libraries.	10.8%	19.1%	0.0%	40.2%	29.9%
Information obtained Police information system enables me gain insight on how to handle different job situations.	47.9%	31.4%	0.0%	3.6%	17.0%
Police information system enables me interact with other government agencies.	26.3%	14.9%	0.0%	10.8%	47.9%
I get enough records from the police information system for reference purposes.	20.1%	26.3%	1.0%	24.2%	28.4%

N=194

Key: 5=Strongly agree 4 – Agree 3-Neutral 2- Disagree 1 – Strongly disagree

Table 4.18 revealed that knowledge empowerment had a very strong influence on performance of police officers in Nyandarua County. A case in point is where 31.4% and 42.3% of the respondent strongly agreed and agreed respectively that watching documentary films enabled them observe human rights in the course of their duty. However more than three quarters (85.6%) of the respondents strongly disagreed that they were members of at least one e-library. Issa, Blessing, Daura(2009) notes that digital learning materials available in e-library are greatly important to police officers in replenishing their skills and knowledge.

On how police officers accessed internet for the purpose of seeking knowledge, a majority of them 76.3% stated that it was their own personal initiative while only 23.7% of the police officers stated that it was government sponsored in their respective stations**.** This is in agreement with Wexler (2012) who observed that most of the police stations and outposts are not connected to government sponsored WIFI (internet) in Kenya.

4.8.2 Correlation for Influence of knowledge empowerment technologies on police officers' performance

By applying Pearson Moment Correlation Coefficient, data scores for knowledge empowerment technologies as an independent variable and performance of police officers as dependent variable were tabulated. The high scale ratings implied a high knowledge empowerment technologies and high performance of police officers as shown in Table 4.19.

Table 4.19: Correlation for Influence of knowledge empowerment technologies on police officers' performance

		Performance of police officers
Knowledge empowerment	Pearson Correlation	.982**
	Sig. (2-tailed)	.000
	N	194

**Correlation is significant at the 0.01 level (2-tailed). r = 0.982, N = 194, P<.01

From Table 4.20, there is a strong positive correlation between knowledge empowerment and performance of police officers (r=.982, n=194, P=<.01). Knowledge empowerment technologies

contain a wide range of knowledge necessary to make any police officer to make him more conversant and productive in any particular area of police work (Varano, Cancino, Glass &Enquez, 2007).

4.8.3 Regression Analysis for Influence of knowledge empowerment technologies on police officers' performance

In order to determine the level of influence of knowledge empowerment and performance of police officers, coefficient of determination was used using regression analysis as shown in Table 4.20.

Table 4.20: Influence of knowledge empowerment technologies on police officers' performance

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.982[a]	.965	.965	.24167

a. Predictors: (Constant), Knowledge Empowerment Technologies

From Table 4.20 the value of R is .982. This shows that knowledge empowerment as a predictor has a high influence on performance of police officers in Nyandarua county. From these results a 96.5% variation of performance of police officers as a result of knowledge empowerment shows that there exists a high level of influence.

Table 4.21: ANOVA of Influence of knowledge empowerment technologies on police officers' performance

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	**Regression**	311.203	1	311.203	5328.494	.000[b]
	Residual	11.213	192	.058		
	Total	322.416	193			

a. Dependent Variable: Performance of Police

b. Predictors: (Constant), Knowledge Empowerment Technologies

From this table it is evident that knowledge empowerment strongly influences performance of police officers in Nyandarua county with [F (1, 192) =5328.494, P<.05), therefore knowledge empowerment is a significant predictor.

4.9 Overall Regression for performance of police officers

This study employed a multivariate regression model in order to determine the importance of the independent variables with regards to the dependent variable which is performance of police officers in Nyandarua county. This helped in identifying whether the key predictor variables used in this study are statistically significant. The study investigated how well the predictor variables will predict performance of police officers. The regression model used was as follows;

$Y=a+\beta_1X_1+ \beta_2X_2+ \beta_3X_3+ \beta_4X_4+Ɛ$

Where

Y =Performance of police officers

a=Y intercept

$\beta_1, \beta_2, \beta_3, \beta_4$ = Beta Coefficients

X_1 = Communication technology

X_2= Record keeping

X_3 = Problem solving

X_4 = Knowledge empowerment

Ɛ =error term.

Table 4.22 Model Summary

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.984[a]	.968	.967	.23309

Predictors: (*Constant*), problem solving technology, Record keeping technology, Communication technology, Knowledge empowerment technology

Dependent variable: Performance of police officers

From Table 4.22, R value which is the correlation between the predictor and the dependent variable was .984. The findings suggested that there was a strong influence of all these technologies on performance of police officers in Nyandarua county. The coefficient of determination (R^2) which indicates the proportion of variance in the dependent variable that was accounted for by the predictor(s) in our sample data was .968 which is 96.8% proportion of variance of performance of police officers as a result of the various technologies. Since $R^2$is always between 0 and 100%, a level of 0 shows none of the variability of the response data while 100% showing that the model explains all the variability of the response data around its mean, 96.8% is a higher value signifying the model fits well the data.

An analysis of variance (ANOVA) was also done to ascertain whether these technologies were a significant predictor of performance of police officers. The results were summarized in Table 4.2

Table 4.23 Analysis of Variance

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	312.148	4	78.037	1436.385	.000[b]
	Residual	10.268	189	.054		
	Total	322.416	193			

a. Dependent Variable: Performance of police officers

b. Predictors: (*Constant*), Problem solving technology, Record keeping technology, Communication technology, Knowledge empowerment technology

From Table 4.23 the ANOVA findings [F (4, 189) =1436.385, P<.05)] where the significance value of 0.00 depicts that there exists a significant influence of the predictor variables (Problem solving technology, Record keeping technology, Communication technology, Knowledge empowerment technology) and the dependent variable (Performance of police officers).

Table 4.24 Coefficients of Regression Equation

Coefficients[a]

Model			Unstandardized Coefficients		Standardized Coefficients	T	Sig.
			B	Std. Error	Beta		
1	(Constant)		-.026	.070		-.367	.714
	Communication technologies	X_1	.465	.113	.370	4.127	.000
	Record keeping	X_2	-.292	.126	-.220	-2.314	.022
	Problem solving	X_3	-.191	.087	-.178	-2.181	.030
	Knowledge empowerment	X_4	1.112	.140	1.009	7.962	.000

a. Dependent Variable: performance of police officers

Multiple regression was used in order to determine the association between performance of police officers and the four variables. As per the above SPSS generated Table 4.24, the multiple linear regression equation model that was fit was,

$$Y = -0.026 + 0.370X_1 - 0.220X_2 - 0.178X_3 + 1.009X_4$$

From the linear regression equation, the coefficients indicate how much the technologies varies with the performance of police officers when all other variables are kept constant.

Constant = -0.026. This shows that if communication technology, record keeping technology, problem solving technology and knowledge empowerment technology were all to be rated at zero, performance of police officers will be -2.6%. This shows that police officers cannot perform without these technologies.

X_1 =0.370 this shows that an increase in unit of communication technology results in 0.370 increase in performance of police officers. From the model, this predictor is statistically significant.

X_2 = -0.220 depicts that a decrease in a unit of record keeping results in a decrease in performance of police officers. From this model this variable was also statistically significant.

X_3 = -0.178 shows that a decrease in a unit of problem-solving technology result in 0.178 decrease on performance of police officers. This predictor was also statistically significant hence was used in the model.

X_4= 1.009 shows that an increase in a unit of knowledge empowerment technologies results in a 1.009 increase on performance of police officers. This predictor is also statistically significant.

From this table it is evident that all the technologies predictor variables were statistically significant and would highly influence performance of police officers within Nyandarua county.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents a summary of the study findings, conclusions and the recommendations made from the findings of the study. It also presents the suggestion for further researches.

5.2 Summary of findings

Summary of findings based on objective one which was influence of communication technology on police officers performance. The results indicates that 120(62.9%) of the respondents agreed that they receive instructions and sends feedback to their seniors through radio communication. The result also indicates that152(78.%) of the total respondents coordinate with their colleagues in their duties using mobile phones. This shows a positive influence of communication technology on performance of police officers. Communication technology and performance of police officers had a strong positive association with a Pearson correlation value of 0.975as detailed in table 4.8. The result also indicated a coefficient of determination of 0.951 implying that 95.1% variation of performance of police would be as a result of communication technology. The result also indicates that the p-value is below the default alpha value of 0.05 hence showing that communication technology predicts performance of police officers.

Summary of the findings based on objective two had half of the respondents agreeing that electronic record keeping enables better customer service. This was represented by 97(50.0%) of the respondents. Majority of the respondents also strongly agreed that electronic record keeping helped them reduce service time per client. This was represented by 102(52.6%) of respondents. The result showed that there was a high positive association between record keeping technology and performance of police officers with a Pearson correlation coefficient of 0.969 as detailed in table 4.12. A coefficient of determination 93.9% variation of police performance would be caused by electronic record keeping.

The summary of the findings based on objective three which was influence of problem solving technology on police officer's performance in Nyandarua county. 83(42.8%) of the respondents strongly agreed that photography enables them properly document a

crime scene. However 115(59.3%) of the respondents strongly disagreed that they are conversant with the laws relating to application of GPS in tracking suspects. A Pearson correlation coefficient of 0.965 as indicated in table 4.16 shows a strong positive association between problem solving technologies and on police officer's performance. The results also indicates a coefficient of determination of 0.931 which implies that problem solving technologies that problem solving technologies cause 93.1% of variation in performance of police officers. Problem solving was also found to be a significant predictor of performance of police officers.

Summary of findings based on objective four which was influence of knowledge empowerment technologies on police officers' performance in Nyandarua county. 82(42.3%) of the respondent agreed that documentary films enables them adopt best policing practices in the world. However 166(85.6%) of the respondent strongly disagreed that they are members of at least one e-library. The results also indicated a strong positive correlation between knowledge empowerment through technology and police officers' performance with a correlation coefficient of .0982 as detailed in table 4.20. From table 4.21 knowledge empowerment through technology causes 96.5% of variation in police officers performance there exist a high level of influence.

5.3 Conclusion

From the findings, the study shows that communication technology influenced positively the performance of police officers in Nyandarua County. Communication technologies enabled police officers interact with the members of the public and the fellow officers. It also enabled them gather intelligence and other relevant facts. Record keeping technology influenced police officers' performance. It enabled them follow a standardized record keeping process and offer better customer care services. It had a positive influence on police officers' performance. Problem solving technologies influenced performance of police officers in Nyandarua county. Photography enabled police officers document a crime scene and give concrete evidence in a court of law. Knowledge empowerment technologies had a positive influence on police officers' performance in Nyandarua county. Documentary films enabled police officers observe human rights in the course of their operations. It also enriched their general knowledge on police work.

5.4 Recommendations

Provision of necessary equipment accompanied by the relevant training on use should be enhanced. Related regulations and laws should be enacted to enable police officers legally apply the equipment in their operations.

Electronic record keeping should be adopted in all police stations and necessary equipment provided. This will enable better customer service and reduce service time per client.

Police officers operations should be based on problem solving technologies and necessary laws enacted to facilitate their use. Necessary equipment should also be provided accompanied by requisite training on their use.

Police officers should continuously use e-library, documentaries and other technologies enhance their knowledge to keep them up to date with the modern policing practices.

5.5 Suggestions for further research

1. The study was limited to influence of ICT on police officers' performance in Nyandarua county. More study should be carried out on the influence of other factors such as psychological status and welfare systems on police officers' performance.
2. More studies should be carried out on the influence of ICT on other departments in the criminal justice system such as law courts and prison.

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APPENDIX 1:

INTRODUCTION LETTER FOR DATA COLLECTION

June, 2019

Dear Sir/Madam

RE: DATA COLLECTION

I am a post graduate student pursuing a Master in Project Planning and Management at The University of Nairobi. I am undertaking a study on Influence of ICT on Police Officers' Performance in Nyandarua County. The study is designed for research purpose only. Your responses will be completely confidential and high ethical practices will be observed. You requested not to indicate your name or signature on the questionnaire. Please complete all the items in the questionnaire.

Your answers will be highly appreciated

Thank you

Elias Maina

APPENDIX II:

QUESTIONNAIRE:

Dear respondent, you are kindly requested to fill the questionnaire below with utmost honesty. Information provided herein will not be used against you under whatsoever circumstances. You are hereby guaranteed that the information you give will be treated with utter confidentiality. Please don't provide any form of identity on this on this questionnaire. Thank you.

SECTION A: Demographic factors of respondents

1. What is your age category?
   21-25 [ ] 26-35 [ ] 36-45 [ ] 46-55 [ ] 55 and above [ ]
2. What is your highest level of education?
   Primary school [ ] Secondary school [ ] Diploma or less [ ]
   Bachelor degree [ ]Master Degree [ ] PH.D Degree [ ]
3. In which service were you recruited?
   APS [ ] KPS [ ]
4. Have you ever had any formal training on ICT? YES [ ] NO [ ]
   If yes, at which institution?
   Secondary school [ ] Non police college/university [ ] police college [ ]
   On-job seminars [ ]
5. (a) In which of the following area category have you spent most of your years of deployment cumulatively ?
   I. Operational rural area [ ]
   II. Operational urban area [ ]
   III. Non operational rural area [ ]
   IV. Non operational urban area [ ]

   (b) In the years in 5(a) above, I …….. used ICT to carry out my duties.

   Never [ ] Rarely [ ] Occasionally [ ] mostly [ ] always [ ]

   .

SECTION B: Influence of communication technology on police officers' performance

Please indicate the level of agreement on the listed statement below. The scale used is a pointer from 1-5 scale, with 1 being 'strongly agree' , 2 being ' agree' , 3 being ' don't know', 4 being 'disagree', and 5 being 'strongly disagree'.

	To what extent do you agree with the following statements?	1	2	3	4	5
1	I am well trained and conversant with police radio communication.					
2	Radio communication enables me receive instructions and send feedback to my seniors while in the field for work.					
3	Radio communication enables coordination between me and other officers during a police operation.					
4	Members of the public contact me via a mobile phone to report a security incidence.					
5	Mobile phone help me coordinate with my colleagues when at work					
6	I use mobile phone voice communication to gather intelligence and other relevant facts.					
7	Social networks help me interact with members of the community and my colleagues for the purpose of my job.					
8	Social networks are enables me get intelligence necessary for my work					
9	Social networks enable me engage community policing activities					
10	Members of the community report security related issues through social networks.					

11. Which one of the following do you mostly use in communicating to;

a. Your colleagues: Radio call [ ] mobile phone [ ] social networks]

b. members of the public: Radio call [ ] mobile phone [ ] social networks [ ]

12. I visit internet most of the times for job rel purposes.

Yes ……..

No ……

SECTION C: Influence of record keeping technology on police officers performance.

Please indicate the level of agreement on the listed statement below. The scale used is a pointer from 1-5 scale, with 1 being 'strongly agree' , 2 being ' agree' , 3 being ' don't know', 4 being 'disagree', and 5 being 'strongly disagree'.

	To what extent do you agree with the following statement.	1	2	3	4	5
1	I am trained on electronic record keeping and maintenance.					
2	I prefer electronic record keeping to manual record keeping.					
3	I record all reports and complaint made at report office electronically.					
4	Electronic record keeping enables me follow a standardized record taking process.					
5	Electronic record keeping process enables me give better customer care service.					
6	Electronic record keeping help to reduce service time per client.					
7	I can retrieve past report office records from a computer based storage.					
8	Electronic record keeping enables me give feedback to the members of the public on a complaint made by them or against them.					
9	It would be possible to retrieve all my station records if the station is completely destroyed.					
10	It is easy to alter, delete or expose station records without the necessary authority.					

11. How can you describe processing of crime report made to you in any given day.

Paper intensive [ ] less paper work [ ] No paper work [ ]

12. What challenges do you encounter when dealing with police records?

……...

……

SECTION D: Influence of problem solving technologies on police officers' performance

Please indicate the level of agreement on the listed statement below. The scale used is a pointer from 1-5 scale, with 1 being 'strongly agree' , 2 being ' agree' , 3 being ' don't know', 4 being 'disagree', and 5 being 'strongly disagree'.

	To what extent do you agree with the following statement.	1	2	3	4	5
1	Tracking technology has enabled me locate the position of a wanted suspect.					
2	I am conversant with the laws to relating to application of GPS in tracking a suspect					
3	Tracking system has enabled me get criminal intelligence on time.					
4	Tracking systems has enabled me know the position of a friendly troop in a police operation					
5	I am well trained on crime scene photography					
6	Photography has enabled me properly document a crime scene					
7	I have used photography as evidence in a court of law.					
8	CCTV technology has enabled me prevent commission of crime					
9	CCTV has enabled me identify perpetrators of a crime under investigation.					
10	CCTV has enabled me the operation methods of criminals					

11. What do you use to take photographs in a crime sene?

i. Camera [ ] ii. Mobile phone [ ] others(specify) [ ]……

12. Do you encounter challenges while taking photographs, of a crime scene, using GPS and

CCTV.

No [ ]

Yes [ ]

specify……

…….

…….

…….

SECTION E: Influence of knowledge empowerment technologies on police officers' performance

Please indicate the level of agreement on the listed statement below. The scale used is a pointer from 1-5 scale, with 1 being 'strongly agree' , 2 being ' agree' , 3 being ' don't know', 4 being 'disagree', and 5 being 'strongly disagree'.

	To what extent do you agree with the following statement.	1	2	3	4	5
1	It's important to enrich my knowledge of various aspect of my job					
2	I watch police documentary films to update and enrich my police work knowledge.					
3	Watching documentary films has enabled me observe human rights in the course of my job.					
4	Watching police documentary films enables me adopt best police practices in the world.					
5	I am a member of at least one e-library.					
6	E- library enables me access reading materials which help me gain more knowledge on police work.					
7	E-library enables me access source of knowledge more cheaply than conventional libraries.					
8	Information obtained Police information system enables me gain insight on how to handle different job situations.					
9	Police information system enables me interact with other government agencies.					
10	I get enough records from the police information system for reference purposes.					

11. How do you access internet for the purpose of seeking knowledge?

i. Personal initiative [ ]

ii. Government sponsored in your station [ ]

12. Do government policies influence the use of ICT in your job?

Yes……..

No……

SECTION F: Performance of police officers.

The following statements relate to performance of police officers. How do they reflect your performance? In a scale of 1-5, tick appropriately 1 being 'strongly agree', 2 being 'agree', 3 being 'don't know' , 4 being 'disagree', and 5 being 'strongly disagree'

	To what extent do you agree with the following statements	1	2	3	4	5
1	ICT help to engage in proactive self initiated activities					
2	When making decisions about crime problems, I tend to rely more on my own experience than ICT					
3	ICT increases my capacity to prevent crime when on patrol.					
4	ICT enhance my and public safety while on job					
5	Using ICT makes my work more interesting					
6	ICT makes me more effective in identifying and locating suspects, wanted persons and other persons of interest.					
7	ICT improves the way I interact and communicate with citizens.					
8	ICT improves transparency and accountabilit in my work.					
9	ICT generates statistics that are valuable in assessing my performance					
10	Commanders and supervisors use information technology to identify underperforming police officers					

11. Does ICT helps you enhance the quality of your output as a police officer?

YES…….....

NO…….

12. What challenges do you think affects the quality of your output as a police officer.

……

…….....

……

APPENDIX 3: UNIVERSITY LETTER OF INTRODUCTION

UNIVERSITY OF NAIROBI
OPEN, DISTANCE & e LEARNING CAMPUS
SCHOOL OF OPEN AND DISTANCE LEARNING
KAKAMEGA LEARNING CENTRE

Your Ref:

Our Ref: Uon/Cees/Kak/1/47/ (207)

P.O. Box 422
KAKAMEGA
KENYA

Telephone: Kakamega 056-31038/0204917206

15th JULY 2019

TO WHOM IT MAY CONCERN

REF: L50/78427/2015 ELIAS GITONGA MAINA

ELIAS GITONGA MAINA is a student at the University of Nairobi, Open Distance & e –Learning Campus, School of Open and Distance Learning, studying for Master of Arts (Project Planning Management). He has completed his course work for Semester 1, 2 and 3.

He is undertaking a Research Project in titled "INFLUENCE OF INFORMATION COMMUNICATION TECHNOLOGY ON POLICE OFFICERS PERFOMANCE IN NYANDARUA COUNTY IN KENYA."

Any assistance accorded to him will be appreciated

UNIVERSITY OF NAIROBI
23 JUL 2019
KAKAMEGA LEARNING CENTRE

Kukubo Barasa
Regional Learner Support Coordinator, ODeL Campus UoN
+254 722 827277
barasa_kukubo@uonbi.ac.ke, kukubobarasa@gmail.com

APPENDIX 4: PERMIT FROM NATIONAL COUNCIL OF SCIENCE AND TECHNOLOGY INSTITUTE

NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION

RESEARCH LICENSE

This is to Certify that Mr., ELIAS MAINA of University of Nairobi, has been licensed to conduct research in Nyandarua on the topic: INFLUENCE OF INFORMATION COMMUNICATION TECHNOLOGY ON POLICE OFFICERS' PERFORMANCE IN NYANDARUA COUNTY KENYA for the period ending : 05/September/2020.

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