ACCESSIBILITY AND UTILISATION OF INFORMATION AND COMMUNICATION TECHNOLOGY BY THE NIGERIA SECURITY AND CIVIL DEFENCE CORPS IN SOUTHWESTERN NIGERIA

By

MEGA EGBEREDU
MATRIC NO: 76697

A THESIS IN THE DEPARTMENT OF LIBRARY, ARCHIVAL & INFORMATION STUDIES SUBMITTED TO THE FACULTY OF EDUCATION IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY AT THE UNIVERSITY OF IBADAN, IBADAN, NIGERIA.

FEBRUARY, 2020

ABSTRACT

The Nigeria Security and Civil Defence Corps (NSCDC) was established to assist in the protection and rescuing of the populace during the period of emergency as well as maintaining 24 hours surveillance over public infrastructure against any act of criminality. However, there is evidence that this mandate of the NSCDC cannot be achieved without appropriate and effective deployment of ICT. Previous studies have focused largely on disaster management, and peace and conflict resolution activities of the NSCDC with little emphasis on the agency's deployment of ICT for security management. This study, therefore, was designed to investigate the accessibility and utilisation of ICT by NSCDC in Southwestern Nigeria.

Human Capital, Diffusion of Innovation and the Path-Goal theories served as anchor, while the survey design was adopted. The Zone 'F' Command of the NSCDC comprising all the states in the South-west, except Lagos State, was randomly selected, while stratified and simple random sampling techniques were used to select 939 personnel from three out of the four existing departments across the zone: Administration (260), Operations (488) and Intelligence/Investigation (191). Instruments used were ICT Accessibility (r=0.95), ICT Utilisation (r=0.95) and Security Management (r=0.74) scales. Data were analysed using descriptive statistics, Pearsons product moment correlation and Multiple regression at 0.05 level of significance.

Respondents consisted of male (62.8%) and female (37.2%), with 55.3% aged 27.79±4.76 years. Officers on cadres' basis were inspectorate (38.0%), superintendent (29.5%), corps assistant (27.3%) and commandant (5.2%). Computers ($\bar{x}$ =3.00), mobile phones ($\bar{x}$ =2.99), internet facilities ($\bar{x}$ =2.70), video camera ($\bar{x}$ =2.48), fax machines ($\bar{x}$ =2.08), interactive radio ($\bar{x}$ =2.20) were highly accessible and deployed for administration as against the criterion norm of $\bar{x}$ = 2.00. Walkie-talkie ($\bar{x}$=1.84), wrist phones ($\bar{x}$=1.81), closed circuit television ($\bar{x}$=1.71), spy video sunglasses ($\bar{x}$=1.70), crime maps ($\bar{x}$ =1.64), electronic whiteboards ($\bar{x}$ =1.63), infrared cameras ($\bar{x}$ =1.53), and surveillance cameras ($\bar{x}$ =1.52) deployed during operations and intelligence gathering were rarely accessed and utilised. Accessibility (r = 0 .55) and utilisation (r = 0.54) of ICT had significant positive relationships with security management by the NSCDC. Accessibility and utilisation of ICT jointly predicted NSCDC's security management ($F_{(2, 936)}$= 330.71; Adjusted R^2=0.41), accounting for 41.3% of its variance. Accessibility (β=0.39) and utilisation (β=0.37) contributed to security management.

Computers, mobile phones, internet infrastructure were accessible and deployed for security operations by the Nigeria Security and Civil Defence Corps, Zone 'F' Command. Security-related activities require the processing of information, therefore, the management of Nigeria Security and Civil Defence Corps should procure high quality technological tools that comply with global law enforcement standards for effective performance, so as to be better positioned to achieve her statutory mandate of curbing crimes and protecting Critical National Assets and Infrastructure.

Keywords: Information and Communication Technology, Nigeria Security and Civil Defence Corps, Crime rate in South-western Nigeria, Vandalism in South-western Nigeria

Word count: 496

ACKNOWLEDGEMENTS

My profound gratitude goes to God Almighty, the Creator of the universe and His only Begotten son, Jesus Christ, for making it possible for me to complete this programme successfully. It is not by my power but by the special grace of God. What can I say unto the Lord? All I have to say is THANK YOU LORD.

I am indebted to all who contributed to the successful completion of this study. First of all, my appreciation goes to my supervisor, Professor O.A. Okwilagwe. Thanks for your guidance all through the programme. Your constructive criticisms and advice helped a great deal, not to talk of the time spent to complete the work.

Equally worthy of my gratitude is the Head of Department, Library, Archival and Information Studies (LARIS), Professor S.O. Popoola, and other lecturers in the Department and within the University including Professor I. Mabawonku, Professor Morayo Atinmo, Professor G.O. Alegbeleye, Professor. K.I.N. Nwalo, Dr. A. Abioye, Dr (Mrs.) A. Adetimirin, Dr. Apotiade, Dr. Akangbe, Dr. Igudia, Mr. Bada, Mr. Folorunso. Thank you all for your academic leadership and support. The list will be incomplete if I fail to express my gratitude to the non academic staff of the Department of LARIS for their show of love and assistance during the course of the programme. They are Mrs. Emeahara, Mr. Sunday, Mr. Akpan, Mr. Wale, among others.

Special thanks go to my colleagues in the profession, namely Dr. S. Ogunniyi, Dr (Mrs.) Alice Bamigbola, Mrs. Adetoun Oyelude, and Mr. Charles Eruanga. Your words of encouragement were helpful.

I am very grateful to my superiors and colleagues in the Nigeria Security and Civil Defence Corps. Thanks to Dr. Ade Abolurin for giving me the opportunity to study for the programme during his tenure as the Commandant-General. I am also indebted to the incumbent Commandant-General, Mr. Abdullahi Gana, for the opportunity to complete the programme successfully. Mr. Olasupo Solomon (Commandant), Mr. Felix Gbolade (Commandant), Mr. Hammed Abodunrin (Commandant), Ms. Suulola Ronke (Deputy Commandant), thanks for your encouragement and the time to attend lectures and seminars. Also worthy of my gratitude are my colleagues in the office, Mr. Ibikunle Yunusa, Mr. Jide Akinpelu, Mr. Alade Adekunle, Mr. Dayo Ojo, Mr. Aremu Sangolade, Mr. Suraj Okunola, Mrs. Temilade Faleti, Mrs. Adija Ajose,

Mrs. Bukola Lawal, Mrs. Njoku Abiola, Mr. Azeez Salam, Mr. Idowu Ayodele, Mr. Oni Sunday, Mr. Salaudeen Olawale, Mr. Shittu Kazeem, and Mr. Femi Malomo.

I thank my dear children, Esseoghene Akinshola and Goodness Jabbar, for being patient with me in the course of the programme. Thank God for having beautiful and understanding children as you.

My parents and siblings too are specially acknowledged. Mr. Elliot Egberedu, you are a good father, and your wife, a dear mum, Mrs. Josephine Egberedu, a rare gem of a mother. God will continually strengthen you in your old age. I remember the times they stood by me and fought for my progress. Their prayers on my children and I go a long way towards our success.

Special thanks to my brethren in Christ and ministers of the God's Kingdom Society, the Church of the Living God, for their prayers and encouragement. God bless you all.

Egberedu Mega
February, 2020

CERTIFICATION

I certify that this research work was carried out by Mega EGBEREDU in the Department of Library, Archival and Information Studies, University of Ibadan, Ibadan.

.....

Supervisor

Professor O.A. Okwilagwe

B.A., M.A., MLS, MLitt (Stirling), PhD, Ibadan

Department of Library, Archival and Information Studies,

University of Ibadan, Ibadan.

DEDICATION

This research work is dedicated to my children, who are special gifts from God,

Esseoghene Akinshola

and

Goodness Jabbar

TABLE OF CONTENTS

List of Tables

List of Figure

CHAPTER ONE
INTRODUCTION

1.3 Background to the study

Security is indispensable in nation building. This is because a well secured nation guarantees protection and safety of the citizens who constitute the development process. There are easily recognisable diverse security problems confronting Nigeria. These are kidnapping, terrorism, vandalism, armed robbery, militancy, child trafficking, ritual killing and assassination. Crime poses a danger to the security of a nation in terms of the economic, political and social activities and is a key cause of underdevelopment as it discourages investments both locally and internationally. Also, it decreases the quality of living as well as destroys either human or social capital. In addition, crime damages association among the populace and the nation state, thus undermining democracy, rule of law and increased development (Adebayo, 2013).

However, Adebayo (2013) maintains that globally, every society has its atypical challenges, including Nigeria. According to him, Nigeria as a developing country has its own social, political, economic and cultural problems which have an effect on the general population. According to him, the increased crime rate and the inability of security agencies to prevent and control crime is a problem Nigeria faces. He is of the view that the security agencies are poorly equipped not to talk of being motivated.

Ani and Onyebukwa (2016) identified different forms of security threats in Nigeria, in addition to how a number of major military and non-military forces of insecurity are weakening the process of national development in the country. In addition, Abdulsalaam (2005) identified the major security problems in Nigeria to be mostly emanating from political and electoral disagreements, socio-economic protests, boundary disputes, cultism, ethno-religious crisis, criminality and organised crimes, among others. These security problems constitute a threat to the peace of Nigeria. It is only a careful strategic action plan laced with the deployment of appropriate technology against the background of a ready and active human resource that can ensure effective national policing of crime for maximum security in the nation. In other words, access to information and communication technology and utilisation of same, would ensure security in the country.

Security management is basically concerned with the management of inherent issues that fuel and sustain criminalities in the society (Aremu and Ahmed, 2011). Security management in

the context of this study entails steps taken by security agencies in safeguarding lives and property of the civil populace, which includes maintaining public order, enforcing the law, information and intelligence gathering, as well as detecting, investigating, and preventing crime.

Surveillance technology is crucial to security management. Surveillance is defined as any covert watching of persons, vehicles and places usually undertaken by statutory security agents and private detectives to determine commission of an offence or prevent a criminal act. Surveillance can either be through observations physically or monitoring of events electronically (Heibutzki, n.d.). Observatory technique can also include electronic equipment such as CCTV cameras or bugging and interception of phone calls (Leighton and Maximino, 2014).

Criminal investigation is also important in security management. It is the process of collecting information or evidence about a crime so as to: establish that a crime has actually been committed; identify the perpetrator; apprehend the perpetrator; and make available evidence to support a conviction in court (Net Industries and its Licensors, 2020). Gehl (2017) described criminal investigation as a progression of activities or steps moving from evidence gathering task to information analysis, to theory development and validation, to forming reasonable ground to believe, and finally to the arrest and charge of a suspect. O'Hara and O'Hara (1994) described criminal investigation as a science encompassing studying facts with a view to identifying, locating and proving the guilt of someone suspected to have committed a crime. A thorough investigation is bound to involve searching, evidence collection and preservation, interviews as well as different means of investigation.

In security management, intelligence gathering and crime prevention are crucial. Intelligence gathering is the process of collecting information (*Collins English Dictionary*, 2017). Crime prevention is defined by *English Oxford Dictionary* (2017) as adoption of measures targeted to decrease or stall illegal behaviours, especially through the establishment of programmes aimed at deterring potential offenders or enhancing the security of intended targets.

The Nigeria Security and Civil Defence Corps (NSCDC) is one of the security agencies mandated to ensure security of the people in Nigeria. The idea of the Civil Defence Corps can be traced to the period the Roman Empire was a world power. During the era, Emperor Nero embarked on the consolidation of the Empire's political powers by establishing colonies all over the world. "A development during the expansion of the Roman Empire led to an acute shortage of citizens of military age to provide essential services such as home defence, provided for

civilians affected by wars and other vulnerable citizens such as the aged, women and children. The Emperor was forced to create an organisation charged with safeguarding the civil populace" (Abolurin, 2010).

During the first and second World Wars, the various names given to the organisation include 'Home Front', 'Home Guards', and 'Body of Air, Road, and Disaster Protection'. However, the appellation 'Civil Defence' was coined by the organisation after the World Wars. Since then, the Corps has since assumed an international organisation status accepted by various countries across the world serving functions peculiar to the aspirations needs, interests, and fundamental capability of different countries (Abolurin, 2010).

The NSCDC is a paramilitary agency established to safeguard the civil populace under the Nigerian Government. In 1967 during the Civil War in Lagos, the NSCDC started as a voluntary organisation. Initially, it was known as the Lagos Civil Defence Committee with the objective of sensitising the Lagos Public as a result of the 1967 Civil War. The Charter of 6 April, 1968 however, made it possible for states that may wish to establish the Corps within their jurisdiction to do so (Abolurin, 2010).

The NSCDC was appropriated as a statutory security outfit by virtue of an establishing Act No. 2 of 2003 and as amended by Act 6 of 4 June, 2007, by the Federal Government under the administration of President Olusegun Obasanjo and brought under the supervision of the Federal Ministry of Interior. For about 36 years (1967-2003), the Corps operated essentially as a voluntary organisation. The NSCDC is divided into eight (8) zones, (Zones A-H), which cuts across the federation. The Zone 'F' Command of the NSCDC cuts across five (5) states in South-West Nigeria – Oyo, Ogun, Ondo, Osun, and Ekiti, with the exception of Lagos State, which is another zone entirely.

The vision of the Corps is "to put to work Efficiency, Humility, and Integrity in Service Delivery with a fresh zeal; to bring credibility into the whole concept of security thereby restoring the much needed confidence of the Nigeria public...." The mission of the Corps is "to ensure the safety of lives and property of Nigerians and other countries' nationals, residing within the country's territory; and to stamp out crime and guarantee safety of all Government property" (www.nscdc.gov.ng).

The organisational structure of the Civil Defence Corps is not quite different from the conventional ones of such agencies. Thus, the Corps is headed by the Commandant-General

(CG) of the Corps, who is assisted by a crème of Deputy Commandant-Generals (DCGs). The Deputy Commandant-Generals are four in number, in charge of four directorates which include: Administration, Operations, Intelligence/Investigation, and Technical Services. Next in hierarchy are the Assistant Commandant-Generals (ACGs) also referred to as Zonal Commanders in charge of Zonal offices nationwide followed by Commandants, who are in charge of State Commands. This is followed by Area Commanders who are responsible for securing Senatorial Districts in the State. The Divisional Officers in the State man the 774 Local Government Areas. The District Heads maintain law and order in all Districts within the division and are answerable to the Divisional Officers of the Local Governments, while the last in the hierarchy, the Cell Officers in charge of the grassroots take control of the wards and reports to District Officers. This is as follows: Cell Officers, District Officers, Division Officers, Area Commanders, Commandants, Assistant Commandant Generals, Deputy Commandant Generals (Admin, Ops, Intel/Inv., & Tech), and the Commandant General (Abolurin, 2010).

The nature of the organisational structure allows authority, directives and information to flow downward. However, information on the field flows upward. The very nature of the NSCDC communication is central to its activities. The various work activities of the staff probably depend very much on the use of Information and Communication Technology (ICT). This means that officers and men of the various offices and those on field operations could deploy ICT to carry out their various functions for effective service delivery. This implies that accessibility to, and use of ICT could be central to the effectiveness of NSCDC.

The new wave of crime globally is prompted by globalisation of cultures, economic and technological activities. According to Longe, Nagwa, Waya, Mbarika, and Kvasky (2009), ICT proliferation in sub-Saharan Africa has created remarkable positive changes in socio-economic growth and development in the region. However, ICT is now a tool used by criminals in perpetrating myriad online crimes. Other indirect illegalities for example, child pornography, identity theft, e-mail scam, as well as prostitution racket are some of the vices that are persistent on the internet. This trend has led to the breeding of cyber terrorists as many African nations have become safe haven for terrorists' recruitment training using just laptops with Internet access as detonating device. A study by Longe *et al*., (2009) highlights how criminals make use of ICT especially Nigerian 419 scammers in sub-Saharan Africa. The study also reviewed the origin,

metamorphosis, concerns and effects of these challenges while also suggesting strategic policies to address the problem (Longe *et al*., 2009).

Peculiar characteristics of nations such as their location, the amount of resources at their disposal, demographics among others have determined the nature and strategy employed in curtailing crimes within their borders. Such efforts are necessary because prevalence of crime and criminality can arrest development by preventing Foreign Direct Investments (FDIs) and deter local entrepreneurs from engaging fully in commercial activities. After all, crime has been identified as capable of undermining development (Sylvester, 2001 in Longe *et al*, 2009). Many studies have assessed how ICT is used for illegal activities in Africa. Such studies reviewed the trend and scrutinised the evolution and nexus between ICT and crime (Ayoku, 2005; Longe *et al*., 2008; Longe & Chiemeke, 2007; Smith *et al*., 1999; Ribadu, 2005; Adomi & Igun, 2008; Sylvester, 2001). It is believed that despite the increased usage of ICTs in Africa, there still exists an increase in the illegal usage of technologies to perpetrate social vices, hence leading to a situation whereby technologies designed for good purposes are deployed otherwise.

Longe *et al* (2009), however, recommended the importance of collaboration among security and other law enforcement agencies in Nigeria in the fight against cybercrime. Since cyber crime is no respecter of national boundaries, therefore, agencies need to share intelligence and other resources including their human capital. This will make enforcement of laws have a global outlook since cybercrime is also a global challenge. In addition, he averred that Nigeria needs to collaborate with other African nations' security forces as well as other international law enforcement agencies such as the CIA, FBI, and the INTERPOL.

Ratcliffe (2008), however, avers that the fallout of the Cold War within the last century has led to disintegration of nations. This has brought about the challenge of increased international crimes such as illicit commodities, explosion in electronic financial transactions through the Internet, among others which has led to increased international crimes. All these needs policing as law enforcement agencies cannot continue to refrain from collaboration even with their contemporaries in neighbouring countries. This may require security outfits to restructure and model their activities to suit such complex collaborative approach as failure to do so could be very dire (Ratcliffe, 2008). Drivers such as gap in demand, information technology improvements, modern public management techniques, increased presence of organised crime,

led to a favourable environment for policing anchored by intelligence. There are notable milestones indicating the route to the contemporary law enforcement landscape (Ratcliffe, 2008).

In the mid-70s, police departments adopted ICT solutions for their information management needs the more. While the initial idea was to collect statistics for governmental purposes and the management of the information needs of agencies outside policing, it became obvious to law enforcement officials that the vast volumes of data collected internally could be used to influence decision-making by security operatives (Chainey & Ratcliffe, 2005; Ericson & Haggerty, 1997). Crime analysts (often separate from intelligence officers) began cropping up in police departments as a group adept in using this 'new knowledge' to provide tactical support for mid-level commanders and create a strategic picture of crime for senior management.

Although there are diverse security threats in Nigeria, there are also many security agencies mandated to safeguard those domiciled in the country. The Nigerian security sector consists of the Nigerian Police, Nigeria Immigrations, Nigeria Customs, Nigeria Prisons Services, Nigeria Fire Services, the Nigeria Security and Civil Defence Corps (paramilitary agencies), Nigerian Army, Nigerian Navy, Nigerian Air Force (Armed Forces), as well as other security agencies such as the Department of State Security Services (DSS), the Independent Corrupt Practices Commission (ICPC), the Economic and Financial Crimes Commission (EFCC), and the National Intelligence Agency (NIA). Each of these agencies is a unit of a broader security system in Nigeria.

The contemporary security challenges in Nigeria have resulted in new perspectives more than ever before, the need to reconceptualise the security system. To defeat small, innovative and adaptive threats in the country, the researcher is of the opinion that there is the need to apply, re-engineer and utilise up-to-date and relevant information. Security agencies gather large amount of data from various sources and utilise them during operations. With the new dimension which criminals have taken with the use of highly sophisticated weapons, there is need for the agencies to be more Information Technology (IT)-compliant as criminals themselves are evolving, and highly compliant with the use of information and communication technology. The adroitness being displayed by the criminals indicates that there is need for security re-definition in conformity with growth in technology.

Currently in Nigeria, criminals rob banks with machine guns and explosives. It has been observed by the researcher that criminals also use high level connectivity utilising various

information technologies to break into secured networks, as well as hack restricted codes, and terrorists carry out nefarious acts utilising highly sophisticated technologies. With the new dimension in criminality in the country, it is required that security agencies deploy new tactics to fight crime. Technology can help in building capabilities in fighting the new crime wave and counterterrorism war. Therefore, accessibility and utilisation of ICT could prove essential in the fight against criminals towards making the Nigerian State safer.

Security agencies need to be equipped and compliant with the use of ICT to make quick decisions, select effective strategies and tactics to detect, prevent and make immediate responses to combat crimes. The utilisation of advanced technologies by security agencies would make it possible to detect criminals. Information and communication technology should not only be accessible to security agencies but must be effectively utilised to identify and manage the consequences of any attack. It should be used to collect, access, analyse and report data which are relevant to tragic events in order to detect, prevent, and manage responses to the attacks.

There are different ICT tools that can be effectively utilised by security agencies. These tools coupled with proper intelligence gathering ensure effective security management. Oyeobu (2010) identified some ICT tools in policing, which if properly utilised by security agencies would enhance effective security management in Nigeria. These tools include: in-camera systems, crime lights, graffiti cameras, photo enforcement systems, electronic white boards, thermal imagers, lasers, radios, less-lethal technology, language translators, crime mapping, diagramming systems, global positioning system, automatic license plate recognition, wrist phones, video sunglasses, CCTV, camera pens, speed enforcement camera, wireless button camera, infra red cameras, amongst others.

Taking the CCTV for instance; the Metropolitan Police in London, according to Cheng (2013) in Quarshie (2014) uses one of the largest CCTV schemes for monitoring activities in and out of London. Also, the Western Australia Police using GPS maps and other analytic tools capable of mapping crime endemic areas have reduced crime menace significantly as well as identifying areas of social disadvantage (Quarshie, 2014). In addition, Quarshie notes that in the United States of America**,** police departments now utilise GPS technology for crime-prevention. Other nations the world over use closed circuit cameras for surveillance purposes in monitoring events, citizens' activities as well as public assets and installations (Adegoke, Phillips and Keshinro, 2015). In addition, Adegoke *et al.,* noted the importance of the CCTV in monitoring

incidences. For instance, a shopping mall in Kenya's Westgate was attacked by terrorists on 21 September, 2013. Around 67 fatalities were documented through Closed Circuit Television footages deployed by security forces to observe the terrorists. Also, with the use of CCTV, perpetrators of Boston's Marathon bomb attack which occurred on Boylston Street, USA on 15 April, 2013 were tracked down. In addition, CCTV footages were used to track down the perpetrators of the Charlie Hebdo attack in Paris, France on January 15, 2015, where 11 people were killed" (Adegoke, *et al.*, 2015).

A discussion about access to ICT according to Matsepe-Casaburri (2004) in Czerniewicz and Cheryl (2005) must be clear about what its envisaged purpose is or might be. "Access becomes essential because exclusion will mean severely limiting life chances" (Burbules & Callister, 2000 in Czerniewicz and Cheryl, 2005). Warschauer (2003c) in Czerniewicz and Cheryl (2005), argue that the very resources that people need access to are the same resources to which they will be able to contribute. Thus, access to resources and use of resources are strongly inter-related.

In the developed nations, there have been contentions about how ICT accessibility and utilisation would determine effective security management. Flanagin (2002) submits that the United States police have long adopted information and communication technology in the conduct of their work. Manning (1992) in Flanagin submits that since early 1877, police organisations have used the telegraph to remove the barrier of distance to enhance their organisation's communication processes. Brynjolfsson (1993), O'Maloney and Barley (1999), Sproull and Kiesler (1991) in Flanagin (2002) opine that mobile data computers, computer-assisted dispatching, terminals, and information-based repositories are some of the equipment used to enhance law enforcement efficiency, as well as organisational and personnel safety. Though, they argue that favourable effects might not be guaranteed, modern organisations are enjoying significant benefits through modern ICT. As a matter of fact, many are undergoing fundamental transformations in form and function. Flanagin (2002) further added that it is doubtful if police personnel derive the same amount of benefit from ICT as experienced by staff of other organisations. The reasons adduced for these include: law enforcement nature, law enforcement agencies' structures, as well as information processing effectiveness demands which often bring about great difficulties, that reduces the ability of law enforcement agents to completely benefit from contemporary use of ICT.

Information and Communication Technology accessibility is a term used to describe the extent ICT is accessible to all and sundry in a society. It is the use of ICT by all intended users taking into account their differing capabilities, skill, location, and their needs (EU, 2014). Accessibility is viewed as a situation where all derivable benefits and usage of the technology is achieved by users. Accessibility does not translate to usability. This is because usability according to Czerniewicz and Cheryl (2005) can be described as "the extent to which a product such as a service or otherwise can be used by specified users to achieve specific goals with effectiveness, efficiency and satisfaction in a specified context of use". Accessibility is about making ICT accessible to all people irrespective of age, gender, and other related factors (Czerniewicz and Cheryl, 2005).

Access to ICT is significant in the world principally because of the likely opportunities it can provide. Access to ICT encourages more opportunities as well as provides information to people, which can be used in decision making. This is corroborated by Alampay (2003) who adopted "Capabilities Approach" of Amartya Sen's to the access and use of ICT. He further submitted that usage of any good or innovation (in this case Information and Communication Technologies) is determined by access. Other significant factors which can also affect usage, application of a technology and value placed on a technology include choice, individual differences and capabilities.

Mansell, Edward and Uta (1998) posit that experience, skills and knowledge are vital components in the growth of information societies. These components are obviously capabilities that are vital in today's information society. Hence, Alampay (2003) buttresses the fact that it is not such a leap to argue that Capability Approach can be applied to ICT. Hence, age, income, gender, motivation, profession, location, skills/education, and perceived importance of ICT were identified as determinants of ICT access and usage.

The utilisation of ICT tools, according to Leavitt and Pondy in Fairouz and Rifat (2009) is germane on the organisation as well as on people, culture, structure, process and tasks. Leng Ang-Chooi, Davis and Finlay (2000), Pinsonneault and Rivard (1998) in Fairouz and Rifat (2009) suggest that ICT represents a veritable means of sharing, converting, accumulating and establishing knowledge management systems that determines organizational work ethics and personnel management. In addition, ICT is transforming the work place and influencing decision making in organisations. Leng *et al* (2000), Brynjolfsson (1993) in Fairouz and Rifat

(2009) suggested that application of ICT influences the manner organisations are structured, their processes, procedures and their entire communication strategy. However, the study of Fairouz and Rifat (2009) on the effective utilisation of ICT and its impact on competitive advantage indicated how utilisation of ICT is influenced by the environment (internal and external) and the resultant organisational effectiveness.

In view of the foregoing, ICT utilisation is an indication of the extent to which officers and men of security agencies such as the Nigeria Security and Civil Defence Corps deploy ICT in executing their daily operations. The effectiveness and efficiency to which security agents can access and use ICT gadgets and tools are determined by the application of perspective and technical skills in its application in their day to day affairs to safeguard the populace. It should be noted that the presence and possession of ICT tools do not mean utilisation. Security agencies personnel should be able to access and use these tools for their daily operations to effectively manage the security situation in Nigeria. In other words, an officer does not need to wait for an order from a superior officer before using any of these tools in operation. Once information is obtained about a crime, for instance, in any particular vicinity, after the order has been given by a superior officer for proper investigation of the case, it is the duty of the officer in charge to utilise the necessary ICT tools that would be needed to properly investigate the crime or crime scene. What this implies is that officers and men of security agencies, must have easy access to ICT tools and be able to utilise same to collect, analyse and report as well as deploy data which are relevant to tragic events in order to detect, prevent, and manage responses to such attacks for optimum result.

Information and communication technology is crucial in security management in the contemporary world of today. Beniger (1996), Fulk and Desanctis (1995) in Flanagin (2002) aver that technological advances have tremendously improved the competence of modern organisations. The use of ICT as compared to more traditional means can carry more information faster, at a lower cost to more people, in addition to increased data communality, processing and powerful recombinant capabilities. Flanagin (2002) avers that the use of ICT has resulted in substantial changes in intraorganisational relations, interorganisational relationships and contemporary organisational forms. Huber (1990) in Flanagin (2002) contends that ICT to a great extent has contributed to extending the number of individuals who partake in organisational

decision making, as well as increasing organisational horizontal and vertical communication, and diminishing temporal and physical interaction constraints.

Furthermore, Pinsonneault and Kraemer (1990) in Flanagin (2002) reported that advancements in technology have affected group processes in organisations by increasing consensus reaching, increasing satisfaction of members with group process decisions, increasing confidence in group decisions and decreasing decision time. Within organisations, Flanagin (2002) posits that electronic technologies have the capacity to determine the possibility and the dynamics of interpersonal relationships. By virtue of increased connectivity and communality among individuals, electronic technologies alter organisational dynamics that were, a generation ago, based on proximate, hierarchical relations where both the flow and control of information were relatively predictable (Fulk, Flanagin, Kalman, Monge & Ryan, 1996). In view of new technologies, Flanagin (2002) avers that communication with others is faster and easier, mass information is possible and more accessible to members of an organisation. On interorganisational relationships, connectivity among organisations has become increasingly important as economic, technological and social factors enable and encourage organisational linkages. Network relations aid organisations in gaining knowledge and learning (Powell, Koput and Smith-Doerr, 1996 in Flanagin, 2002); and provide a competitive advantage (Jarillo, 1988 in Flanagin, 2002).

From the above, it is evident that ICTs are invaluable in organisational effectiveness. Security is fundamental need of all regardless of an individual's position or status in society. Therefore, to curtail crime to the barest minimum, the need for security agencies to have easy access to ICT tools and be able to utilise same to detect, prevent, and manage responses to such attacks for optimum result cannot be overemphasised. It is against this background that this study examined ICT accessibility and utilisation by the Nigeria Security and Civil Defence Corps in South-western Nigeria, Zone 'F' Command.

1.2 Statement of the problem

Information is a vital tool in security agencies' decision making to fight crimes in the society through appropriate information transmission mechanisms. Improved communication can engender effective security management as well as law and order by security agencies especially

when ICT is adopted. Scholars have averred that the efficiency and effectiveness of policing witnessed in many developed countries can be adduced to the deployment of ICT.

In developing countries, it has been noted that there is a considerable lack of security awareness among citizens. Nigeria, which is a developing country, lacks adequate ICT compared to developed countries and this has affected the security architecture. In other words, security agencies lack adequate access to, and deployment of ICT in security operations.

Accessibility and utilisation of ICT have been noted as important factors in ensuring security management. Despite the efforts of security agencies to forestall criminality in Nigeria, the state of insecurity is still very high. This has made the security agencies to adopt several strategies to stem the tide of insecurity. Because of the new dimension which criminals have taken with the use of highly sophisticated weapons and gadgets, it has become pertinent to deploy contemporary ICT to fight criminality in Nigeria. Therefore, the context of the fight against criminality appears to determine the contents of deployment, and mode of use of ICT to fight criminality in the nation. This is why it has become necessary to determine how, and the extent to which accessibility and utilisation of ICT could determine security management by the Nigeria Security and Civil Defence Corps.

The Nigeria Security and Civil Defence Corps is one of the security agencies mandated to protect lives and property of the citizenry. However, despite the effort of the agency to curb criminality to the barest minimum, the state of insecurity in Nigeria is perhaps, alarming. It could be as a result of the Corps not having access to, and utilising state-of-the-art ICT to control crime such as video recording gadgets – spy camera pen, digital watch, walkie talkie, eye glass spy camera, Closed Circuit Television, tracking devices such as the Global Positioning System (GPS), among others. To control crime, weapons alone cannot be deployed during operations. Surveillance technology plays an important role in security management.

There is limited study focusing on the extent of ICT deployment by the Nigeria Security and Civil Defence Corps, though several studies have been conducted using the Nigeria Police Force as a case study. There seems to be no specific study on accessibility and utilisation of ICT by the NSCDC in South-western Nigeria. This study is therefore designed to bridge the gap in knowledge about accessibility and utilisation of ICT by the Nigeria Security and Civil Defence Corps in South-western Nigeria.

1.3 Objectives of the study

The main objective of this study is to investigate the extent to which accessibility and utilisation of Information and Communication Technology (ICT) could enhance security management by the Nigeria Security and Civil Defence Corps, Zone 'F' Command, in South-west, Nigeria. The specific objectives of the study are to:

i. ascertain the extent to which ICT is accessible to officers and men of the NSCDC Zone 'F' Command, in South-west, Nigeria;
ii. examine the extent of utilisation of ICT by officers and men of the NSCDC, Zone 'F' Command, in South-west, Nigeria;
iii. ascertain the ICT deployed for security operations by the NSCDC, Zone 'F' Command, in South-west, Nigeria;
iv. determine the extent to which NSCDC Zone 'F' Command, in South-west, Nigeria ensures effective security management through the deployment of ICT;
v. examine constraints to effective security management through the deployment of ICT by the NSCDC Zone 'F' Command, in South-west, Nigeria;
vi. ascertain the relative contribution of ICT accessibility and utilisation as determinants of security management by the NSCDC, Zone 'F' Command, in South-west, Nigeria;
vii. examine the joint contribution of ICT accessibility and utilisation as determinants of security management by the NSCDC, Zone 'F' Command, in South-west, Nigeria;
viii. examine the relationship between ICT accessibility and security management by the NSCDC, Zone 'F' Command, in South-west, Nigeria; and
ix. determine the relationship between ICT utilisation and security management by the NSCDC, Zone 'F' Command, in South-west, Nigeria.

1.9 Research questions

To achieve the objectives of the study, the following research questions were raised:

i. What is the level of ICT accessibility by officers and men of the NSCDC Zone 'F' Command, in South-west, Nigeria?
ii. What is the level of ICT utilisation by officers and men of the NSCDC Zone 'F' Command, in South-west, Nigeria?

iii. What ICT are deployed for security operations by the NSCDC Zone 'F' Command, in South-west, Nigeria?
iv. To what extent does the Nigeria Security and Civil Defence Corps Zone 'F' Command, in South-west, Nigeria ensure effective security management through the deployment of ICT?
v. What are the constraints to effective security management through the deployment of ICT by the NSCDC, Zone 'F' Command, in South-west, Nigeria?
vi. What is the relative contribution of ICT accessibility and utilisation as determinants of security management by the NSCDC, Zone 'F' Command, in South-west, Nigeria?
vii. What is the joint contribution of ICT accessibility and utilisation as determinants of security management by the NSCDC, Zone 'F' Command, in South-west, Nigeria?
viii. What is the relationship between ICT accessibility and security management by the NSCDC, Zone 'F' Command, in South-west, Nigeria?
ix. What is the relationship between ICT utilisation and security management by the NSCDC, Zone 'F' Command, in South-west, Nigeria?

1.5 Hypotheses

The following hypotheses were tested in the study at the 0.05 level of significance:

H_1: There is no significant relationship between ICT accessibility and security management by the Nigeria Security and Civil Defence Corps Zone 'F' Command, in South-west, Nigeria.

H_2: There is no significant relationship between ICT utilisation and security management by the Nigeria Security and Civil Defence Corps Zone 'F' Command, in South-west, Nigeria.

H_3: Accessibility and utilisation of ICT when taken together, will not significantly determine security management by the Nigeria Security and Civil Defence Corps Zone 'F' Command, in South-west, Nigeria.

1.6 Scope of the study

Emphasis of the study is on accessibility and utilisation of information and communication technology by the Nigeria Security and Civil Defence Corps (NSCDC) in South-west Nigeria. Geographically, the study was limited to five (5) Commands – Oyo, Ogun, Ondo, Osun and Ekiti – (Zone 'F') of the Corps in South-West, Nigeria. Officers and men in the Departments of Administration, Operations, and Intelligence/Investigations were studied, while those in the Technical Department were excluded because they are not into core security duties. The Technical Department is an assemblage of artisans with different technical skills such as tailoring, bricklaying, mechanics, carpentry and so on. The population is made up of personnel of Zone 'F' Command of the NSCDC. The content scope of ICT accessibility includes: proximity and ease of location while ICT utilisation includes extent and frequency of ICT use. Security management content scope includes: resolution of cases, crime prevention, crime investigation, surveillance, information and intelligence gathering, as well as deployment of personnel to beats.

1.7 Significance of the study

Information and communication technology is a form of new technology in Africa that plays a significant role in development, security inclusive. ICT is paramount in bringing about development and change in the present Digital Age. Since security management often involves decision making either on the field or in the deployment of personnel for operations, there is a continuous need for ICT knowledge and accessibility of same to enhance efficiency.

The management of security situation of Nigeria depicts a nation in dire need of innovative ways and adaptive strategies of tackling crimes and criminality. Subversive acts ranging from the internet fraud, economic sabotage and frequent kidnappings in the oil rich Niger-Delta to the rising insurgency in the North-eastern region of the country point to this fact. The criticisms of traditional 'reactive' criminal justice responses by the statutory security outfits to crime has continued to depict a need for a more adaptive and effective approach. This desire gives rise to prominence of a new adaptive and preventative safety offered by ICT.

Hence, the outcome of this study will assist the Nigerian Government and NSCDC management authorities to formulate policies and guidelines that will enhance effective security management in the Nigerian security sector, through the provision of adequate ICT gadgets/tools to enhance accessibility, as well as encourage effective deployment of same. The study will

assist the NSCDC and other security agencies on how to improve security management in Nigeria through the deployment of high quality technological tools that comply with global law enforcement standards to reduce crime to the barest minimum in the country.

The study will provide baseline data on the factors that affect effective security management by the NSCDC in Nigeria. The findings would be useful in identifying the level of accessibility and utilisation of ICT by NSCDC in fighting crimes in Nigeria, as well as ensuring effective security management in the NSCDC and other security agencies through the deployment of ICT. In addition, it will further the process of the development of ICT skills in the NSCDC and related security agencies, and will add to the body of knowledge available on the use of ICT to fight crime in Nigeria.

Information in security agencies is restricted; as a result, librarians will need to assist security agencies in developing database for storage and retrieval of information in a format that will prevent espionage and loss.

1.8 Operational definition of terms

The terms that are crucial to the study are defined below:

Information and Communication Technology (ICT): This is regarded as varied set of electronic tools deployed to facilitate communication, as well as to create, manage, disseminate, and store, information. It consists of communication gadgets or software such as cellular phones, radio, computer and network hardware and software, satellite systems, among others.

Information and Communication Technology (ICT) Accessibility: This is the ability of officers and men of NSCDC to have the right to use ICT tools employed in security operations coupled with perspective and technical skills in its application in their day to day affairs to safeguard the populace. It also includes the ease of locating and retrieving information for security operations.

Information and Communication Technology (ICT) Utilisation: This is the extent and rate by which officers and men of NSCDC deploy ICT gadgets and tools in executing their daily operations. Thus, it is the application and implementation of ICT by NSCDC staff for effective service delivery.

Security management: This entails steps taken by security agencies in safeguarding lives and property of the civil populace. It includes maintaining public order, enforcing the law, information and intelligence gathering, as well as, detecting, investigating, and preventing crime.

CHAPTER TWO
LITERATURE REVIEW

The chapter is focused on reviewing related literature crucial to the research. Hence, the following topics are treated:

2.1 Information and communication technology accessibility and security management
2.2 Information and communication technology utilisation and security management
2.3 Perspective on security management
2.4 Emergence of information and communication technology in security management
2.5 Information and communication technology and national security in developed and developing countries
2.6 Intelligence and operational strategies in security management
2.7 The importance of information and communication technology in security management
2.8 Barriers to information and communication technology accessibility and utilisation in security management
2.9 Theoretical Framework
2.10 Conceptual Model
2.11 Appraisal of the literature reviewed

2.1 Information and communication technology accessibility and security management

Information and communication technology (ICT) is the application of computer-based technology and the Internet to make information and communication services available to a wide range of users. In other words, it comprises a hardware and software that enables a society to create, collect, consolidate, and communicate information in a multimedia format and for a variety of purposes (Library and Information Science Network, 2014). It is also defined as the study, design, development, application, implementation, support or the management of computer-based information systems (Chandler and Munday, 2012). It covers all forms of computer and communications equipment and software used to create, design, store, transmit, interpret and manipulate information in its various formats. Singh (2013) posits that ICT plays a crucial role in the effective management of information and allows delivery of processed and qualitative information to end users.

Security entails the state of being free from danger or threat. It means safety and measures taken to be safe or protected (Vocabulary.com). The *Cambridge Dictionary* (2020) defined security as "protection of a person, building, organisation, or country against threats such as crime or attacks by foreign countries". Management is a process of planning, decision making, organising, leading, motivation, and controlling the human resources, financial, physical and information resources of an organisation to reach its goals in an efficient and effective manner (iEduNote, 2017). Security management is defined as the identification of an organisation's assets, which comprise people, buildings, machines, systems, and information assets, followed by the development, documentation, and implementation of policies and procedures for protecting these assets (Dell.com, 2012).

Security management is basically concerned with the management of inherent issues that fuel and sustain criminalities in the society (Aremu and Ahmed, 2011). Security management according to the researcher is the act of planning organising, controlling, and making informed decisions in the course of safeguarding the civil populace. It entails steps taken by security agencies in safeguarding lives and property of the civil populace, which includes maintaining public order, enforcing the law, information and intelligence gathering, as well as detecting, investigating, and preventing crime.

Information and communication technology accessibility is the use of ICT by all intended users taking into account their differing capabilities, skill, location, and their needs (EU, 2014). Access to information and communication technology is significant in the world today primarily due to the potential benefits it can provide. It should be noted that having access to information and communication technology helps to expand choices made by people by providing more information, knowledge and opportunities. Access to ICT is the ability of officers and men of security agencies to have the right to use ICT gadgets and tools coupled with perspective and technical skills in its application in their day to day affairs to safeguard the populace.

Security agencies perform a wide range of functions; hence, they need to have access to modern ICT tools and gadgets which would enhance their operations. The police according to Were, Gakure, Kiraithe and Waititu (2013) performs broad duties including the following; crime investigation, public order maintenance, traffic direction, patrolling to promote peace, security provision to state officials, among others.

Were, Gakure, Kiraithe and Waititu (2013) in their study to determine how availability and utilisation of resources impact performance of Police Force in Kenya identified some challenges affecting performance in the country's Police Force especially with respect to human capital management. According to Were, *et al*., (2013), due to the fact that the reform agenda of the police is in its early years, there is need for quick changes. They identified some challenges bedevelling the police force to include inadequate recruitment policy, poor training guidelines and facilities as well as deficient Human Resource Information Systems (HRIS). In addition to these challenges, they further opined that officers were not only poorly paid, but poorly motivated, which resulted into increased absenteeism from duties. And in terms of infrastructure, the offices and communication networks were inadequate, as well as weak management information system, coupled with insufficient housing and transport allowances.

Furthermore Were *et al*., (2013) submitted that the police service is required to maintain peace, provide security, and enforce laws in any nation. However, the security system in Kenya for about twenty years degenerated to the extent that the government found it difficult to safeguard lives and property of the citizens. Consequently, it manifested in a high rate of corruption among officers, poor and outdated communication tools, poor training in intelligence/investigations, inadequate access to state-of-the-art forensic amenities, insufficient computer facilities and modern ICT, among others, bringing about ineffective service delivery.

In addition, six major categories of resources were suggested by Were *et al*., to include: financial resources, physical resources, human resources, technological resources, reputation, and organisational resources. According to them, "It was found that technology-context factors including integration, user friendliness, accessibility, efficiency, and vendor support can positively impact organisational adoption of HRIS. These technology-context factors can strengthen the business case for management to become committed to support HRIS adoption".

Were *et al*., however examined the availability of modern technology, skills level for use of information, communication and technology (ICT), adequacy of funds needed for various daily operations, resource management, availability of tangible resources like phones, vehicles among others, financial support, housing facilities and recreation opportunities, using stratified sampling as well as simple random sampling techniques, 150 officers representing 10% of the entire population of regular officers in Nairobi County, Kenya were selected. The study targeted 1,500 regular police officers in Nairobi County. Findings showed that on the constructs of

resources, officers are most dissatisfied with resource management, followed by adequacy of funds, housing facilities are the third worst challenge, this is followed by available tangible resources, availability of modern technology and recreational opportunities come at 5th position in terms of dissatisfaction, financial support comes next while skills level for use of ICT has the lowest level of dissatisfaction.

They concluded that resources in the form of ICT have led to enhanced policing in other countries. In Nairobi for instance, they submitted that ICT is not utilised apart from the Police head office. Other assets such as phones and vehicles were found to be few. Resources however determine how quickly and proficiently officers will react when there are distress calls (Were *et al*., 2013). From Were *et al'*s study, it is evident that the Nairobi Police Force had inadequate access to ICT tools and gadgets among others, which would have enhanced their security operations.

Kumar (2012) in his study on ICT Role in Indian Police notes that ICT has not only changed the way the public interact with each other, but has also changed the way the public interacts with private establishments and government organisations. When ICT is deployed in policing, it enhances the collection, storage and quick dissemination of information. In addition, it enhances safety of the public and reduces crime rate, it improves police effectiveness and the capability to process and store large volumes of data; ICT enhances police intelligence/investigative capabilities, and make readily available access to crime records and other kinds of relevant data in policing (Kumar, 2012).

According to Kumar, policing is seen as especially difficult and sensitive which requires integrating numerous information sources within short intervals. ICT when deployed results in improved and timely service delivery. Criminals, according to him, are ahead of the police in using most up-to-date technology in perpetrating heinous crimes. He brought to the fore the challenges confronting the Indian Police Force in maintaining peace. He underscored the challenges as ranging from poor welfare system, career progression challenges to inappropriate policing techniques, among others. In defiance to recommendations made by several committees and commissions, the police force continues to operate without integrated information systems; failure to share information between sister agencies across state and national divides as well as poor data entry and due to locations' difference and technical know-how.

From Kumar's assertion, it is clear that the Indian Police lack adequate access to ICT in their daily operations. However, Alampay (2003) adopted "Capabilities Approach" (CA) of Amartya Sen's to the access and use of ICT. He submitted that usage of any good or innovation (in this case, Information and Communication Technology) is determined by access. Other significant factors which can also affect usage, application of a technology and value placed on a technology include choice, individual differences and capabilities.

Mansell, Edward and Uta (1998) posit that experience, skills and knowledge are critical components in the growth of information societies. These components are obviously capabilities that are needed to function effectively in today's information society. Hence, Alampay (2003) buttresses the fact that it is not such a leap to argue that CA can be applied to ICT. Hence, age, income, gender, motivation, profession, location, skills/education, and perceived importance of ICT were identified as determinants of ICT access and usage. This study however, is examining ICT accessibility, a variable of the study, as determinants of security management in the Nigeria Security and Civil Defence Corps.

2.2 Information and communication technology utilisation and security management

In the context of this study, ICT utilisation is the extent to which officers and men of security agencies deploy ICT assets in executing their daily operations. ICT utilisation in security management refers to the effectiveness and efficiency to which security agents can use ICT gadgets and tools coupled with perspective and technical skills in its application in their day to day affairs to safeguard the populace. It should be noted that the presence of ICT tools does not mean utilisation. The officers and men of the security agencies should be able to access and use these tools with or without the permission of the authority for their daily operations to effectively manage the security situation of the Nigerian State. In other words, an officer does not need to wait for an order from a superior officer before using any of these tools in operation. Once information is obtained about a crime, for instance, in any vicinity, after the order has been given by a superior officer for proper investigation of the case, it is the duty of the officer in charge to utilise the necessary ICT tools that would be needed to properly investigate the crime or crime scene. What this implies is that officers and men of security agencies must be able to utilise ICT tools and gadgets to collect, access, analyse and report data which are relevant to tragic events in order to detect, prevent, and manage responses to such attacks for optimum result.

The use of ICT has become common in human activities the world over. As a result, there is a strong belief that the use of ICT is invaluable in everyday activity. Without an iota of doubt, it is bound to offer remarkable solutions to issues that border on insecurity (Tanui and Barmao, 2016). The outlaws are daily evolving sophisticated methods in committing crimes; unfortunately security agencies are yet to take advantage of the use of ICT such as tracking technology, CCTV technology, mobile phones and social media, to curb crime to the barest minimum.

Taniu and Barmao (2016) studied the usage of ICT in the detection and prevention of crime in Kenya, with respondents drawn from police officers, bank employees, civilians and court officials. Respondents were requested to state how inadequate ICT knowledge among judicial law officers and security personnel affect detection and prevention of crime. The study indicated that 52.2% and 30% of the respondents agreed and strongly agreed respectively with the statement. The study recommended the use of ICT such as Closed Circuit Television technology, GPS tracking devices, mobile phones and the social media in investigation and prosecution of cases.

According to Ibikunle and Adefihan (2014), technologies, such as biometrics, video cameras, telecommunication systems, Internet, GPS tracking, among others are deployed for detecting, investigating, prosecuting and preventing crime in policing. As experienced during the 20th Century, technology alters the way police work is done, its management and how police deliver services. Emerging policing models of contemporary time require precise and instantaneous information for strategic communication and planning, deployment processes, analysis, accountability, threat prevention and detection, among others.

In a bid to establish how ICT impact law enforcement, Adekunle and Adefihan (2014) carried out a study on how effective ICT is in policing in the country. Hundreds of police officers were sampled in the Police Headquarters, Ikeja, Lagos State. The survey found out that 32.0% (192) respondents claimed that the police uses ICT to collect evidence for trial, 33.3% (200) respondents claimed that the police uses ICT to curb crime, 15.80% (95) respondents claimed that ICT is used for internal affairs investigations, 6.5% (39) respondents claimed that ICT improves public relations, 3.2% (19) respondents claimed that ICT protects officers to maintain integrity and transparency while on duty, and the remaining 9.2% (55) claimed that the reason why the police uses ICT is given by others' view. From their study, 53.3% (320) respondents

agreed that performance of security personnel is enhanced by ICT in Nigeria while 46.7% (280) claimed otherwise.

It is evident from the above study that there exists relationship between ICT and police efficiency. They concluded that without advance technologies, crime will not be curbed. The success or failure of policing is determined by how ICT is deployed in its daily operational activities. The role of ICT in policing is two-fold: new technologies either supports police work or provides loopholes for criminals to pull off crime (COMPOSITE Project, 2011). COMPOSITE project carried out a study on "ICT Trends in European Policing". The study offered results from the analyses of documents and survey of planned ICT projects of police institutions in 10 European countries such as the United Kingdom, Italy, Belgium, Germany, the Czech Republic, Macedonia, France, Spain, the Netherlands and Romania. The result in many of the countries showed mobile computing adoption, intelligence data systems integration, video surveillance technologies utilisation in the application of digital biometrics, the rising challenge of social media applications, and the crosscutting issue of user acceptance.

It is evident from their study that ICT tools are utilised for different purposes. On the integration of intelligence data systems, COMPOSITE Project avers that linking systems increase efficiency and minimises replicating multiple data entry. This goes a long way in fostering organisational relationship across boundaries created by geographical locations. In Czech Republic, ICT was used to make better use of the central registry of drivers by the municipal police. While in Germany the federal police embarked on a project to digitise and enhance criminal databases of pre- and post- actions of an offender to understand the pattern of behaviours which could assist in reaching conclusions in future crime committed by the offender (COMPOSITE Project, 2011).

On the adoption of mobile computing, mobile electronic devices have found their way in police cars, such that the personnel gain unfettered access to databases, hence services can be rendered on field to the public thereby reducing operational costs. Increasingly, ICT continues to support police work in real time. For instance, France Gendarmerie Nationale introduced buses used as a laboratory as well as command post. The national crime investigation unit finds it useful during complex crime investigations as it has a satellite telephone link, an antenna switch with a capacity of about 100 telephone lines, and an installed radio technology, while also boasting of a modern well equipped forensic laboratory. In summary, the technology offers all

that is required to scrutinize evidences directly on crime scenes without having to return to the police headquarters (COMPOSITE Project, 2011).

These new tools ensure precision and safer operations as well as enhance inspection procedures thereby earning the police department public admiration. In the United Kingdom, smart phones usage ensure officers capture pictures and cross reference with database in their main office in cases involving missing persons and fugitives. This is possible as the technology allow texts and photos to be uploaded as data while also receiving up-to-date security intelligence report on the move through their phones (COMPOSITE Project, 2011).

Another viable ICT gadget is video technology for surveillance which is capable of digitising biometrics. COMPOSITE Project (2011) submits that police forces have aligned with using video surveillance systems in both mobile and stationary settings to support investigations. France Police Nationale has adopted the use of infrared-based video analysis system to battle illegal migrant challenges experienced around the Mayotte Island. Due to the wooden materials used for the boats, radars and binoculars which are the traditional equipment used are rendered useless especially at night (COMPOSITE Project, 2011).

From the above analysis on the utilisation of ICT in policing, it is clear that ICT utilisation is crucial in security management According to Greer (2010) in Ikhazuagbe and Kasimu (2012:6-7):

> Today, in addition to anticrime advertising, case processing using media technology, and police surveillance systems based on the older technologies of audio and videotaping, there is an abundance of newer media technologies capable of both facilitating and constraining communication, interaction and realization of fluid identities....
> Moreover, the digitized, computerized, and networked information and communication technologies exemplified by the Internet have created virtual worlds with their own changing norms, value and codes of practice. Altering the ways in which people engage in time and space....
> However, the idea of using surveillance for the purpose of information gathering and security management received a boost with the advent of Internet computer.

Surette (2007) in Ikhazuagbe and Kasimu (2012), however, contends that the positive changes experienced in technological innovations have led to paradigm shift in vulnerabilities and risks for crime and victimisation. In the same vein, technological innovations have enhanced

surveillance, crime prevention and management. Audio visual gadgets such as cameras have enhanced capturing and processing of information thereby changing the way individuals and institutions view and discuss their immediate environment with care and caution. Ikhazuagbe and Kasimu (2012) underscored the fundamentality of ICT usage in surveillance as it remains essential in a secured society. They noted that at the different levels of government including remote areas, security management is of paramount importance, nationally and internationally.

According to scholars, the contribution of ICT in security management cannot be overemphasised. However, at this critical stage in Nigeria where the issue of insecurity is rampant, the deployment of ICT in security operations is essential. They assert that if surveillance and ICT are properly employed; there would be a solution to menace of insurgency (*Boko Haram)* and incessant attacks in some parts of the country. This can be complemented by using effective computer connectivity and well trained personnel.

They proposed that the Governments both at the federal and state level should mount CCTV at strategic places in addition with adequate training of staff for deployment when necessary. In addition, they stated that all and sundry should see themselves as security agents working with the government to safeguard the populace.

In Indian Police, Kumar (2012) identified the utilisation of ICT in the following areas: electronic identification, electronic transportation, online verification and fingerprints reader, radio frequency identification, closed circuit television, human resource management, police-public interface, real-time information access, intelligent sensors and centralized information storehouse.

Electronic identification according to Kumar (2012) provides comprehensive information about a person such as the Bank account number, Telephone/mobile number, Permanent Account Number (PAN), Digital signature of a person, Passport number, and Driving license number. Through ICT, it will be very easy to identify a person. Security agencies can use different means to track a suspect, prevent and manage crime, as well as maintain law and order.

Biometric technologies and fingerprint reader also help in improving the operations of security operatives. Biometric technology has proven useful in verification and recognition of individuals among multitudes. Biometric helps in revealing precise biological information of a person of interest so as to make decisions quickly especially when it borders on security issues (Kumar, 2012).

According to Kumar (2012), CCTV systems can be used in any environment that is unsuitable for human intelligence. CCTV is suitable for monitoring diverse part of a system or process from the control room when placed at strategic locations. Security operatives can collect large volumes of video for incident analysis. Such intelligence can then be shared with security operatives' mobile gadgets to control the situation and arrest the suspect.

From the literature review, it can be established that ICT is crucial in security management. Hence, this study is examining ICT utilisation, the second variable of study, as determinants of security management by the Nigeria Security and Civil Defence Corps.

2.3 Perspective on security management

Security management entails steps taken by security agencies in safeguarding lives and property of the civil populace, which includes maintaining public order, enforcing the law, information and intelligence gathering, as well as, detecting, investigating, and preventing crime. Security entails the state of being free from danger or threat. It means safety and measures taken to be safe or protected (Vocabulary.com). The *Cambridge Dictionary* (2020) defined security as "protection of a person, building, organisation, or country against threats such as crime or attacks by foreign countries". Management is a process of planning, decision making, organising, leading, motivation, and controlling the human resources, financial, physical and information resources of an organisation to reach its goals in an efficient and effective manner (iEduNote, 2017). Security management is basically concerned with the management of inherent issues that fuel and sustain criminalities in the society (Aremu and Ahmed, 2011). Security management according to the researcher is the act of planning organising, controlling, and making informed decisions in the course of safeguarding the civil populace. It is also defined as the identification of an organisation's assets, which comprise people, buildings, machines, systems, and information assets, followed by the development, documentation, and implementation of policies and procedures for protecting these assets (Dell.com, 2012).

According to Olujimi (2005), criminality is considered as part of human nature and society. No society is considered totally crime-free. As a result, the role of security agencies cannot be overemphasised in safeguarding the populace. In maintenance of law and order, in promoting harmony and in securing lives and properties of the populace, a strong and effective security force is needed. According to Odekunle (2005), ever since the mid-seventies, Nigeria

has been bedevilled with crime-related problems. This is otherwise called “crime-problem” in criminological literature. In other words, when crime occurrence and gravity moves from the acceptable level to the pathological, it becomes what is referred to as a “social problem”.

Crime poses a danger to the security of a nation in terms of the economic, political and social activities and is a key cause of underdevelopment as it discourages investments both locally and internationally. Also, it decreases the quality of living as well as destroys either human or social capital. In addition, crime damages association among the populace and the nation state, thus undermining democracy, rule of law and increased development (Adebayo, 2013).

However, Adebayo (2013) maintains that globally, every society has its atypical challenges, including Nigeria. According to him, Nigeria as a developing country has its own social, political, economic and cultural problems which have an effect on the general population. According to him, the increased crime rate and the inability of security agencies to prevent and control crime is a problem Nigeria faces. He is of the view that the security agencies are poorly equipped not to talk of being motivated. This is corroborated by Danbazzau in Adebayo (2013: 73) that in the country, the police lack contemporary ICT, scientific and communication tools to effectively fight crime and criminalities. These tools are crucial in investigation and intelligence gathering. In addition, operational motor vehicles are inadequate, as only about five percent (5%) of the police commands in the country have only one or no lorry, and other operational vehicles. According to Danbazzau in Adebayo (2013), below five percent (5%) of policemen in the country have walkie-talkie to communicate during patrols. Also, below twenty percent (20%) of the police stations in the country have telephones to answer distress calls from members of the public in cases of emergencies.

From the above, one can infer that inadequate equipment can be a barrier to effective security management. As earlier stated, crime investigation, crime prevention, intelligence gathering and surveillance are germane in security management. O’Hara and O’Hara (1994) described criminal investigation as an applied science involving the study of facts in identifying, locating and proving the guilt of the accused individual. A complete criminal investigation according to them consists of probing, interrogating, collecting and preserving evidence, as well as various investigation processes.

Surveillance technology plays an important role in security management. Surveillance includes observing people, places, and vehicles secretly in order to investigate crime. Surveillance is normally carried out by security operatives and private detectives using physical observation or monitoring of conversations using ICT. It can also include observation from a distance by deploying ICT such as CCTV cameras or intercepting phone calls which are electronically transmitted.

Lyon (2003) considered surveillance as being central to institutional mechanisms in contemporary time. According to him, surveillance involves collecting and processing of data either identifiable or unidentifiable, mainly to influence or manage any data gathered. In addition, House of Lords (2009) posit that surveillance can be undertaken openly or secretly, as major or routine activity, by both governmental institutions and private organisations.

In the view of Rosamunde and De Hert (2011-3), surveillance technologies are deployed in policing. They believe that surveillance technology is essential in policing practices. They are of the opinion that modern technologies used for surveillance including databases and predictive software as well as CCTV ensures efficiency in policing and help in collecting evidence. In addition, Norris and McCahill (2003) aver that technologies help the police to fight crime and provide better services to the community, thereby ensuring better performance in policing. In other words, effective and efficient policing is essential in security management. Furthermore, Norris and Armstrong (1999) aver that the skill to effortlessly and competently store, sort, classify, retrieve, and match information in digital systems is important in policing.

Criminal investigation is also important in security management. According to O'Hara and O'Hara (1994), criminal investigation involves the study of facts in identifying, locating and proving that an accused person is guilty. A complete criminal investigation encompasses the following: searching, interviewing, collecting and preserving evidence, as well as using varied investigation methods. The objectives of criminal investigations include crime detection; apprehension of suspects; recording and compiling evidence of crimes; recovering stolen property; and proper arrangement of case files.

In security management, intelligence gathering and crime prevention are crucial. Intelligence gathering is the process of collecting information (*Collins English Dictionary*, 2017). Crime prevention involves "adopting measures intended to decrease or stop criminal

activity, especially by implementing programmes to deter potential offenders or to enhance the security of potential targets" (*English Oxford Dictionary*, 2017).

According to Alemika (2005), information and intelligence are obtained when one analyses, interprets and evaluates data and statistics. According to him, the various security agencies in the country are yet to develop adequate ICT platforms needed for the management of the activities and the workforce for efficient operations. This inadequacy he avers contributes to the ineptitude of the agencies despite all efforts put in place to realise their objectives. The reasons adduced for this inefficiency as highlighted by Alemika include the following, among others: "inadequate understanding and appreciation of the role of criminal statistics and intelligence management in effective and efficient delivery of services by the police, and lack of necessary skills and resources for statistical and information management".

However, for efficient control of crime and prevention of same, as well as enhanced job performance, through effective security management, Alemika (2005) highlighted that criminal statistics of the police should include the following among others; every crime reported to the police or known by the police, classification of crimes, social background of suspects, social background of victims, classification of victims, criminal history of suspects, context of criminality, etc. This information is not only useful for the police; other security agencies can adapt or adopt such records for improved service delivery.

Crime prevention according to Okunola (2002) in Adebayo (2013) is the disruption of mechanisms, which cause crime events. It is also viewed as a way of life aimed at reducing crime and enhancing security to improve standard of living and develop crime-free environments (Adebayo, 2013). For crime prevention, intelligence gathering is significant.

Robert (2003) in Adebayo (2013) identified primary, secondary and tertiary perspectives of crime prevention. The former is aimed at changing environmental situations which create chance for a criminal act to take place while the secondary prevention attempts to identify possible offenders and taking measures in order to put a stop to criminal acts from being perpetrated. In addition, the tertiary prevention has to do with criminals and set of interventions targeted at curbing further criminal acts.

From the foregoing, the importance of surveillance, crime investigation and crime prevention, as well as information and intelligence gathering in security management cannot be overemphasised. Even though crime cannot be totally eradicated, it can be reduced to the barest

minimum when security agencies are well equipped to fight criminality. In other words, to tackle the state of insecurity in Nigeria, there is need for security agencies to deploy technology in fighting crime. Information and communication technology can help in building improved capabilities in fighting crime, bringing about enhanced security management.

2.4 Emergence of ICT in security management

Information and Communication Technology (ICT) use in security management is not new. As a matter of fact, ICT drives and enables development in most countries. ICT is a general name used to depict varied technologies utilised to gather, store, retrieve, process, analyse, and transmit information. ICT is used immensely in the field of law to enforce laws and to prosecute offenders (Sethi, 2013).

According to Leavitt and Pondy (1964) in Fairouz and Rifat (2009), when ICT tools are utilised, it has an impact on the organisation including people, culture, structure, process and tasks. Lengang *et al* (2000), Pinsonneault and Rivard (1998) in Fairouz and Rifat (2009) suggested that ICT is useful in sharing, converting, accumulating and establishing knowledge management systems that influences organisational management philosophy and management of members of the organisation. In addition, ICT ensures fundamental changes and enhances decision making. Lengang et al., (2000), Raymond et al., (1995), Brynjolfsson (1993), and Rogers (1983) in Fairouz and Rifat (2009) suggested that when ICT is applied, it influences the nature of organisational structure, processes, procedures, internal and external communication processes including organisational size. Ayoob (2000) in Fairouz and Rifat in contrast claimed that most ICT users believe that the advantage of ICT utilisation is for simple operational activities rather than for management use. In addition, extensively using ICT may bring about frosty relationship among workers.

Against this background, one can deduce that ICT is effective in operational activities. Hence, since policing involves a lot of operational activities, ICT utilisation would be most effective to improve efficiency. A number of factors make home grown policing out of date. New forms of crimes such as cyber crimes, international crime syndicates, among others, are emerging, in addition to conventional societal challenges such as crime, mob violence, civil disturbances, among others (ICTD Newsletter, 2007). Criminals are ahead of security agencies in using new technology including ICT in perpetrating crime. As a result, there is need for security agencies to deploy latest technology for improved service delivery.

This section is therefore concerned with the emergence of ICT use in security management as identified by Oyeobu (2010); divided into five periods: 1850-1888, 1901-1932, 1948-1967, 1967-1970, and 1970 onwards in the United States specifically.

San Francisco between 1850 and 1888 used what is referred to as systematic photography for identification of criminals. In 1877 in New York, the police and fire departments used telegraph. However, for Bertillon system of identification, the telephone was utilised by the police in Chicago. According to Oyeobu (2010), for identifying criminals, a French criminologist named Alphonse Bertillon, used techniques of human body measurement. His system was applied in North America and Europe. Later on, the fingerprint method was applied in identifying criminals.

Between 1901 and 1932, Sir Edward Henry introduced the fingerprint classification system which was later adopted by Scotland Yard. Subsequently, fingerprint classification systems were extended. In France, the first crime laboratory was established by Edmund Locard while in the United States of America, the first crime laboratory was established by the Los Angeles Police Department (LAPD). Furthermore, Detroit Police used the one-way radio, while Boston Police used the two-way radio. Also, American Police made use of the automobile and the Federal Bureau of Investigation (FBI) inaugurated its crime laboratory which is now world renowned.

Security organizations started the use of radar as a tool between 1948 and 1967. Many other associated institutions such as Forensics Academy and other State police outfits also set up ICT systems to digitise the procedure for arrests and warrants. A particular side-held baton was created by an ex- US marine personnel, the equipment quickly became standard among the country's internal security outfits.

In 1967-70s, the FBI opened the National Crime Information Centre (NCIC). NCIC has a computerised national filing system on any wanted persons and stolen vehicles, weapons, and other items of value. Beginning in the late 1960s, in a bid to replace revolver and baton with a more technologically advanced riot control alternatives attempts, the TASER emerged. The TASER operates by shooting two wire-controlled little darts into the suspect or suspects' clothing and sends a 50,000-volt shock. As a matter of fact, in the year 1985, all state police were using the TASER. However, its popularity was kind of controlled because of its range limitations and limitations which affect those under the influence of either drugs or alcohol (Oyeobu, 2010).

From 1970 onwards, according to Oyeobu (2010), immense computerisation of United States police organizations started with computer-assisted dispatch (CAD), management

information systems, centralised emergency call using 911 as well as centralised integrated dispatching of police, fire and medical services for large metropolitan areas.

At the Federal Bureau of Investigation, Rockwell International installed the first fingerprint reader, while AFIS, the first actual automatic fingerprint identification system was pioneered by the Canadian Police in 1979. Consequently, the "enhanced" 911 became an in-thing among police outfits as it allows dispatchers through computers determine distressed callers' numbers and addresses (Oyeobu, 2010).

Majority of police departments in the United States make use of computers for myriad of activities such as manpower allocation criminal investigations as well as budgeting and dispatch. Departments in Chicago, New York, and some states in America increasingly use sophisticated computer programmes to map and analyse crime patterns (Oyeobu, 2010).

There are different ICT tools that can be effectively utilised by security agencies. These tools coupled with proper intelligence gathering ensure effective security management. Oyeobu (2010) identified some ICT tools in policing, which if properly utilised by security agencies, especially the Civil Defence Corps, would enhance effective security management in Nigeria. These tools include: in-camera systems, crime lights, graffiti cameras, photo enforcement systems, electronic white boards, thermal imagers, lasers, radios, less-lethal technology, language translators, crime mapping, diagramming systems, global positioning system, automatic license plate recognition, wrist phones, video sunglasses, camera pens, infra red cameras, CCTV, wireless button camera, speed enforcement camera, amongst others. According to Chika (2014), video and CCTV camera are essential ICT tools to combat and prevent crime.

Crime lights are one of the ICT tools identified. Crime lights make it easier to process a crime scene quickly, conveniently and meticulously. Crime lights can detect such things as hair, fibers, and body fluids at the scene of crimes. Farrington and Welsh (2002) carried out a study on street light infrastructure on crime. The study came up with split conclusion, while half of the study found out that street lighting helped in curtailing crime menace, the other half found it ineffective. The study concluded that enhanced lighting should be a determinant of a situational crime reduction programme. Improved street lighting, according to Farrington and Welsh (2002) is correlated with enhanced lawful utilisation of structures and infrastructure by the citizenry. In an environment with high-crime rat street light infrastructure is visible, cheap and a suitable strategy to reduce crime.

In-Car Camera Systems are invaluable ICT tools that ensure a high degree of officer professionalism. Recording of events involving the public using a patrol car outlook is important in law enforcement matters such as criminal investigations and arrests, traffic stops, training, among others. Officers often find the in-car camera system a veritable witness of events in situations where the officer's statement may be in doubt. Such gadgets are very simple to use and are the most usually deployed system on police cars. Also, such gadgets are able to record different traffic and road situations in advance and are normally used to record events during routine stops critical incidents as recorded video data (Indiana Forensic Institute, 2011).

Campina (n.d.) describes the effect of "in-car cameras" on contemporary policing as well as the society being served. He further suggested how "in-car cameras" are important in officer safety. Currently, police departments are expected to adopt technology for better prosecution of cases in courts. The video recorded by the "in-car camera" can determine the success or otherwise of an officer testimony during court proceedings in this digital period. While corroborating Stockton (1999) in Campina (n.d), he averred that the "in-car camera" is essential to law enforcement job performance on a daily basis as it captures evidences in visual and audio format which will be helpful in prosecution. The "in-car camera" is as well useful in providing evidences to validate witnesses' testimonies in the court of law as well as vindicating the choice of action taken by personnel especially when human rights complaints are filed.

The photo enforcement system, a scientific tool in policing, is useful in improving safety for the public. It automatically generates red light violations and/or speeding summons. The photo enforcement system is useful for good engineering practices, public education, community involvement, and programme management. Graffiti cameras are also in existence today and can notify security agencies that vandalism taking place somewhere. These cameras are also used to observe illegal dump sites, including preventing loitering and other related crimes. This tool would be very useful in the Civil Defence Corps in its anti-vandalism drive and general surveillance.

Thermal imaging is another tool that would be useful in policing. It is useful in locating a fleeing suspect and other persons of interest quickly within a large area. They are user-friendly and easy to maintain. Imagers are useful in reducing exposure to dangers during searches under buildings or crawling in spaces or attics. One important thing about this device is that suspects

would be unaware of any officer's precise location even though the officer knows the location of the suspect (Oyeobu, 2010).

Thermal imagers are also useful in finding hidden items and vehicles suspected to be used for crime within civic centres such as amusement parks, parking lots, fields, and so on. According to Oyeobu (2010), for scanning physical evidences, imagers are quite handy. Imagers can scan roadways tyres' tracks or other invisible marks. Proactive imager surveillance are useful in scanning public parks, alleyways, public streets, and parking lots, including other areas where people do not expect privacy.

Criminal Investigations Record Systems are useful for criminal investigations. A novel record system have been created with the capability to extract partial names, physical features description, vehicle details from several record systems so as to match such data with the details and biometrics of a suspect in order to help investigation and apprehension of a criminal. According to Kawai and Dogo (2011), Criminal Records Information System (CRIS) is useful in assisting the police with valuable information in controlling (apprehend, prosecute, and sanction) criminals. To effectively control crimes, police stations, which currently lack a records management system (RMS) to assist in data capturing should have a RMS, where important information such as, where crimes were committed, involving who, time of crime, amongst other information, will be recorded and properly stored in a database.

Electronic White Boards are equally important in policing especially for meetings. Dry-erase boards are used for taking notes during meetings for future reference after being copied. Electronic white boards scan notes kept on them and automate copying. Electronic white boards are useful in producing copies of information and downloading of data to a computer for storage and analysis for onward distribution to field officers.

Communication systems are important tools needed in policing. According to Oyeobu (2010), law enforcement officers can share suspects' pictures, suspects' fingerprints, bulletins, criminal records, blueprints, and surveillance video footages in minutes or even seconds across thousands of miles. Another key issue in communication systems is that of interoperability which involves sharing data in a real-time but secured environment. It is important because the systems and officers in reality can talk to each other.

Lasers are essential in policing. With terrorism threat, handheld laser spectroscopy devices can be used by security operatives to analyse the chemical components of an item

quickly. During such situations, security personnel scan the suspicious item with the device and receive a result of the chemical makeup of such item with high degree of accuracy.

Language translators as identified by Oyeobu (2010) are also identified as important in policing. Translation services are carried out via telephone or translators often affiliated with local educational institutions. For instance, in a situation where officers want to talk with someone who does not understand English Language, what should be done is to decide on the language of choice by touching the phrases on the touch pad. Desktop systems can also translate an officer's speech into the preferred language.

Less-Lethal Technology can also be adopted in policing. Less lethal technologies are of different types. Modern law enforcement agency should as a point of necessity acquire other types of such technology, for instance, specialty impact munitions, electro-muscular disruption technology (TASER), and so on for enhanced service delivery.

Diagramming Systems have been found helpful in law enforcement. Accident and crime scenes can be sketched. Technologies used for these operations are accurate and simple to use, the end product created are extremely professional looking images often found very useful for further analysis and prosecution of cases in court (Oyeobu, 2010).

Law enforcement professionals do not need to patrol areas to catch criminals with the advent of crime map. Crime mapping allows officers to graphically describe where crime has taken place and to some extent foretell future crime locations. It also enables field commanders to direct patrols through intelligence-led policing. Security agencies these days utilise crime maps in deploying officers for patrols more effectively without the waste of human and material resources.

In addition, with the advent of ICT, officers can check license plates with the use of Automatic License Plate Recognition (ALPR) system. This ICT gadget allows officers to check several vehicle license plates in order to verify if a vehicle is stolen, if the registered owner of the vehicle is a wanted person, or if there is any form of restraint on a registered owner driver's license. This electronic device is flexible as it can be fixed on a mobile car by attaching the ALPR system on patrol vehicle while on duty.

Furthermore, the Global Positioning System (GPS) a device used in determining the location of a suspect or any property in question. It comes in varied sizes such that it can easily be attached to the suspect's vehicle or placed in any of his property and there would not be need

for police chase. The technology is useful in security management as it can be very useful in reducing response time to an emergency by identifying the closest patrol team to a crime or emergency scene.

Other ICT tools include the following: video sunglasses, which is a gadget that enables the wearer to record events within his line of vision based on the memory size within two to thirty-two gigabytes. There are also wristwatches with capability of mobile phones. They are used to surreptitiously transmit conversation in audio format. There are pens with cameras called camera pens used in investigation as it helps in recording videos of happenings secretly. Such devices can have memory capabilities as large as sixteen gigabytes (Oyeobu, 2010).

Infrared cameras also called thermographic cameras that capture images from the infrared spectrum through snapshots. Firefighters seldom utilise infrared cameras during operations. Police helicopters also use infrared cameras to observe fleeing suspects when it is dark. It is also used by the military to observe adversary combatants when it is murky or to situate facilities that are underground.

Speed enforcement cameras also referred to as traffic enforcement camera, safety camera, among others, are computerised ticketing machines. It includes a camera mounted alongside the road or installed in a security patrol vehicle in order to detect traffic-related regulation violations Automatic Speed Enforcement (ASE) is used to "detect speeding violations and record identifying information about an automobile including the driver" (US Department of Transportation, 2015). ASE can be used to complement and not to replace conventional enforcement operations in policing. It is currently being used in many countries around the world.

Pilkington and Kinra (2005) in US Department of Transportation (2015) methodically researched relevant studies on ASE and its effect on traffic mishaps between 1992 and 2003 in the United Kingdom and Australia. Findings from the studies inferred a positive impact of the technology on crashes, fatalities, and injuries, even though at varied degree. From the results of the study, the technology has the capacity to significantly reduce crashes, although this has been debated as a result of methodological limitations.

Wireless button camera is made of a high resolution CCD camera hidden behind a regular cloth button and a wireless kit (a receiver and portable a transmitter). It has the automatic motion detection features and can record for long durations. It has built-in wireless recording and

receiving ability and is primarily being used by law enforcement agencies. It is used for investigation and surveillance (Worldwide Technologies, 2013).

In law enforcement, information is very vital in decision making; hence, crimes, suspects, and victims of crime have a location or a specific address. Information is very important in the daily deployment of more and more ICT resources as well as in developing tactical strategies that would be useful to deter, and prevent crime in this new age of technology. Geographical Information System (GIS) helps in analysis of crime, prevention of crime, apprehension of criminals and gathering of intelligence information in solving societal problems. GIS enables officers and men to efficiently perform their duties including other functions such as planning and analysis, data management, field operations and situational awareness.

Security agencies, most especially, the Nigeria Security and Civil Defence Corps (NSCDC), the primary focus of this study, should be able to acquire and utilise the above mentioned ICT tools for effective security management in Nigeria. The officers and men of the Corps should not only have access to these ICT tools, but must also be compliant with the efficient use of these tools for effective security management in Nigeria.

2.5 ICT and national security in developed and developing countries

Crime is inevitable in the human society. People engage in criminal activities for different reasons such as their socio-economic background, value system, and the likes. That is why law enforcement agencies are in existence to curtail criminal tendencies to the barest minimum. Crime is and will continue to be an issue of concern in human affairs. Abolurin (2010) posits that in human society, crime has been in existence since the olden days, causing a threat to lives and property. He further added that the frequently used terminology “threat to lives and property” means that crime poses harm not only to human beings but their properties as well. Where there is crime, fear abounds and as such, the need to control crime is imperative in order to lessen apprehension and safeguard the populace.

Crime may be perpetrated by an individual for personal reasons or by an organised group by resorting to violence and murder where necessary to achieve their ends to acquire wealth to the detriment of the general public (Microsoft Encarta, 2009). Crime is perceived as an abnormal behaviour violating existing norms; in other words, cultural standards that specify how humans have to behave (Sellin in Abolurin, 2010).

Crimes may be violent such as violent rape, assassination, aggravated mugging, and burglary; or it could be property crimes such as burglary, arson, theft. It can also be in form of battery, blackmail, embezzlement, extortion, kidnapping, smuggling among others. The Independent Corrupt Practices Commission (1999) in Aremu and Ahmed (2011) estimate the economic cost of criminality and its management to be about 5% of the total GDP in the first world nations, as compared to third world nations with about 14% of the total GDP. However, the Department for International Development (2000) in Aremu and Ahmed (2011) maintain that insecurity negatively impacts welfare of all regardless of the economic status, results to morbidity and mortality, depletes family income and creates an atmosphere of terror. Aremu and Ahmed (2011) also note that the nature of cities in the country provides a conducive atmosphere of secrecy needed for criminal activities which is needed by men of the underworld.

As earlier stated, crime has taken a new dimension globally. It must be pointed out that globalisation facilitated the new wave of crime. According to Longe, Nagwa, Waya, Mbarika, and Kvasky (2009), increased ICT utilisation in sub-Saharan Africa created remarkable positive changes in socio-economic growth and development within the region. Strangely enough, ICT is being utilised by criminals for committing diverse crimes online. Social vices such as identity theft, e-mail scam, organised crime, child pornography, among others are now rampant. Inability to control this menace would result in cyber terrorism threat with the use of laptops and Internet access by some African countries to recruit, train and plan terrorist attacks. Longe's *et al*., (2009) study highlighted how criminals make use of ICT especially Nigerian 419 scammers in sub-Saharan Africa. The study also reviewed the origin, metamorphosis, concerns and effects of these challenges while also suggesting strategic policies to address the problem.

A number of studies such as that of Ayoku (2005), Adomi and Igun (2008) and Longe, Chimeke, Onifade, and Longe (2008) have also exhaustively studied the use of ICT for criminal activities in Africa. The agreement is that in spite of the apparently increasing developments in ICT in sub-Saharan Africa, these technologies are used for criminal activities. Therefore, a situation is created where ICT is used for purposes other than that for which they were initially created. For some years now, the backlash of proliferation of ICT utilisation in Africa has led to the use of the Internet and cell phones as a means for criminality (Longe *et al*., 2009).

It should be noted that criminals utilise ICT for their nefarious acts and have continued to perpetrate varying degrees of crime, which has continued to generate social malaise and threaten

the existence of a unified Nigerian State. There are different stakeholders involved in crime control in Nigeria as identified by Abolurin (2011), such as the Military (Nigeria Army, Nigeria Air Force, Nigeria Navy), the paramilitary which include the Nigeria Police Force (NPF), the Nigeria Security and Civil Defence Corps (NSCDC), the Nigeria Drug Law Enforcement Agency (NDLEA), the Federal Road Safety Corps (FRSC), the Nigeria Immigration Service (NIS), the Nigeria Customs Service (NCS), the Nigeria Prisons Service (NPS), the Economic and Financial Crimes Commission (EFCC), and the Independent Corrupt Practices Commission (ICPC), among others.

Other stakeholders in crime control in Nigeria include the security guards and vigilantes. They do not have as much fire power as the military or other paramilitary agencies aforementioned. All these stakeholders are empowered to safeguard the civil populace, as well as maintain law and order in Nigeria. This study however, would examine one of these stakeholders, the Nigeria Security and Civil Defence Corps, in particular, and assess the extent of ICT accessibility and utilisation as a determining factor for security management by the NSCDC.

There are many definitions ascribed to term 'security'. It is a state of protecting lives and property. Waever (1995) views security in two ways, "as a daily language to explain to be free from threat", and as employed in security studies to capture the survival of the state". Two schools of thought have also emerged in defining security. According to Tarry (2004), the traditionalists are in support of the maintenance of the Cold War notion of security defined in military and state-centric terms, while the non-traditionalists broadened and deepened the definition. The non-traditionalists are of the opinion that social, environmental and economic threats imperil individual live as opposed to the survival of the states. In other words, emphasis is more on human security rather than the state.

Having defined security, it is important to also define national security. *Farlex Dictionary* defines national security as a prerequisite to maintaining state's survival by using military economic, and political power, including exercising diplomacy. Lippmann (1943) in Abolurin (2012) notes: "A nation has national security when there is no war, or the threat of war, to preserve its legitimate interests." Furthermore, Lasswell (1950) in Abolurin (2012) asserts that the distinct meaning of national security is to be free from foreign dictation. In other words, Lasswell views national security as the minimum requirement for the protection of a state against external invasion.

Harold (1983) defines national security as the capability of preserving a country's physical integrity and territory; maintaining a country's economic relations with other countries on reasonable terms; preserving a country's nature, governance and institution, from outside disruption; controlling a country's borders.

However, Maier (1993) describes national security "... as a capacity to control those domestic and foreign conditions that the public opinion of a given community believes necessary to enjoy its own self-determination or autonomy, prosperity and well-being.

The importance of ICT in national security cannot be overemphasised. All security agencies need ICT for efficiency and effectiveness, since criminals now perpetrate crime using highly sophisticated ICT tools. Sethi (2013) submits that criminals are ahead of the police in using ICT to perpetrate crime. According to him, he notes that the police force uses ICT in operational activities such as surveillance through the application of Closed Circuit Television technology, maintenance of records, and traffic control through the use of speed cameras generally mounted on police operational vehicles. He further maintains that ICT utilisation in police force has greatly improved service delivery. Technology enhances police efficacy in controlling crime, including enhancing their professional status and organizational legitimacy (Sethi, 2013).

In corroboration, Otter in Greater London Authority (2013) submits that ICT is a vital resource for security operatives. He notes that security work relies heavily on the use of ICT, from recording of crimes to public communication. However, he opines that technology is not presently used in a manner that aids field officers. In 2012, a study in the United Kingdom examined how security personnel in security agencies use technology in the line of action and discovered that only one (mobile telephony) out of about a score operating systems needed by officers to perform their duties was always available though not often effective. In addition, Otter (2013) stated that even while equipped with modern technology, security personnel have struggled to correctly utilise ICT. While Rowley in Greater London Authority (2013) maintained that the Metropolitan Police Service technology is becoming obsolete and unable to keep up with trends in ICT. The service, he notes, has close to 1000 systems linked together over the last four decades. This old fashioned systems present a constraint while carrying out their duties. The Metropolitan Police (Met) Service current ICT is outdated, ineffective and expensive to maintain. The Met invests on ICT, but most of it goes on maintenance of old systems, rather than

investing in new technology. As a result, the officers lack the necessary ICT to work productively, bringing about increased crime rate.

Still on ICT and national security, the Metropolitan Police Service IT Strategy in Greater London Authority (2013), submits that a survey carried out by Deloitte constituting 200 police officers and 100 civilians at the Met, discovered that technology-induced challenges are experienced constantly. According to Rowley (2013), the ICT systems in existence are becoming outdated; about 70% of Met systems are outmoded. To maintaining the systems are quite costly and Met spends about 85% of its ICT budget on 'keeping the lights on', rather than maintaining the frontline with contemporary technology and enhanced public access. Hence, he advocated for the use of mobile phones such as smart phones and tablets for effective operations. He buttresses further that mobile phones are quite handy when taking statements of offenders; this is because it makes evidence capture to be strong, and also can be used to take photographs of offenders. Hence, he advocated that officers should cultivate the habit of using their mobile devices when taking statement of offenders.

In addition, Otter (2013), states that the social media will take an essential place in the future of policing as "it will help in managing high profile incidents; providing useful source of intelligence; and allowing officers to interact with local communities in a cost effective way". For instance, the Boston Police Department was commended for its use of social media following the bombings at the April 2013 Boston Marathon (Otter, 2013).

Shedding more light on ICT and national security, Busagala and Ringo (2013) conducted a study on "Constraints of E-Policing adoption: A case of Dodoma, Tanzania". The study collected data with the use of questionnaires, focused group discussions, document reviews and interviews. Findings were as follows: "mobile phones in policing activities account for 20.6%, while other means include radio calls (0.5%) and letters (2.1%)". Website, fax, imaging technologies and fixed phones were found not to be used at all in the study area though 2.3% of the security outfits claimed to be connected to the Internet. 55% of the respondents indicated no ICT skills. The study revealed inadequate ICT training programmes for police personnel (100%).

The study revealed that e-policing adoption was at a rudimentary stage in Tanzania. A number of constraints as identified by Busagala and Ringo (2013) included poor computer skills among the officers, poor training programmes, inadequate finances for facilitating a variety of

activities, low Internet reliability and diffusion, improper selection of officers for ICT training and poor ICT infrastructure. Recommendation for the study was creation of a platform for e-policing whereby victims and witnesses of crimes can report to the appropriate office by sending short messages.

Koper *et al.,* in Busala and Ringo (2013) argue that e-policing involves the use of state-of-the-art-technologies such as video surveillance technology, forensic equipment, inter-agency radios, integrated databases, Geographic Information System (GIS), computer-aided dispatch with GPS for patrol cars tracking, fingerprint readers, among others, including the use of investigative software.

According to Her Majesty's Inspectorate of Constabulary in Busala and Ringo (2013), ICT enhances the ability of security operatives to effectively reach huge number of individuals. In addition, with ICT, investigations are quickly carried out with reliable crime incidents' findings. E-policing brings about improved crime detection and crime analysis, as well as enhanced investigation/intelligence gathering.

Oludare, Omolara, Umar and Kemi (2014) carried out a study on usage of ICT gadgets in dealing with terrorism challenges in Nigeria. The findings of their study showed that the adoption of ICT in dealing with criminality in Nigeria is still at infancy though progressive as many security organisations are yet to adopt such tools in carrying out their operational procedures. Also, the result showed that the utilisation of mobile phone was favoured as very effective in communicating to security agencies during crises. In addition, it was discovered that using television, wireless radio, CCTV, satellite imagery, surveillance cameras, and social network analysis were found to be effective in communicating during emergencies.

According to Oludare *et al*., (2014), the role ICT plays in crime management in contemporary times is significant, with the modern tactics being used by the western world to deal with crimes. The solution to the insecurity challenges in Nigeria is by the deployment of satellite technology. Surveillance camera is being used in some cities to tackle crime. The United Kingdom, for instance has close to two million Closed Circuit Television cameras, while London city has close to 450,000 Closed Circuit Television cameras. In addition, the United States of America, some Asian and European countries, the Middle East, including Africa, are beginning to adopt ICT to checkmate threats to their national security.

Oludare *et al.*, (2014) suggested ways by which ICT-based technologies can help security agencies in their job performance to achieve more efficiency in operational activities. One of such is surveillance, by deploying security cameras and by electronically intercepting phone calls as well as using human intelligence (HUMINT) and postal interception. Other means as identified by Oludare *et al.*, (2014) to mount surveillance on supposed targets include using satellite imagery, surveillance cameras, radio-frequency identification, data mining and profiling, and geo-location devices, among others. For intelligence gathering, the ICT tools identified included the internet, mobile telephony system, social media networks and the media, which are vital in intelligence gathering by security agencies.

Through ICT deployment, it is now easy to intercept communication between terrorists and terrorists' groups. In addition, enhanced intelligence sharing and investigations, in addition to collaboration between security agencies is possible with the use of ICT. Information and Communication Technology is essential in tracking, tracing and investigating criminal activities. With the latest cash-less society being introduced, according to Oludare *et al.*, (2014), transactions will be carried out using ICT and this would make it easy to detect any suspicious cash movements. This to a certain extent will help in reducing the financing of activities that are a threat to national security.

In addition, as regards coordination, Oludare *et al*., (2014) believe that security agencies can work in collaboration with one another by not replicating efforts, guarding against information exploitation as well as improving information sharing among them. This to a considerable extent would enhance management of national security through deploying ICT by creating a centralised database as a proactive means to fight insecurity.

From the above, it is evident that ICT has an effect on security management. Better use of ICT in security can make officers and men to be more effective, it reduces costs and crime rate, as well as increase public confidence. New technologies according to Greater London Authority (2013) offer significant opportunities such as the following: "mobile technology allows officers to spend more time on beat; social media presents a cheap and effective platform for officers to reach out to communities; and predictive crime mapping is effective at reducing crime".

Abolurin (2012) however submits that "the holistic idea of national security is modern and factors in security threats from within or outside the state". Modern perspective to national

security according to him involves both military and civil elements such as military security, human security, energy security, among others. Abdussalami (2005) observes that human security is needed to achieve national security. He stresses that international debates have emphasised the need to secure basic necessities of life. Thus, human security is crucial in attaining physical and national security. However, the absence of vital human security results to insecurity and conflicts.

From the foregoing, one can conclude that national security can only be achieved when human security is intact. At present, the Nigerian State has not attained national security. The state of insecurity is still very high. The Nigerian State is confronted with multifarious security challenges such as vandalism of oil pipelines, PHCN cables, water cables, oil bunkering kidnapping, armed robbery, insurgency, terrorism, child trafficking, man-made and natural disasters, political conflicts, civil unrest, boundary disputes, cultism, ethno-religious crisis, militancy, criminality and organised crimes to mention just a few. All these security issues threaten the peace and security of the Nation.

These contemporary challenges in the Nigerian State have established that more than ever before, there is the need to reconceptualise the security system. To defeat small, innovative and adaptive threats in the country, there is need to apply, re-engineer and utilise information. With the new dimension criminals have taken with the use of highly sophisticated weapons, there is need for security agencies to be more IT-compliant as criminals are evolving, and highly compliant. The adroitness being displayed by these criminals indicates that there is need for security re-definition in conformity with growth in technology. As a result, this research examined ICT accessibility and utilisation as determinants of security management by the Nigeria Security and Civil Defence Corps.

2.6 Intelligence and operational strategies in security management

The nature of security duties requires intelligence and effective operational strategies. Intelligence as a matter of fact is a valuable tool in the investigative process. Manning (1992) describes police intelligence as prospective, applied and retrospective. Intelligence has been described as a management philosophy and model where information and its total analysis are essential for security decision making (Ratcliffe, 2008). He also described it as a top-down

managerially driven approach to crime control, which concentrates on prolific offenders and criminal groups identified as threats through crime intelligence analysis.

Manning (1992) described prospective intelligence as data collected in lieu of the commission of a crime or crisis and is intended to help and control the phenomenon of interest. It is used for criminal targeting. Applied intelligence on its part is the basis of detective work and is used to link known deeds that have already occurred with previously named suspects. Retrospective intelligence occurs in the normal conduct of police work and includes activities such as checking for outstanding warrants for criminal suspects confronted in connection with events that are in progress. Also, retrospective intelligence remains a primary area where advanced communication and information technologies broaden the potential of the police officer.

From the above, one can infer that intelligence results from a method that starts with data, grows to information, later changes to knowledge and, when it is used on decisions affecting the criminal environment, it then changes to intelligence. Operational strategies are required in policing and describe the ways in which security agencies cope with the various activities that require their attention. They rely on many operational strategies to put into effect the law so as to manage majority of events and challenges they confront while carrying out their duties. For instance, routine incident response, preventative patrol, criminal investigation, emergency response, community policing, among others require effective operational strategies. Manning in Flanagin (2002) identified three (3) main operational strategies *viz*: proactive, preventive and reactive, that interact with the type of information and intelligence in order to produce the outcome goals of the police.

Proactive policing strategies are used to create the conditions of crime in order to catch criminals, and rely on prospective intelligence in order to predict events. Similarly, preventive policing strategies require substantial intelligence on past and potential behaviours and are used to alter, prevent, or intervene in criminal situations. In addition, reactive policing strategies are invoked in response to specific events, and take advantage of both retrospective and applied intelligence; hence, it encourages the officer to act largely autonomously.

Flanagin (2002) however concluded that the nature of police work and police organisations, the types of information processed in the conduct of police work, the character of police intelligence, and the various operational strategies invoked by the police combine to form

a specific environment to which advanced information and communication technologies may be applied.

2.7 The importance of ICT in security management

For effective security management, ICT plays an important role. The Nigerian government, according to Adegoke *et al.,* (2015) on a yearly basis spends millions of dollar, to acquire weapons and other related items to fight terrible crimes. However, the problem still persists, hence, the government should realise that physical combat alone cannot effectively control contemporary crimes, rather scientific approach is necessary through deploying hi-tech equipment for intelligence gathering and forensics (Adegoke *et al.*, 2015). The researchers are also of the opinion that crimes that could have been controlled go totally unobserved as there are no effective surveillance and tracking tools. Murder cases stay unsolved since there are no reliable database, surveillance, tracking and forensic tools that could help in investigations. They however strongly believed that if ICT is properly utilised in the country, it will curtail crime rate and also help in investigation of crimes.

According to Azazi (2011) in Robert-Okah (2014), in order to arrest the menace of crime across the country, the Federal Government of Nigeria passed the anti-terrorism Act in 2011 to check terrorism, installed computer-based CCTV in some parts of Nigeria to enhance surveillance. The government also moved to provide physical measures with a view to proactively arrest potential attacks before they are executed while also providing equipment and other facilities that will make the broadcast of security information through the mass media.

According to Reichert (2001), Chan (2001), and Harris (2007) in Byrne and Marx (2011-13), while highlighting efforts by formal security agencies, individual citizens and concerned groups, historical development of crime prevention strategies indicated technological innovations as a catalyst. Reichard (2001) in Byrne and Marx (2011-2013) identified two general types of technological innovations for enhanced security management: information-based technologies (soft technology) and material-based technologies (hard technologies). Both types of technological innovation, according to Byrne and Marx (2011-2013) have led to remarkable changes in police structure and organisation. They further added that new innovations in crime prevention and improved police performance have been developed.

Byrne and Marx (2011-2013) identified hardware technology deployed by the police to include less than lethal force devices, new technology-enhanced patrol cars, new police protective gear and new weapons. Soft technologies require the strategic use of information for prevention of crime as well as improved efficiency in carrying out police duties. Soft technology innovations consist of crime analysis techniques, new software programmes, data sharing/system integration techniques and classification systems.

A review by Goff and McEwen (2008) in Byrne and Marx (2011-2013) underscored the nexus between funding by the Federal Government and use of ICT by security agencies. Goff and McEwen (2008) in Byrne and Marx (2011-2013) indicated the importance of grants in assisting law enforcement agencies in the procurement and utilisation of technologies that support professional police operations citing Office of Community Oriented Policing Services (COPS) programme. The grants funded crime fighting technologies that aided in redeploying the equivalent of more than 42,000 full-time law enforcement professionals into community policing activities.

Furthermore, Hummer (2007) in Byrne and Marx (2011-2013) acknowledged the procurement of more hardware in the last two decades, which includes CCTV systems, new weapons, body armor, gunshot location technology, less-than-lethal force technologies and new patrol car technology. Nestlel (2006) in Byrne and Marx (2011-2013) indicated that several large U.S. cities deployed CCTV cameras, including Boston, New York, Los Angeles, Chicago, and Newark New Jersey, and it was estimated that there were roughly 1 million CCTV cameras being deployed across the United States by year end 2006. In addition, billions of dollars were expended by China in 2006 in developing software capable of undertaking facial recognition to create a China national identification database. The technology empowered the police to recognise persons of interest captured during video surveillance (Klein, 2008). Welsh and Farrington (2007) in Byrne and Marx (2011-2013) found out that infrastructure such as improved street lighting and installed CCTV were strategic and very effective in curbing crimes in the United Kingdom than in the United States.

Quarshie (2014) added that law enforcement agencies in Africa can use the social media to fight crime, as it helps in distributing information, and news of crime can rapidly spread across these networks. By sharing a surveillance camera image on social media, law enforcement agents may be able to get tips as to the identity of the perpetrator. Social media can also be used to share

safety tips against crime. A consistent and harmonized approach supported by strong ICT security system is needed to fight crime in Africa (Quarshie, 2014).

According to Gottschalk (2007) in Hakan, Serdar and Bahadır (2013), to enhance the likelihood of generating any information that is of quality, the police make use of information technologies. While Eck (1983) in Hakan *et al.,* (2013) submits that information technologies are important instruments of criminal investigations as they help in creating, storing, retrieving, transferring, and applying investigation-related information. Information technologies can aid in reducing the time committed to criminal investigation by automating some routine investigative tasks. Due to the vital role information plays in the investigative process, Innes (2003) in Hakan *et al.,* (2013) defined criminal investigation as "The identification, interpretation and ordering of information with the objective of ascertaining whether a crime has occurred, and if so, who was involved and how".

Hakan, Serdar and Bahadır (2013) investigated how ICTs are deployed by the police in law enforcement. The study population comprised "200 law enforcement agencies, including the state law enforcement agencies and a random sample of municipal, county and campus agencies. 280 out of the 630 agencies responded to the survey totalling forty-four percent response rate. The relationship between clearance rates and the use of the information technology scale was investigated with both bivariate and multivariate analyses. Results showed that the relationship between clearance rates and departmental use of information technologies was not significant". The results revealed little or no relationship between clearance rates and use of IT. The study further revealed that the use of information technology scale was statistically significant in only very few of the models used. They concluded that ICT should be utilised efficiently where appropriate in security operations.

In the words of Tombul and Cakar (2015), technology is inherent to society and is a natural part of our personal lives. They added that criminals now use ICT to commit crimes and have now moved from earlier noticeable methods of operation to the digital realm. Information technologies (ICT) according to them, have lately been deployed at length in law enforcement agencies the world in general administration work (personnel, payroll etc.), and in core policing duties, such as crime prevention. Law enforcement agencies are increasingly utilising the same technologies taken advantage of by criminals to also fight such crimes and criminals (Tombul and Cakar, 2015). The latest innovations and implementations which enhance service delivery in

policing bringing about effective job performance are GIS, crime mapping, biometrics, fingerprints, DNA research, facial recognition, speech recognition, social media policing, shotspotter detection system, and CCTV (Tombul and Cakar, 2015).

Custers (2012) posits that "law enforcement agencies do try to optimise the use of technology in criminal investigation and prosecution processes, but many of the users are not satisfied. Owing to their lack of insight about new technology, users might prefer to continue to use the current technology rather than the new technology". In addition, Custers (2012) in Tombul and Cakar (2015) claims it is unclear those technologies that are more effective and utilisable within the context of police duties.

Stuart (2013) states that the social media is vital in policing as it help in connecting with the general public. By utilising the social media, people in real time send and receive data as well as post pictures, documents and audio recordings that are useful in crime resolution. Community policing has been enhanced through the social media; the law enforcement agents often maintain communication with communities and individuals who provide valuable information through such platforms. Boston Marathon bombings of 2013 highlighted the importance of social media in disaster management such as earthquakes, tsunamis, and riots etc. The apprehension of the culprits by Boston Police Department was largely due to the use of social media in sharing information with the community about the suspects (Tombul and Cakar, 2015). For pro-active policing solutions, ICT plays essential role. According to Tombul and Cakar (2015), in order to achieve successful policing, there is the need to closely follow the latest technological developments, understand the effective utilisation of information technology, as well as apply same extensively in policing contexts.

Ngugi, Ngugi, Were and Titany (2012) carried out a study on factors that influence service delivery in Kenya Police Service, Nairobi. The sample population constituted Police personnel in Nairobi province, totalling 1,300 police officers with different ranks categorised into the following: Gazetted Officers (Commissioner of Police, Senior Deputy Commissioner of Police I, Senior Deputy Commissioner of Police II, Deputy Commissioner of Police, Senior Assistant Commissioner of Police, Assistant Commissioner of Police, Senior Superintendent and Superintendent), Inspectorate cadre (Chief Inspector and Inspector) and other ranks (Senior Sergeant, Sergeant, Corporal and Police Constables).

From the findings, investment in ICT knowledge and ICT skills were low as shown by a mean of 4.6, ICT infrastructure was also rated as poor with a mean of 4.0, while ICT policy was also rated as poor with a mean of 3.7. The analysed data findings also showed that "a unit increase in ICT will lead to a 2.191 increase in service delivery; a unit increase in remuneration will lead to a 1.788 increase in service delivery, a unit increase in training will lead to a 0.886 increase in service delivery, a unit increase in service quality will lead to a 0.448 increase in service delivery" (Ngugi, Ngugi, Were and Titany, 2012). In other words, this means that ICT was perceived as contributing more to service delivery in policing. At 5% level of significance and 95% level of confidence, ICT had a 0.001 significant level; remuneration indicated a 0.002 significant level, training indicated a 0.003 significant level, while facilities had a 0.004 significant level. From the findings, ICT was rated as the most significant factor.

The study concluded that the Nairobi police service deployed ICT in its operations therefore, improving service delivery. Findings from the study also concluded that ICT knowledge and skills, ICT investment, ICT policy as well as ICT infrastructure were inadequate. However, it was suggested that more investment should be made towards staff development through training and retraining in the police service, which in turn would enhance staff productivity, increased understanding of the latest technology courses included in the curriculum, and realisation of the institution's goals and objectives.

From the above, it can be seen that the society today needs security agencies that can make good use of ICT in crime detection and prevention, intelligence and information gathering including the potential for increased job performance.

2.8 Barriers to ICT accessibility and utilisation in security management

Information and Communication Technology is considered essential in this age, particularly in an active business and competitive environment. In other words, utilising ICT is cost-friendly and efficient, including presenting quality goods and services to customers. ICT is vital in globalization as it facilitates universal flow of information, capital, ideas, people and products (Fairouz and Rifat, 2009). According to Li-Hua and Khalil (2006) in Fairouz and Rifat (2009), some researchers believe ICT is a group of elements (hardware, software, and people) that works collectively, bringing about benefits to the organisation in the form of information, product or services and so on. ICT, it must be emphasised, comprise the entire technology that

assists in the processing, transfer and exchange of information and communication services. ICT is perceived as a subject of expertise that links information technology (computers and applications) and telecommunication networks (intranet and internet), which allows people and computers interrelate not considering the physical location.

The researchers are of the view that the ICT term comprises hardware, software, networks and people which needs to be incorporated as a unit by connecting each one to the other in order to produce the information that will be useful in decision making, production of goods and services, promotion, as well as meeting the organisation's goals and objectives. The utilisation of ICT tools according to Leavitt and Pondy (1964) in Fairouz and Rifat (2009) is significant in the organisation, including people, culture, structure, process and tasks, which are the elements.

New innovations due to ICT are beginning to materialise. ICT is capable of cutting costs of coordination, communication and information processing. Hence, many businesses are taking advantage of it (Brynjolfsson & Hitt, 2000). ICT utilisation by security agencies has a lot of benefits. It assists frontline officers and men, including the society in various ways, including the following: making knowledgeable decisions in deploying resources for better response, officer and community safety; to ascertain security agents on duty are as efficient as possible at work in the community; utilising the benefit of information collected by the agency through its use for determining trends and enhancing response during operations, or with due adjustments to procedures, legislations, or policies; evolving a more friendly way to engage with communities; and sustaining positive contributions to state and national agenda (QPS, 2010).

There are barriers to the use of ICT in security organisations. According to Flanagin (2002), "the positive influence of advanced communication and information technologies on contemporary organisations can be substantial, police organisations do not seem to benefit to the extent that other types of organisations do". However, Manning (1992) contends that information technologies like other important and influential innovations are constrained by police personnel and institutional stereotypical nature, therefore as a consequence, the computer revolution in policing is yet to occur. The low return from these technologies in police organisations include, (a) the conditions of information processing for effective use of these tools, and (b) the character of organisational knowledge and the nature of police officers' skill (Flanagin, 2002). In addition, Flanagin (2002) submits that ICT has facilitated dramatic improvements in organisational

efficiency and individual effectiveness, although police have adapted a wide variety of these tools, there exists considerable barriers specific to police organisations that may inhibit the wholesale acceptance (and attendant benefits) of advanced communication and information technologies. Although, police organisations (in the United States) continue to take advantage of technologies to improve their operation, structural factors and information processing concerns inhibit the degree to which police officers stand to benefit from modern communication and information tools.

Furthermore, some problems identified confronting policing include the following: limited ability to analyse information because of its disparate locations; poor integrated information systems for operations; poor ability to exchange information with other related state and national agencies; poor quality data and information services for mission-critical processes; multiple entries of the same data, among others (ICTD, 2007).

From the above, it can be concluded that the conditions of information processing for effective use of ICT tools, the character of organisational knowledge and the nature of security officers' skill, structural factors due to the traditional role and structure of security agencies, as well as high cost of acquisition/maintenance, technical capacity among security agencies, are a challenge to effective ICT utilisation in security management. With effective utilisation of ICT tools by security agencies, there would be improved interorganisational and intraorganisational relationships, operational efficiency, enhanced decision making. Other functions of ICT in security management include accuracy, enhanced security reporting, reduce drudgery and substantiate evidence, stores valuable data for future reference, reduced crime rate, among others.

2.9 Theoretical framework

No single theory can exhaustively treat the relationship between the variables under study. This study therefore was hinged on the Human Capital Theory, the Diffusion of Innovations Theory and the Path-Goal Theory. These theories were found relevant to the study since security administration and management is a highly strategic endeavour. In the same manner, accessibility and utilisation of ICT is premised on human capabilities, innovativeness and strategic to the operations of security agencies in general, and the Nigeria Security and Civil Defence Corps in particular.

2.9.1 The Human Capital Theory

The Human Capital Theory was propounded by Adam Smith in the 18th Century and extended by Gary Becker and Jacob Mincer (Teixeira, 2014). The theory assumes that human capital can be likened to any stock of knowledge or characteristics the worker has (either innate or acquired) that contributes to his or her "productivity" (*Lectures on Labor Economics*, n.d.).

There are diverse views on what the Human Capital Theory entails. The Becker view assumes that human capital is directly useful in the production process. The school of thought believes human capital (resource, skills and characteristics) increases a worker's productivity in all tasks, although maybe in a different way in diverse tasks, organisations, and situations. Another school of thought referred to as the *Gardener view* opines that as there are several facets to human capital and its consideration as one-dimension is erroneous. This approach underscores mental and physical abilities as diverse skills (*Lectures on Labor Economics*, n.d.). In security operations, the personnel do not only use their physical capabilities rather, they bring mental and other social traits to bear in performing their duties.

Also, the Schultz/Nelson-Phelps view presumes that "human capital is viewed mostly as the capacity to adapt. According to this approach, human capital is particularly of use in dealing with "disequilibrium" situations, or usually in situations in where there is a changing environment which personnel have to adapt to", while the Bowles-Gintis view believe that "human capital is the ability to work in organisations, obey orders, adapt to life in a hierarchical/capitalist society". This school of thought believes in instilling in individuals the right ideology and approach towards life.

The possible sources of human capital differences, according to *Lectures on Labor Economics (n.d.)* include: innate ability, schooling, school quality and non-schooling investments, and training. Innate ability involves workers having diverse skills/human capital due to innate differences, while schooling regarded as the major hub of a lot of study is the most obvious element of human capital investments. The analysis of educational qualification is likely to be instructive considering similar factors affecting economic cost of schooling and non-educational economic cost.

Training on the other hand, is another part of human capital that employees obtain after schooling. It is frequently linked to some set of skills that are found to be of use in a particular industry or a particular set of technologies. To some extent, training can be said to be comparable

to schooling because the employee to some extent controls how much to invest. Training can also be regarded as being complex in view of the fact that it is not easy for an employee to make training investments by him/herself. In addition, the organisation as well needs to invest in training the employees. This is an additional cost to the organisation taking into account that training has an important "matching" component as it is very important that the employee invests in particular technologies which the organisation will find useful at some point. Therefore, training is considered a joint investment by organisations and employees, thus making the analysis complicated.

As earlier stated, this study is hinged on the *Human Capital Theory*. The officers and men herein referred to as personnel of NSCDC possess stock of competences, knowledge, social and personal attributes which aggregate into abilities used to create values in the course of service delivery to ensure security management. These capabilities can however be through innate ability, schooling, school quality and training, which will have an effect on productivity. In addition, the ability of officers and men of NSCDC to access and utilise ICT, through their knowledge and skills (innate or acquired) could determine their output – security management in the Corps.

2.9.2 Diffusion of Innovations Theory

Rogers (2003) in Sahin (2006) describe adoption as a tentative decision to fully utilise an innovation as a result of its advantage over other alternative actions, while rejection represents the decision to refrain from utilising an innovation. Rogers' describes diffusion as a process through which innovation/technology can be transferred through definite medium to a social system over time. Innovation, communication channels, time, and social system are the key components of the diffusion of innovations (Sahin, 2006).

Uncertainty is seen as a vital barrier to the adoption, or in other words, acceptance of innovations, hence an innovation's consequences may create uncertainty. *Consequences* are the changes seen to occur in a person or a social system due to the adoption or rejection of an innovation (Rogers, 2003, in Sahin, 2006). To lessen the uncertainty to adopt an innovation, people need to be educated of its advantages and disadvantages in order to be aware of every consequence. Rogers in Sahin (2006), in addition claimed that consequences can be grouped as "desirable versus undesirable (functional or dysfunctional), direct versus indirect (immediate

result or result of the immediate result), and anticipated versus unanticipated (recognised and intended or not)".

Rogers (2003) is of the opinion that time is not considered in a good number of behavioural researches and that when time dimension is included in diffusion research, its strengths is established. Included in a time dimension are "the innovation-diffusion process, adopter categorisation and rate of adoptions," in the words of Rogers. In addition, social system regarded as the last element in the diffusion process is perceived as "a set of interrelated units engaged in joint problem solving to accomplish a common goal". In view of the fact that diffusion of innovations occur in the social system, it has an impact on the structure of the social system. Structure is viewed as "the patterned arrangements of the units in a system" (Rogers, 2003). The social system characteristics have an effect on individuals' innovativeness, and this is the major criterion used to categorise adopters (Sahin, 2006).

When cause and effect of ICT is effectively communicated, adopters pass through a process involving five stages which include knowledge, persuasion, decision, implementation, and confirmation. The five stages usually follow one another sequentially.

i. The Knowledge Stage: This is the first stage of the innovation-decision process, where individuals learn about innovation and seek information about same. The important questions one needs to ask in this phase are "What? "How?" and "Why?" Throughout this phase individuals find out what the innovation is all about, as well as how and why it works.

ii. The Persuasion Stage: This is the second stage of the innovation-decision process. At this point, he individual is either pessimistic or optimistic about the innovation. However, a favourable or unfavourable attitude to an innovation may not directly or indirectly bring about an adoption (acceptance) or rejection (refusal) (Rogers, 2003, in Sahin, 2006). It is perceived that individuals shape their attitude after they know about the innovation.

iii. The Decision Stage: This is the third stage in the innovation-decision process where the individual has the choice to either adopt or reject an innovation. Adoption is when one fully uses an innovation, while rejection is not using an innovation. In other words, the "full use of an innovation as the best course of action available," is adoption, while rejection is "not to adopt an innovation" (Rogers, 2003, p. 177).

iv. The Implementation Stage: At the implementation stage, which is the fourth stage in the innovation-decision process, an innovation is applied or put into practice.

v. The Confirmation Stage: This is the last stage in the innovation-decision process, where the individual looks for support for his or her decision. However, the decision can be reversed if the individual is "exposed to conflicting messages about the innovation." (Rogers, 2003).

Rogers (2003) in Sahin (2006) portrayed the innovation-diffusion process as "an uncertainty reduction process", while he proposes five attributes of innovations - (1) relative advantage, (2) compatibility, (3) complexity, (4) trialability, and (5) observability - that helps in lowering scepticism about the new technology. However, the availability of all of these variables of innovations speed up the innovation-diffusion process. All the aforementioned factors could influence NSCDC personnel likelihood of adopting a new technology in security operations.

Rogers (2003) in Sahin (2006) equally defined the adopter categories as "the classifications of members of a social system on the basis of innovativeness". This classification includes innovators, early adopters, early majority, late majority, and laggards as expatiated below. In each adopter category, individuals are similar in terms of their innovativeness. Innovativeness is described as the degree to which an individual or other unit of adoption is relatively earlier in adopting new ideas than other members of a system.

Innovators: They are willing to experience new ideas and should be prepared to cope with unprofitable innovations, and a certain level of uncertainty about the innovation. The innovators are the gatekeepers bringing in the innovation from outside of the system.

Early Adopters: When compared to innovators, early adopters are more limited with the boundaries of the social system and are more likely to hold leadership roles in the social system. Other members come to them to get advice or information about the innovation. As role models, early adopters' attitudes toward innovations are more important as they put their stamp of approval on a new idea by adopting it.

Early Majority: According to Rogers (2003) in Sahin (2006), the early majority has a good interaction with other members of the social system; they do not have the leadership role that early adopters have. Though, their interpersonal networks are still important in the innovation-diffusion process. The early majority adopts the innovation just before the other half of their peers adopts it. They are deliberate in adopting an innovation and are

neither the first nor the last to adopt it. Thus, their innovation decision usually takes more time than it takes innovators and early adopters.

Late Majority: Similar to the early majority, the late majority includes one-third of all members of the social system who wait until most of their peers adopt the innovation. Although they are uncertain about the innovation and its outcomes, economic necessity and peer pressure may lead them to the adoption of the innovation.

Laggards: They have the traditional view and they are more uncertain about innovations and change agents than the late majority. As the most localised group of the social system, their interpersonal networks mainly consist of other members of the social system from the same category. Moreover, they do not have a leadership role. Due to limited resources and inadequate awareness-knowledge of innovations, they first want to make sure that an innovation works before they adopt. Hence, laggards tend to decide after looking at whether the innovation is successfully adopted by other members of the social system in the past. Due to all these characteristics, laggards' innovation-decision period is relatively long.

In addition to these five categories of adopters, Rogers (2003) further described his five categories of adopters in two main groups: earlier adopters and later adopters. Earlier adopters consist of innovators, early adopters, and early majority; while late majority and laggards comprise later adopters. Rogers identifies the differences between these two groups in terms of socioeconomic status, personality variables, and communication behaviours, which usually are positively related to innovativeness. For instance, individuals or other units in a system who most need the benefits of a new idea (the less-educated, less-wealthy) are generally the last to adopt an innovation.

When the society and specifically an organisation like the NSCDC decides to strategically adopt ICT in security operations, though opportunity to access technologies may be provided, the utilisation of the provided tool is dependent on the adoptability of the technology and the adoption rate among security personnel required to using it in the day to day tasks. However, the deployment of ICT by the NSCDC in carrying out security tasks as against the traditional method of policing by NSCDC is dependent on stages of the adoption process by the personnel. This will determine their conviction that the deployment of ICT in their operations could enhance their productivity, bringing about effective security management.

2.9.3 The Path-Goal Theory

The third theory adopted for this research is the Path-Goal Theory by Robert House (1996). The Path-Goal Theory merges goal setting and expectation by the organisation. It posits that the management of an organisation must help those they direct to attain their goals. It foists the responsibility of making sure their subordinates have the support and information required to achieve the goal set forth by creating a clear path and removing obstacles that stand in the way.

Against this background, the adoption of ICT by the NSCDC is contingent upon the type of security threat, availability of infrastructure in the society (external), the personnel attributes and organisational policies (internal). It is when all these are present that effective security management can be achieved.

2.10 Conceptual Model

The independent variables of the study are *ICT accessibility and ICT utilisation*, while the dependent variable is *security management*, as shown in the self-constructed model by the researcher in Figure 1. The Model assumes that ICT accessibility and utilisation could determine security management by the Nigeria Security and Civil Defence Corps. In other words, when NSCDC personnel have access to, and deploy ICT tools in their daily operations, it could enhance effective security management.

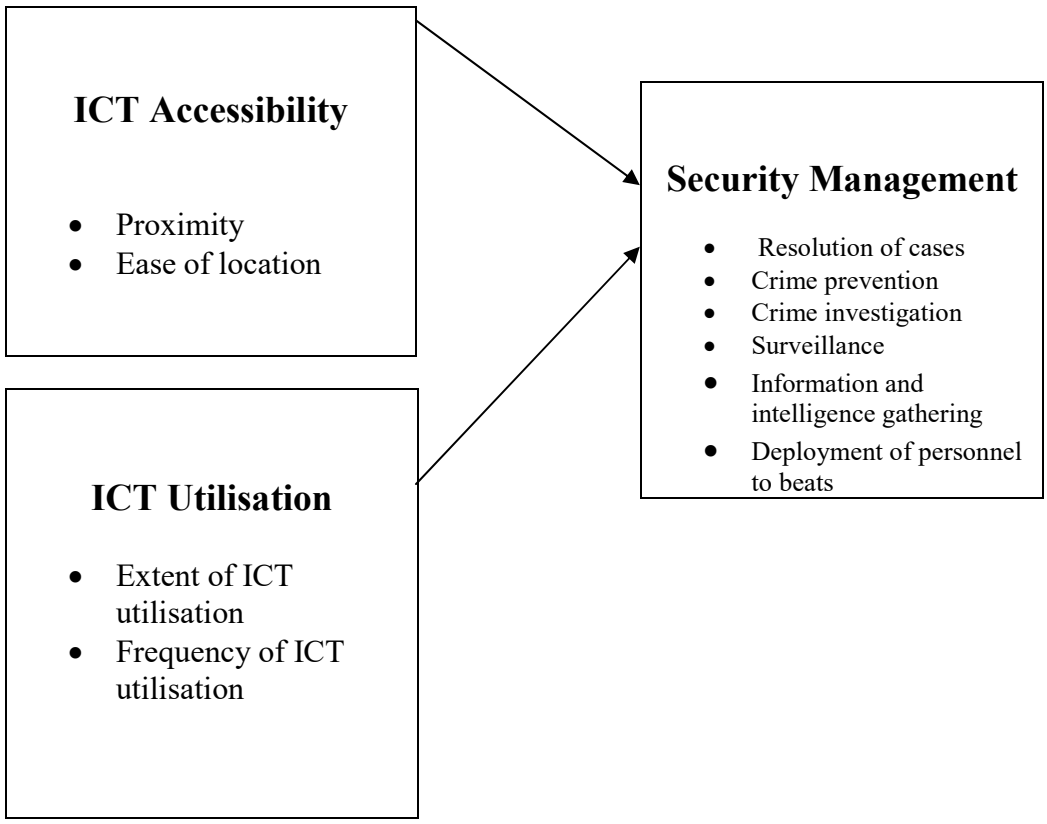

Figure 1: *Self-constructed Model on ICT accessibility and utilisation as determinants of security management*

2.11 Appraisal of the literature reviewed

This study from the review of literature has been able to establish that ICT is critical in security management. The deployment of ICT is useful for security management and its related activities. At the various arms of government, and in isolated areas, security management is of paramount importance. Hence, the significance of ICT in security management cannot be overemphasised especially in the areas of operation and intelligence gathering. The application of ICT influences the nature of organisational structure, processes, procedures, internal and external communication process as well as the size of the organisation.

Many studies have been conducted on the impacts, benefits and challenges of ICT use in policing, with few researches on accessibility and utilisation of information and communication technology in security management in Nigeria. Also, previous studies have focused largely on disaster management and peace and conflict resolution activities of the NSCDC with little emphasis on the agency's deployment of ICT for security management. This gap which has been identified, therefore, prompted the study on accessibility and utilisation of ICT by NSCDC in Southwestern Nigeria, with a view of examining its effectiveness in security management.

CHAPTER THREE

METHODOLOGY

This chapter describes the method adopted, with the aim of solving the research problem. Hence, this Chapter focuses on the research design, population of study, sample and sampling technique, research instruments, validity and reliability of research instruments, method of data collection, data collection procedure and the method of data analysis.

3.1 Research design

The survey research design of the correlational type was adopted for this study. Survey research is a quantitative and qualitative method that measures the variables of interest while considerable attention is paid to the issue of sampling. According to Wyse (2012), the survey research design is extensive as it describes the characteristics of a large population. Also, the design is regarded as being flexible and can be administered through many modes.

3.2 Population of the study

The population of this study is made up of personnel of Zone 'F' Command of the Nigeria Security and Civil Defence Corps (NSCDC). Five Commands – Oyo, Ogun, Ondo, Osun and Ekiti – are in this Zone. The preliminary study indicated that there were 10, 599 personnel in the five (5) Commands under Zone 'F' as indicated in Table 3.1. It is imperative to note that the Zone "F" represents the South-western states of Nigeria, excluding Lagos State which is the administrative headquarters of Zone 'A'.

Table 3.1: Total number of personnel in Zone 'F' of NSCDC

S/N	State Command	Population
1	Oyo	2,321
2	Ogun	3,394
3	Osun	2,031
4	Ondo	1,591
5	Ekiti	1,262
	Total	**10, 599**

Source: NSCDC Zone "F" Command Nominal Roll (2015)

3.3 Sampling technique and sample size

The study utilised the multistage sampling technique. The first stage involved the use of stratified random sampling technique to select the personnel in the departments under study based on different cadres obtainable in the service (i.e., Commandant Cadre, Superintendent Cadre, Inspectorate Cadre, and the Corps Assistant Cadre). This was followed by random selection of a proportionate sample of 10% of the personnel in each of the departments, so that each would have an equal chance of being selected.

The last stage was purposive sampling to select three departments out of the four Departments, namely Operations, Administrative, and Intelligence/Investigation Departments in each of the commands of the NSCDC.

The sample size for this study was 1,059 personnel of the Zone "F" Command of the Corps representing 10% of the total population under study as shown in Table 3.2. This number cuts across all the cadres and rank structure. The sample size is justified by Thomas (2003) who recommended at least a sample size of 500 when working on a population of 9,000.

Table 3.2: Study size

S/N	State Command	Population	Personnel selected
1	Oyo	2,321	232
2	Ogun	3,394	339
3	Osun	2,031	203
4	Ondo	1,591	159
5	Ekiti	1,262	126
	Total	**10,599**	**1,059**

3.4 Method of data collection

This study made use of both primary and secondary sources of information. The primary data was obtained through the use of questionnaire and in-depth interviews. The secondary data was obtained through published and unpublished sources of information such as textbooks, journals, newspapers, magazines, and online materials.

3.5 Instrument for data collection

The instrument for data collection for this study was a self-developed questionnaire titled Accessibility and Utilisation of Information and Communication Technology Questionnaire (AUICTQ). An in-depth interview was also conducted, while the researcher directly observed the ICT tools in Zone 'F' Command. The questionnaire was used to elicit information from respondents on Accessibility and Utilisation of Information and Communication Technology as Determinants of Security Management by the Nigeria Security and Civil Defence Corps. The questionnaire was divided into five sections as follows:

Section A: Demographic background of the respondents

Section B: Accessibility to ICT Tools

Section C: Utilisation of ICT Tools

Section D: Security management through the deployment of ICT

Section E: Constraints to security management

The questionnaire for this study was a survey instrument containing a number of well structured questions specifically to gather relevant data for the study. It included the close-ended questions. Section A of the questionnaire highlighted the demographic background of the respondents, while Section B of the questionnaire was on ICT accessibility. The respondents were expected to answer the twenty-nine (29) questions bordering on ICT accessibility. Respondents were expected to tick the options that showed their level of accessibility to these ICT tools by ticking High, Moderate, Low, and Not at all. Similarly, Section C showed the level of ICT utilisation. It was divided into two sections. Respondents were expected to identify the ICT tools that were very highly utilised (VHL), highly utilised (HU), occasionally utilised (OU), and never utilised (NU) in their daily operations, as well as the frequency of utilisation – Daily, At least once a week, Two-three times a week, More than 3 times a week, Monthly, or Never. Section D bordered on the extent by which the NSCDC ensured effective security management through the deployment of ICT. It showed how the Corps deployed ICT in various work activities to enhance effective security management. It consisted of twenty-two questions, where respondents were to tick any of these options: Strongly Agree (SA), Agree (A), Disagree (D), and Strongly Disagree (SD). Strongly Agree (SA) was rated four points, Agree (A) was rated three points, Disagree (D) was rated two points while Strongly Disagree (SD) was rated one point. Also, there was another section to indicate how the NSCDC deployed ICT in its work activities to achieve effective

security management. The respondents were to tick Yes or No to the fifteen (15) questions. In Section E, thirteen (13) options bordering on constraints to security management through the deployment of ICT were identified. Respondents were expected to tick any of these options: Strongly Agree (SA), which was rated four points, Agree (A), rated three points, Disagree (D), rated two points, and Strongly Disagree (SD) rated one point (See Appendix 1, pp. 109-118).

The interview contained eleven (11) questions, and was conducted on the Head of Departments in three out of the five state commands (Oyo, Ogun and Osun) in Zone 'F' of the NSCDC. Three informal interviews were conducted with officers of the Nigeria Security and Civil Defence Corps in the Administrative, Operations and Intelligence/Investigations departments. There was an interview guide to this effect, while the researcher also directly observed the ICT tools available for security management in NSCDC Zone 'F' Command (See Appendix 2, p. 120)

3.6 Validity and reliability of the instrument

The validity of the instrument was established by significant review of experts comprising the researcher's supervisor, two lecturers in the Faculty of Education and an expert in security management. Officers and men of the Nigeria Security and Civil Defence Corps (NSCDC), in the Operations and Disaster Management Departments, Delta State Command, Asaba were used to test the reliability of the instrument. The Delta State Command is not part of the Commands selected for the study. The instrument on Accessibility and Utilisation of Information and Communication Technology was analysed, using the Cronbach Alpha reliability test. The values that were obtained made the instrument to be considered reliable. The scales for ICT Accessibility had an alpha coefficient of 0.95; ICT Utilisation had an alpha coefficient of 0.95; while Security Management had an alpha coefficient of 0.74.

3.7 Data collection procedure

The questionnaire was administered by the researcher and five instructed assistants in each of the Commands in Zone 'F' of the NSCDC, while the in-depth interview was conducted by the researcher. Copies of the questionnaire were administered to both officers and men of the NSCDC in the Administrative, Operations and Intelligence/Investigations departments by the

researcher with the aid of the trained research assistants. The importance of their sincere response to the questions was emphasised.

For the interview, three informal interviews were conducted with officers of the Nigeria Security and Civil Defence Corps in the Administrative, Operations and Intelligence/Investigations departments. The interview was based on seeking information on the accessibility and utilisation of ICT in security management by the NSCDC, and this was used to justify the responses from the questionnaire.

The interview process started with an introduction of the researcher as a postgraduate student seeking information on the accessibility and utilisation of ICT in security management, while availing the respondent the opportunity to speak out his mind freely about issues relating to accessibility and utilisation of ICT in security management. The interview lasted for about thirty to fifty minutes on each of the respondents. The interviews were transcribed with the aid of notes taken.

3.8 Method of data analysis

The data collected were analysed using descriptive statistics such as frequencies, percentages, mean and standard deviation for demographic variables in order to provide answers to the research questions while the Pearson Product Moment Correlation (PPMC) was used to test the hypotheses at the 0.05 level of significance. The interviews were transcribed with the aid of notes taken, which enabled the researcher to listen over again in order to get an accurate result. In addition, the transcription allowed for easy thematic analysis through coding and understanding of the structure of the conversation.

3.9 Ethical consideration for the study

In the process of carrying out the study, care was taken to ensure that the rights and freedom of respondents were adequately respected and protected. None of the respondents were placed under duress, fear or favour of any sort. Informed consent, confidentiality, and integrity of respondents were respected to ensure truthful, reliable and quality information. The different ethical issues raised include the following:

a. **Plagiarism:** The study was subjected to plagiarism test at the University of Ibadan Computing Centre. The plagiarism score is in Appendix 6.

b. **Confidentiality:** In the course of the study, all information obtained from respondents were treated with confidentiality and used only for academic purposes. In addition, respondents' anonymity was guaranteed.
c. **Informed consent:** This is ethical requirement for research, and it is a voluntary agreement to participate in research. During the course of the study, the respondents (officers and men of the Nigeria Security and Civil Defence Corps in South-western Nigeria) voluntarily participated in the research by filling the questionnaire, while some of the personnel equally granted being interviewed.
d. **Falsification and fabrication of data:** The research data for this study was neither falsified nor fabricated but based on what was obtained on the field.
e. **Beneficence:** During the course of this work, the researcher had the interests of the research participants in mind.

CHAPTER FOUR
RESULTS AND DISCUSSION

4.1 Introduction

This chapter lays out and discusses the results of this study, the interpretation and the socio-demographic profiles of the study population. The study examined how ICT accessibility and utilisation - the independent variables determine security management - the dependent variable by NSCDC, Zone 'F' Command. For the study, nine research questions and three null hypotheses were generated and tested. Descriptive statistics like mean, percentages and standard deviation were used in describing the demographic characteristics of respondents, while Pearson Product Moment Correlation and Multiple regression inferential statistics were used in testing of the hypotheses at the 0.05 significance level. The result is presented in six parts as follows: Questionnaire administration and response rate, Demographic information of respondents, Answers to research questions, Presentation of hypotheses, Results from the interview checklist, and Discussion of findings.

4.2 Questionnaire administration and response rate

A sum of 1,059 copies of a structured questionnaire were distributed to officers and men of NSCDC Zone 'F' Command, and a total of 939 which represented 92% of the total number of questionnaire returned, were found usable for the analysis (Table 4.1)

Table 4.1: Questionnaire distribution and response rate

State Command	No. of Personnel	Number Distributed	Number returned
Oyo	232	232	208
Ogun	339	339	315
Osun	203	203	179
Ondo	159	159	135
Ekiti	126	126	102
Total	**1059**	**1059**	**939**

4.3. Demographic data of respondents

The section presents the breakdown of study population of this study based on, age range, gender, marital status and experience measured in years spent on the job. Table 4.2 indicates the distribution of respondents based on their gender.

Table 4.2: Gender Distribution

Gender	Frequency	Percentage
Male	590	62.8
Female	349	37.2
Total	**939**	**100.0**

While there are 590 males representing 62.8%, the females constitute 349, which is 37.2%. However, it should be noted that in military and paramilitary services, the women are also regarded as men, so the gender grouping observed here is solely for research purpose.

Table 4.3 indicates the age distribution of respondents.

Table 4.3: Age Distribution

Age (Years)	Frequency	Percentage
< 20	21	2.23
21-25	265	28.2
26-30	519	55.3
31-35	50	5.32
36-40	69	7.35
41+	15	1.60
Total	**939**	**100.0**

A majority (55.3%) of the personnel fall between the age of 26 and 30 followed by 21-25 (28.2%), and 36-40 (7.35%).

Table 4.4 shows the distribution of the respondents by years of working experience.

Table 4.4.: Distribution of respondents by number of years of work experience

Work experience (Years)	Frequency	Percentage
1-5	395	42
6-10	468	50
11-15	68	7.2
16-20	5	0.5
21-25	3	0.3
Total	**939**	**100.0**

While 468 (50%) of the personnel have spent between 6 and10 years work on the job, 395 (42%) have spent 1-5 years as work experience and the remaining 8% of the personnel accounted for 11-15 years job experience, 16-20 and 21-25 years respectively, as year of experience on the job. The reason for this is because the Corps became a full-fledged paramilitary service in 2003 and majority of the respondents were enlisted into the service as regular recruits after the agency was regularised as a statutory paramilitary outfit.

Table 4.5 shows the distribution of respondents by educational qualification.

Table 4.5: Distribution of respondents by educational qualification

Educational qualification	Frequency	Percentage
Ordinary National Diploma	177	18.8
Higher National Diploma	262	27.9
Bachelors' degree	358	38.1
Masters' degree	112	11.9
Doctor of Philosophy	3	0.3
Others	27	2.9
Total	**939**	**100.0**

While 177 (18.8%) of the personnel had an Ordinary National Diploma (OND), 262 (27.9%) had a Higher National Diploma (HND), 358 (38.1%) had a Bachelor's degree, and 112 (11.9%) had a Master's degree. The level of education of the NSCDC personnel could be rated as high.

Table 4.6 lays out the distribution of the respondents by command.

Table 4.6.: Distribution of the respondents by Command

Command	Frequency	Percentage
Ondo	135	14.4
Osun	179	19.1
Oyo	208	22.2
Ogun	315	33.5
Ekiti	102	10.9
Total	**939**	**100.0**

Findings revealed that 14.4% of the respondents were from Ondo State Command, 19.1% were from Osun State Command, 22.2% were from Oyo State Command, 33.5% were from Ogun State Command while 10.9% were from Ekiti State Command.

Table 4.7 is on the distribution of the respondents by departments.

Table 4.7: Distribution of the respondents by departments

Departments	Frequency	Percentage
Administrative	260	27.7
Operations	488	52.0
Intelligence/Investigations	191	20.3
Total	**939**	**100.0**

It can be seen that 27.7% of the respondents were staff of the Administrative Department, 52.0% were in the Operations Department, while 20.3% were in the Intelligence/Investigations Department.

Table 4.8 is on the distribution of the respondents by cadre. In the NSCDC, there are four cadres namely the Commandant cadre which is the highest cadre comprising the management staff, followed by the Superintendent cadre, as well as the Inspectorate and Corps assistant cadres respectively.

Table 4.8: Distribution of the respondents by cadre

Cadre	Frequency	Percentage
Corps Assistant	256	27.3
Inspectorate	357	38.0
Superintendent	277	29.5
Commandant	49	5.2
Total	**939**	**100.0**

It can be seen that 256 (27.3%) of the respondents were Corps Assistants, 357(38.0%) were Inspectors, 277(29.5%) were Superintendents, and 49 (5.2%) were Commandants.

Table 4.9 is on the distribution of the respondents by command and departments in Zone 'F'.

Table 4.9: Distribution of the respondents by Commands and Departments in Zone 'F'

Command	Departments			Total
	Administrative	Operations	Intelligence/Invest.	
Ondo	44 32.6%	64 47.4%	27 20.0%	135 100.0%
Osun	47 26.3%	94 52.5%	38 21.2%	179 100.0%
Oyo	59 28.4%	98 47.1%	51 24.5%	208 100.0%
Ogun	78 24.8%	182 57.8%	55 17.5%	315 100.0%
Ekiti	32 31.4%	50 49.0%	20 19.6%	102 100.0%
Total	**260** **27.7%**	**488** **52.0%**	**191** **20.3%**	**939** **100.0%**

Table 4.9 showed the distribution of the respondents by Commands and Departments in Zone 'F' of the NSCDC. 260 (27.7%) were in the Administrative Department, 488 (52.0%) were in the Operations Department, while 191(20.3%) were in the Intelligence/Investigations Department.

Table 4.10 is on the distribution of the respondents by command and cadre.

Table 4.10: Distribution of the respondents by Command and Cadre

Command	Cadre				Total
	Corps Assistant	Inspectorate	Superintendent	Commandant	
Ondo	32 23.7%	56 41.6%	40 29.6%	7 5.2%	135 100.0%
Osun	50 27.9%	67 37.4%	52 29.1%	10 5.6%	179 100.0%
Oyo	52 25.0%	81 38.9%	63 30.3%	12 5.8%	208 100.0%
Ogun	93 29.5%	118 37.5%	90 28.6%	14 4.4%	315 100.0%
Ekiti	29 28.4%	35 34.3%	32 31.4%	6 5.9%	102 100.0%
Total	**256** **27.3%**	**357** **38.0%**	**277** **29.5%**	**49** **5.2%**	**939** **100.0%**

Table 4.10 indicates the distribution of the respondents by Command and cadre in Zone 'F' of the NSCDC. While 49 (5.2%) were in the commandant cadre, 277 (29.5%) were in the superintendent cadre, 357 (38.0%) were in the inspectorate cadre, and 256 (27.3%) were in the corps assistant cadre.

4.4 Answers to research questions

Research question 1a: What is the level of accessibility to ICT by officers and men of the NSCDC Zone 'F' Command, in South-west, Nigeria?

Table 4.11a is on the level of accessibility to ICT by officers and men of the NSCDC Zone 'F' Command, in South-west, Nigeria

Table 4.11a: Level of accessibility to ICT by officers and men of the NSCDC

S/N	Items	Very High	Moderate	Low	Not at all	Mean	S.D
1	Computers	328 34.9%	139 14.8%	379 40.4%	93 9.9%	3.00	.95
2	Mobile phones	483 51.4%	111 11.8%	152 16.2%	193 20.6%	2.99	1.21
3	Laptops	369 39.3%	164 17.5%	297 29.7%	127 13.5%	2.95	1.05
4	Email	308 32.8%	146 15.5%	345 36.7%	140 14.9%	2.87	1.03
5	Internet facilities	225 24.0%	205 21.8%	357 38.0%	152 16.2%	2.70	1.01
6	Television set	267 28.4%	209 22.3%	275 29.3%	188 20.0%	2.66	1.09
7	Photocopiers	215 22.9%	221 23.5%	295 31.4%	208 22.2%	2.55	1.07
8	Video camera	198 21.1%	188 20.0%	306 32.6%	247 26.3%	2.48	1.09
9	Scanners	197 21.0%	261 27.8%	259 27.6%	222 23.6%	2.46	1.07
10	Audiotapes	130 13.8%	221 23.5%	350 37.3%	238 25.3%	2.40	1.01
11	Multimedia projector	115 12.2%	257 27.4%	297 31.6%	270 28.8%	2.27	1.01
12	Interactive radio	111 11.8%	234 24.9%	281 29.9%	313 33.3%	2.20	1.03
13	Landline phones	152 16.2%	265 28.2%	188 20.0%	334 35.6%	2.17	1.08
14	Camera pens	109 11.6%	281 29.9%	246 26.2%	303 32.3%	2.17	1.01
15	Fax machines	178 19.0%	243 25.9%	117 12.5%	401 42.7%	2.08	1.14
16	Wrist phones	86 9.2%	282 30.0%	228 24.3%	343 36.5%	2.06	.99
17	Radios (walkie-talkies)	107 11.4%	291 31.0%	171 18.2%	370 39.4%	2.02	1.02
18	Video sunglasses	68 7.2%	312 33.2%	168 17.9%	391 41.6%	1.91	.94
19	CCTV	103 11.0%	255 27.2%	143 15.2%	438 46.6%	1.91	1.02
20	Teleconferencing	72 7.7%	285 30.4%	172 18.3%	410 43.7%	1.90	.96
21	Electronic whiteboards	95 10.1%	261 27.8%	143 15.2%	440 46.9%	1.89	1.01
22	Crime maps	89 9.5%	233 24.8%	160 17.0%	457 48.7%	1.87	1.01
23	Language translators	79 8.4%	249 26.5%	137 14.6%	474 50.5%	1.81	.98

24	In-car camera systems	65 6.9%	244 26.0%	155 16.5%	475 50.6%	1.80	.95
25	Graffiti (Surveillance) cameras	57 6.1%	264 28.1%	160 17.0%	458 48.8%	1.80	.93
26	Infrared (Thermographic) cameras	61 6.5%	225 24.0%	128 13.6%	525 55.9%	1.71	.93
27	Thermal imagers	55 5.9%	241 25.7%	111 11.8%	532 56.7%	1.67	.90
28	Speed enforcement (safety) camera	70 7.5%	202 21.5%	92 9.8%	575 61.2%	1.63	.94
29	Automatic License Plate Recognition (ALPR)	61 6.5%	181 19.3%	106 11.3%	591 62.9%	1.61	.92
	GRAND MEAN = 2.19, N=939						

Findings (Table 4.11a) revealed that computers (mean =3.00) ranked highest by the mean score rating and was followed by mobile phones, (mean =2.99), laptops, (mean =2.95), among others while video sunglasses, (mean =1.91), CCTV, (mean =1.91), teleconferencing, (mean =1.90), electronic whiteboards, (mean =1.89), crime maps, (mean =1.87), and so on ranked low. However, the grand mean ($\bar{\mathbf{x}}$) of 2.19 summarises the result that NSCDC personnel have average level of accessibility to ICT. In addition, Computers ($\bar{x}$ =3.00), mobile phones ($\bar{x}$ =2.99), internet facilities ($\bar{x}$ =2.70), fax machines ($\bar{x}$ =2.08), among others were highly accessible and deployed for administrative duties most especially. Furthermore, Table 4.11b showed how NSCDC personnel have access to ICT in terms of proximity/ease of location, and ease of use.

Table 4.11b is on how NSCDC personnel have access to ICT in terms of proximity/ease of location, and ease of use.

Table 4.11b: Proximity/ease of location and ease of use of ICT by officers and men of the NSCDC

S/N	Items	SA	A	D	SD	Mean	S.D
1	NSCDC personnel have expertise in the use of ICT	183 19.5%	475 50.6%	174 18.5%	107 11.4%	2.78	.89
2	There are often stringent protocols to follow in deploying ICT	153 16.3%	493 52.5%	197 21.0%	96 10.2%	2.75	.85
3	Interpreting information produced by ICT gadget is easy	144 15.3%	476 50.7%	231 24.6%	88 9.4%	2.72	.83
4	NSCDC personnel apply for ICT when needed for any operational activity	128 13.6%	428 45.6%	259 27.6%	124 13.2%	2.60	.88
5	There is an expert in charge of maintenance and repair of ICT gadgets in each department	114 12.1%	463 49.3%	236 25.1%	126 13.4%	2.60	.87
6	Many officers have to sign before approving ICT for any operational activity	123 13.1%	389 41.4%	296 31.5%	131 14.0%	2.54	.89
7	The process of obtaining ICT for use is easy	117 12.5%	398 42.4%	250 26.6%	174 18.5%	2.49	.93
8	To retrieve data stored in ICT gadgets could be hard at times	84 8.9%	429 45.7%	292 31.1%	134 14.3%	2.49	.85
9	NSCDC personnel have free access to ICT when needed for operation in the Department	162 17.3%	280 29.8%	322 34.3%	175 18.6%	2.46	.98
10	Identifying which ICT gadget to use for which occasion often pose problem during operation	99 10.5%	359 38.2%	325 34.6%	156 16.6%	2.43	.89
11	NSCDC personnel find it difficult to operate some of the ICT gadgets during operations	94 10.0%	322 34.3%	378 40.3%	145 15.4%	2.39	.86
12	Data stored on ICT gadgets are often corrupt or infected by virus before retrieval	96 10.2%	290 30.9%	405 43.1%	148 15.8%	2.36	.87
13	Every personnel is aware of where to pick ICT gadgets	81 8.6%	314 33.4%	373 39.7%	171 18.2%	2.32	.87
14	Only senior officers are allowed to use ICT gadgets during operations	78 8.3%	183 19.5%	505 53.8%	173 18.4%	2.18	.83
	GRAND MEAN = 2.51, N=939						

Findings (Table 4.11b) revealed that NSCDC personnel have expertise in the use of ICT (mean =2.78), which was ranked highest by the mean score rating; followed by there are often stringent protocols to follow in deploying ICT, (mean =2.75); and so on, while the process of obtaining ICT for use is easy, (mean =2.49); to retrieve data stored in ICT gadgets could be hard at times, (mean =2.49); and so on, and only senior officers are allowed to use ICT gadgets during operations, (mean =2.18). However, the grand mean ($\bar{x}$) of 2.51 summarises the result that

NSCDC personnel have high level of accessibility to ICT in terms of proximity/ease of location, and ease of use.

Research question 2: What is the level of ICT utilisation by officers and men of the NSCDC Zone 'F' Command, in South-west, Nigeria?

Table 4.12 is on the level of ICT utilisation by officers and men of the NSCDC Zone 'F' Command, in South-west, Nigeria

Table 4.12: Level of ICT utilisation by officers and men of the NSCDC

S/N	Items	Very highly utilised	Highly utilised	Occasionally utilised	Never utilised	Mean	S.D
1	Computers	273 29.1%	347 37.0%	176 18.7%	143 15.2%	2.80	1.02
2	Laptops	260 27.7%	328 34.9%	189 20.1%	162 17.3%	2.73	1.05
3	Mobile phones	333 35.5%	222 23.6%	127 13.5%	257 27.4%	2.67	1.22
4	Email	239 25.5%	295 31.4%	239 25.5%	166 17.7%	2.65	1.05
5	Internet facilities	228 24.3%	292 31.1%	261 27.8%	158 16.8%	2.63	1.03
6	Television set	232 24.7%	237 25.2%	213 22.7%	257 27.4%	2.47	1.14
7	Photocopiers	177 18.8%	329 35.0%	178 19.0%	255 27.2%	2.46	1.08
8	Scanners	173 18.4%	236 25.1%	257 27.4%	273 29.1%	2.33	1.08
9	Landline phones	174 18.5%	220 23.4%	210 22.4%	335 35.7%	2.25	1.13
10	Audiotapes	113 12.0%	195 20.8%	332 35.4%	299 31.8%	2.13	1.00
11	Video camera	108 11.5%	182 19.4%	310 33.0%	339 36.1%	2.06	1.01
12	Camera pens	96 10.2%	201 21.4%	288 30.7%	354 37.7%	2.04	1.00
13	Multimedia projector	92 9.8%	147 15.7%	374 39.8%	326 34.7%	2.01	.95
14	Fax machines	143 15.2%	135 14.4%	233 24.8%	428 45.6%	1.99	1.10
15	Interactive radio	69 7.3%	153 16.3%	297 31.6%	420 44.7%	1.86	.94
16	Radios (walkie-talkies)	66	176	240	457	1.84	.96

		7.0%	18.7%	25.6%	48.7%		
17	Wrist phones	57 6.1%	129 13.7%	327 34.8%	426 45.4%	1.81	.89
18	CCTV	69 7.6%	112 11.9%	236 25.1%	522 55.6%	1.71	.94
19	Video sunglasses	51 5.4%	112 11.9%	276 29.4%	500 53.2%	1.70	.88
20	Teleconferencing	56 6.0%	93 9.9%	275 29.3%	515 54.8%	1.67	.88
21	Crime maps	48 5.1%	111 11.8%	232 24.7%	548 58.4%	1.64	.88
22	Electronic whiteboards	59 6.3%	90 9.6%	235 25.0%	555 59.1%	1.63	.90
23	Language translators	52 5.5%	108 11.5%	211 22.5%	568 60.5%	1.62	.89
24	In-car camera systems	49 5.2%	79 8.4%	223 23.7%	588 62.6%	1.56	.85
25	Thermal imagers	38 4.0%	100 10.6%	200 21.3%	601 64.0%	1.55	.84
26	Infrared (Thermographic) cameras	37 3.9%	94 10.0%	201 21.4%	607 64.6%	1.53	.83
27	Graffiti (Surveillance) cameras	36 3.8%	87 9.3%	203 21.6%	613 65.3%	1.52	.82
28	Speed enforcement (safety) camera	38 4.0%	86 9.2%	185 19.7%	630 67.1%	1.50	.82
29	Automatic License Plate Recognition (ALPR)	44 4.7%	83 8.8%	153 16.3%	659 70.2%	1.48	.84
	GRAND MEAN = 2.01, N=939						

Findings revealed that computers, (mean =2.80) ranked highest by the mean score rating and was followed by Laptops, (mean =2.73), mobile phones, (mean =2.67), email, (mean =2.65), Internet facilities, (mean =2.63), while camera pens, (mean =2.04), multimedia projector, (mean =2.01), fax machines, (mean =1.99), radios (walkie-talkies), (mean =1.84), wrist phones, (mean =1.81), Closed Circuit Television, (mean =1.71), spy video sunglasses, (mean =1.70), crime maps (mean = 1.64), electronic whiteboards (mean =1.63), infrared cameras (mean =1.53), and surveillance cameras (mean =1.52) ranked low, despite the fact that these gadgets are crucial for operations and intelligence gathering/investigations. Therefore, the grand mean of 2.01 showed that the level of ICT utilisation by NSCDC personnel was on the average.

Research question 3: What ICT are deployed for security operations by the NSCDC?

Table 4.13 is on the ICT deployed for security operations by personnel of NSCDC.

Table 4.13: ICT deployed for security operations by personnel of NSCDC

S/N	Items	Daily	At least once a week	2-3 times a week	> 3 times a week	Monthly	Never	Mean	S.D
1	Laptops	438 46.6%	103 11.0%	57 6.1%	70 7.5%	69 7.3%	202 21.5%	4.18	2.06
2	Internet facilities	400 42.6%	89 9.5%	51 5.4%	95 10.1%	99 10.5%	205 21.8%	3.98	2.07
3	Computers	366 39.0%	72 7.7%	67 7.1%	139 14.8%	81 8.6%	214 22.8%	3.85	2.04
4	Mobile phones	439 46.8%	42 4.5%	52 5.5%	45 4.8%	71 7.6%	290 30.9%	3.85	2.04
5	Email	314 33.4%	112 11.9%	82 8.7%	82 8.7%	132 14.1%	217 23.1%	3.73	2.03
6	Photocopiers	265 28.2%	175 18.6%	74 7.9%	97 10.3%	77 8.2%	251 26.7%	3.68	2.01
7	Television set	313 33.3%	50 5.3%	69 7.3%	118 12.6%	77 8.2%	312 33.2%	3.43	2.12
8	Scanners	180 19.2%	100 10.6%	140 14.9%	88 9.4%	106 11.3%	325 34.6%	3.13	1.95
9	Landline phones	194 20.7%	129 13.7%	80 8.5%	75 8.0%	77 8.2%	384 40.9%	3.08	2.05
10	Video camera	136 14.5%	97 10.3%	73 7.8%	130 13.8%	121 12.9%	382 40.7%	2.78	1.87
11	Audiotapes	117 12.5%	93 9.9%	70 7.5%	114 12.1%	132 14.1%	413 44.0%	2.63	1.83
12	Camera pens	119 12.7%	79 8.4%	76 8.1%	127 13.5%	108 11.5%	430 45.8%	2.60	1.83
13	Fax machines	156 16.6%	59 6.3%	44 4.7%	58 6.2%	150 16.0%	472 50.3%	2.51	1.93
14	Multimedia projector	63 6.7%	90 9.6%	88 9.4%	56 6.0%	231 24.6%	411 43.8%	2.37	1.64
15	Wrist phones	86 9.2%	67 7.1%	58 6.2%	154 16.4%	92 9.8%	482 51.3%	2.35	1.71
16	Interactive radio	80 8.5%	80 8.5%	74 7.9%	75 8.0%	151 16.1%	479 51.0%	2.32	1.71
17	Radios (walkie-talkies)	104 11.1%	53 5.6%	52 5.5%	66 7.0%	165 17.6%	499 53.1%	2.26	1.74
18	Video sunglasses	80 8.5%	54 5.8%	52 5.5%	132 14.1%	102 10.9%	519 55.3%	2.21	1.66
19	CCTV	79 8.4%	57 6.1%	39 4.2%	101 10.8%	88 9.4%	575 61.2%	2.10	1.66
20	Teleconferencing	45 4.8%	84 8.9%	60 6.4%	52 5.5%	141 15.0%	557 59.3%	2.05	1.57
21	Electronic whiteboards	61 6.5%	53 5.6%	43 4.6%	79 8.4%	166 17.7%	537 57.2%	2.03	1.55
22	In-car camera systems	58 6.2%	42 4.5%	30 3.2%	133 14.2%	77 8.2%	599 63.8%	1.95	1.52
23	Language translators	66 7.0%	43 4.6%	44 4.7%	100 10.6%	97 10.3%	589 62.7%	1.99	1.57
24	Crime maps	65	46	41	72	156	559	1.99	1.55

		6.9%	4.9%	4.4%	7.7%	16.6%	59.5%		
25	Graffiti (Surveillance) cameras	53 5.6%	41 4.4%	33 3.5%	104 11.1%	94 10.0%	614 65.4%	1.88	1.4
26	Thermal imagers	55 5.9%	44 4.7%	38 4.0%	54 5.8%	138 14.7%	610 65.0%	1.86	1.49
27	Infrared (Thermographic) cameras	59 6.3%	36 3.8%	24 2.6%	97 10.3%	88 9.4%	635 67.6%	1.84	1.49
28	Speed enforcement (safety) camera	46 4.9%	41 4.4%	29 3.1%	93 9.9%	66 7.0%	664 70.7%	1.78	1.44
29	Automatic License Plate Recognition (ALPR)	47 5.0%	31 3.3%	24 2.6%	95 10.1%	58 6.2%	684 72.8%	1.72	1.40
Grand Mean = 2.63, N=939									

Findings (Table 4.13) revealed that laptops, (mean =4.18) ranked highest by the mean score rating and was followed by Internet facilities, (mean =3.98), computers, (mean =3.85), mobile phones, (mean =3.85), while video camera, (mean =2.78), audiotapes, (mean =2.63), camera pens, (mean =2.60), wrist phones, (mean =2.35), video sunglasses, (mean =2.21), CCTV, (mean =2.10), camera (mean = 1.78) among others ranked low. Therefore, the grand mean of 2.63 showed that the frequency of ICT utilisation by NSCDC personnel was low. In addition, Table 4.13 showed that mobile phones rated (46.8%), laptops (46.6%), Internet facilities (42.6%), computers (39.0%), and email (33.4%). It can be deduced from this that mobile phones, laptops, Internet facilities and computers are the most frequently deployed ICT for security operations by the NSCDC.

Research question 4: To what extent do the Nigeria Security and Civil Defence Corps ensure effective security management through the deployment of ICT?

Table 4.14 is on the extent by which Nigeria Security and Civil Defence Corps, Zone 'F' Command ensure effective security management through the deployment of ICT.

Table 4.14: Security management through the deployment of ICT by the NSCDC

S/N	Items	SA	A	D	SD	Mean	S.D
1	Data of officers and men can easily be compiled and processed for management purposes through the use of ICTs	317 33.8%	443 47.2%	71 7.6%	108 11.5%	3.03	.93
2	ICT tools are essential in maintenance of peace and order	267 28.4%	421 44.8%	143 15.2%	108 11.5%	2.90	.94
3	Issues with delayed and unpaid salaries have greatly reduced as a result of ICT infrastructure of NSCDC	207 22.0%	468 49.8%	140 14.9%	124 13.2%	2.81	.93
4	Arrest of suspects can be enhanced by deploying ICTs	196 20.9%	475 50.6%	152 16.2%	116 12.4%	2.80	.91
5	Signals and other security information are better transmitted through ICTs than other conventional means	211 22.5%	476 50.7%	92 9.8%	160 17.0%	2.79	.98
6	ICT has made security report better protected from unauthorized access	220 23.4%	422 44.9%	152 16.2%	145 15.4%	2.76	.98
7	Taking of statements of suspects and witnesses have become easier with the use of ICTs	190 20.2%	455 48.5%	173 18.4%	121 12.9%	2.76	.92
8	ICT tools are easily deployed to prevent escape from custody	168 17.9%	453 48.2%	189 20.1%	129 13.%	2.70	.92
9	ICT tools will greatly enhance admissibility of evidence during prosecutions	188 20.0%	429 45.7%	176 18.7%	146 15.5%	2.70	.96
10	During searches and rescue operations, officers and men are mobilized with ICT gadget(s) required for the operation	193 20.6%	375 39.9%	218 23.2%	153 16.3%	2.65	.98
11	Posting of officers to beats has been made easier through ICTs	175 18.6%	421 44.8%	147 15.7%	196 20.9%	2.61	1.01
12	The Corps uses ICT tools in maintaining 24 hours surveillance over infrastructures, sites and projects for the Federal, State and Local Government	197 21.0%	319 34.0%	283 30.1%	140 14.9%	2.61	.98
13	NSCDC anti-vandalism drive has been better enhanced by deployment of ICTs	165 17.6%	369 39.3%	265 28.2%	140 14.9%	2.60	.94
14	In cases of riots and civil disorders, ICT gadgets and tools are not usually deployed by NSCDC personnel	163 17.4%	323 34.4%	301 32.1%	152 16.2%	2.53	96
15	The war against terror can only be won by the use of ICTs by NSCDC personnel	134 14.3%	386 41.1%	256 27.3%	163 17.4%	2.52	.94
16	ICT tools have not contributed to efficient monitoring of Private Guard Companies across the state	106 11.3%	340 36.2%	317 33.8%	176 18.7%	2.40	.92
17	As a matter of policy, the Corps deploys ICT tools to a large extent in its various operational activities	102 10.9%	342 36.4%	311 33.1%	184 19.6%	2.39	.92

18	In detecting and demarcating danger areas, ICT tools are not required by the NSCDC	140 14.9%	262 27.9%	324 34.5%	213 22.7%	2.35	.99
19	To safeguard critical national assets and infrastructures (CNAIs), ICT tools are not required	152 16.2%	224 23.9%	304 32.4%	259 27.6%	2.29	1.04
20	ICT tools are not required to forestall criminal activities	97 10.3%	285 30.4%	332 35.4%	225 24.0%	2.27	.94
21	ICT is not required in accurate record keeping of exhibits	67 7.1%	271 28.9%	312 33.2%	289 30.8%	2.12	.93
22	In disseminating intelligence, ICT is not required	58 6.2%	226 24.1%	325 34.6%	330 35.1%	2.01	.92
	Grand Mean = 2.57, N=939						

Findings from the study revealed that data of officers and men can easily be compiled and processed for management purposes through the use of ICT, (mean =3.03) which ranked highest by the mean score rating and was followed by ICT tools are essential in maintenance of peace and order, (mean =2.90), issues with delayed and unpaid salaries have greatly reduced as a result of ICT infrastructure of NSCDC, (mean =2.81), arrest of suspects can be enhanced by deploying ICT, (mean =2.80) etc. However, the grand mean of 2.57 showed that the NSCDC ensured effective security management through the deployment of ICT.

Research question 5: What are the constraints to effective security management through the deployment of ICT by the NSCDC, Zone 'F' Command?

Table 4.15 showed the constraints to effective security management through the deployment of ICT by the NSCDC, Zone 'F' Command.

Table 4.15: Constraints to effective security management through the deployment of ICT

S/N	Items	SA	A	D	SD	Mean	S.D
1	Inadequate funding to provide ICT equipment	234 24.9%	465 49.5%	151 16.1%	89 9.5%	2.90	.88
2	Erratic power supply	267 28.4%	380 40.5%	178 19.0%	114 12.1%	2.85	.97
3	Organizational factors (restrictions)	174 18.5%	505 53.8%	181 19.3%	79 8.4%	2.82	.83
4	High cost of ICT tools	163 17.4%	440 46.9%	225 24.0%	111 11.8%	2.70	.89
5	Personal factors (perceived benefits)	153 16.3%	479 51.0%	174 18.5%	133 14.2%	2.69	.91
6	Lack of access to the ICT gadgets	153 16.3%	453 48.2%	222 23.6%	111 11.8%	2.69	.88
7	Lack of training of officers and men of the Corps by the management of Corps	169 18.0%	367 39.1%	245 26.1%	158 16.8%	2.58	.97
8	Complexity of ICT factors (ease of use)	102 10.9%	408 43.5%	301 32.1%	128 13.6%	2.52	.86
9	Not ICT-complaint	102 10.9%	381 40.6%	322 34.3%	134 14.3%	2.48	.87
10	Lack of expertise on the use of ICT tools	121 12.9%	317 33.8%	336 35.8%	165 17.6%	2.42	.92
11	Inability of officers to operate ICT gadgets	105 11.2%	290 30.9%	382 40.7%	162 17.3%	2.36	.89
12	Low level of education	100 10.6%	299 31.8%	367 39.1%	173 18.4%	2.35	.90
13	Lack of interest among officers and men of the Corps to adopt the use of computers and other modern information technology gadgets for operational efficiency	104 11.1%	271 28.9%	397 42.3%	167 17.8%	2.33	.89
	Grand Mean = 2.59, N=939						

Some of the constraints to effective security management as indicated in Table 4.15 include the following: inadequate funding to provide ICT equipment, (mean =2.90) ranked highest by the mean score rating and was followed by erratic power supply, (mean =2.85), organizational factors (restrictions), (mean =2.82), high cost of ICT tools, (mean =2.70), personal factors (perceived benefits), (mean =2.69), lack of access to ICT gadgets, (mean =2.69), lack of training of officers and men of the Corps by the management of Corps, (mean =2.58), complexity of ICT factors (ease of use), (mean =2.52), not ICT-complaint, (mean =2.48), lack of expertise on the use of ICT tools, (mean =2.42), among others.

Research question 6: What is the relative contribution of ICT accessibility and utilisation on security management by the NSCDC, Zone 'F' Command, in South-West, Nigeria?

Table 4.16 revealed the relative contribution of each of the independent variables (accessibility to ICT and utilisation of ICT) to the dependent variable, expressed as beta weights, *viz*: *Accessibility to ICT* (β = .385, P <.05), significant relationship existed; and *Utilisation of ICT* (β = .373, P <.05), significant relationship existed.

Table 4.16: Relative contribution of the independent variables (accessibility and utilisation of ICT) on security management by the Nigeria Security and Civil Defence Corps

Model	Unstandardised Coefficient		Stand. Coefficient	T	Sig.
	B	Std. Error	Beta Contribution		
(Constant)	16.226	1.725		9.407	.000
Accessibility to ICT	.733	.053	.385	13.777	.000
Utilisation of ICT	.254	.019	.373	13.350	.000

From the study, findings (Table 4.16) revealed that accessibility to ICT and utilisation of ICT ensured security management. Accessibility to ICT had the highest relative contribution to security management (β = .385, P <.05), followed by utilisation of ICT (β = .373, P <.05).

Research question 7: What is the joint contribution of ICT accessibility and utilisation on security management by the NSCDC, Zone 'F' Command, in South-West, Nigeria?

Table 4.17 showed the joint contribution of accessibility and utilisation of ICT on security management by the Nigeria Security and Civil Defence Corps.

Table 4.17: Joint contribution of accessibility and utilisation of ICT on security management by the Nigeria Security and Civil Defence Corps

r	R Square		Adjusted R Square	Std. Error of the Estimate	
.634	.414		.413	9.9226	
A N O V A					
Model	Sum of Squares	DF	Mean Square	F	Sig.	Remark
Regression	65122.207	2	32561.104	330.711	.000	Sig.
Residual	92156.626	936	98.458			
Total	157278.83	938				

The study as reflected in Table 4.17 shows that the joint contribution of the independent variables (accessibility and utilisation of ICT) on the dependent variable (security management) by the Nigeria Security and Civil Defence Corps was significant. The table also showed a coefficient of multiple correlation (r = .634 and a multiple R^2 of .414).

Research question 8: What is the relationship between ICT accessibility and security management by the NSCDC, Zone 'F' Command, in South-West, Nigeria?

Table 4.18 showed the relationship between ICT accessibility and security management by the Nigeria Security and Civil Defence Corps.

Table 4.18: Pearson Product Moment Correlation (PPMC) showing the relationship between ICT Accessibility and Security management by NSCDC

Variables	**Mean**	**Std. Dev.**	**n**	**R**	**p-value**	**Remarks**
Security Management by NSCDC	56.6028	12.9489	939	.550*	.000	Sig.
ICT Accessibility	35.0958	6.7989				

* Sig. at 0.05 level

The study as reflected in Table 4.18 shows that there is a significant relationship between ICT accessibility and security management by NSCDC (r = .550, n= 939, p< .05). It was observed from the result that accessibility to ICT enhanced security management by NSCDC.

Research question 9: What is the relationship between ICT utilisation and security management by the NSCDC, Zone 'F' Command, in South-West, Nigeria?

Table 4.19 showed the relationship between ICT utilisation and security management by the Nigeria Security and Civil Defence Corps.

Table 4.19: Pearson Product Moment Correlation (PPMC) showing the relationship between ICT Utilisation and Security management by NSCDC

Variables	Mean	Std. Dev.	n	R	p-value	Remarks
ICT Utilisation	57.8275	19.0275	939	.543*	.000	Sig.
Security Management by NSCDC	56.6028	12.9489				

* Sig. at 0.05 level

The study as reflected in Table 4.19 shows that there is a significant relationship between ICT utilisation and security management by NSCDC (r = .550, n= 939, p<.05). It was observed from the result that utilisation of ICT enhanced security management by NSCDC.

4.5 Presentation of hypotheses

4.5.1 Hypothesis 1: There is no significant relationship between ICT accessibility and security management by NSCDC

Table 4.20 showed the relationship between ICT accessibility and security management by NSCDC.

Table 4.20: Relationship between ICT accessibility and security management by NSCDC

Variable	Mean	Std. Dev.	N	r	P	Remark
ICT Accessibility	56.6028	12.9489	939	.550*	.000	Sig.
Security Management by NSCDC	35.0958	6.7989				

- Sig. at .05 level

Findings revealed that there was a positive significant relationship between ICT accessibility and security management by NSCDC, the coefficient of correlation showed that 'r' equals .550, and the level of significance was less than .05 ($r = .550^*$, $N= 939$, $P < .05$). It was observed from the result that accessibility to ICT enhanced security management by NSCDC. Therefore, the null hypothesis was rejected.

4.5.2 Hypothesis 2: There is no significant relationship between ICT utilisation and security management by NSCDC

Table 4.21 showed the relationship between ICT utilisation and security management by NSCDC

Table 4.21: Relationship between ICT utilisation and security management by NSCDC

Variable	Mean	Std. Dev.	N	r	P	Remark
ICT Utilisation	57.8275	19.0276	939	.543*	.000	Sig.
Security Management by NSCDC	56.6028	12.9489				

- Sig. at .05 level

It is shown in Table 4.21 that there was a positive significant relationship between ICT utilisation and security management by NSCDC, the coefficient of correlation showed that 'r' equals .543, and the level of significance was less than .05 (r = .543*, N= 939, P < .05). From the result, it was observed that ICT utilisation enhanced effective security management by NSCDC. Therefore, the null hypothesis was rejected.

4.5.3 Hypothesis 3: Accessibility and utilisation of ICT will not significantly determine security management by the Nigeria Security and Civil Defence Corps

Table 4.22 showed the joint contribution of accessibility and utilisation of ICT on security management by the Nigeria Security and Civil Defence Corps

Table 4.22: Joint contribution of accessibility and utilisation of ICT on security management by the Nigeria Security and Civil Defence Corps

r	R Square		Adjusted R Square	Std. Error of the Estimate	
.634	.414		.413	9.9226	
A N O V A					
Model	Sum of Squares	DF	Mean Square	F	Sig.	Remark
Regression	65122.207	2	32561.104	330.711	.000	Sig.
Residual	92156.626	936	98.458			
Total	157278.83	938				

The study as reflected in Table 4.22 shows that the joint contribution of the independent variables (accessibility and utilisation of ICT) on security management by the Nigeria Security and Civil Defence Corps was significant. The table also showed a coefficient of multiple correlation (r = .634 and a multiple R^2 of .414). This means that 41.3% of the variance was accounted for by the predictor variables when taken together. The significance of the composite contribution was tested at P < .05. The table also showed that the analysis of variance (ANOVA) for the regression yielded an F-ratio of 330.711 (significant at the 0.05 level). This implied that the joint contribution of the independent variables to the dependent variable was significant and that other variables not included in this model may have accounted for the remaining variance.

4.6 Results from the interview checklist

Interview was conducted in three out of the five states - Oyo, Ogun and Osun – under Zone 'F' Command of the NSCDC. Nine (9) Heads of Departments in Administration, Operations and Intelligence/Investigations, three in each of the state commands were interviewed. The following findings were revealed during the course of the interview.

Though the NSCDC has an ICT policy framework for its operations in the National Headquarters of the Corps, copies of the framework are not made available in the State Commands. According to the Head of Administration, Oyo State Command:

> *Information and communication technology is important in security management as it describes the inflow and outflow of information. I know the Corps has an ICT policy framework at the National Headquarters but the copy is not available in Oyo State Command.*

However, the Head of Intelligence/Investigations in Ogun State Command and the Head of Intelligence/Investigations in Osun State Command were of contrary opinion as regards the ICT policy framework of the NSCDC. They stated that they were not aware of any ICT policy framework.

It was also revealed that the nature of the security operation determines the ICT to deploy, while some of the ICT utilised during these operations include: mobile phones, wrist phones, button clips, recorders, metal detectors (during NECO/SSC/JAMB examinations), computers, laptops and modems. The Head of Intelligence/Investigations Department, Oyo State Command in his words stated that:

> *As regards an ICT policy framework, I know there is one but I have not seen the document. We deploy ICT during operations, however, the nature of the operation would determine the ICT gadget to use, and the type of operation determines the use of ICT tools. In intelligence department, we use recorders, wristwatches, button clips, among others.*

In agreement with the above, the Head of Intelligence/Investigations, Osun State Command identified the following ICT deployed during operations:

> *During operations, we deploy recording gadgets such as pen, wristwatch, tie, key holder, sunglasses, handset, and hand scanner. These gadgets have helped a great deal in information gathering, as intelligence is all about information gathering.*

While the Head of Administration, Oyo State Command identified that the Administrative Department utilised "computers, laptops, mobile phones, modems, among others". In addition, it was revealed that the personnel do not have to apply for the use of ICT during operations. Once there is an incident call or any operational duty, there is already a directive on what to do especially in the Administration and Intelligence/Investigations Departments; while on the contrary, the Operations Department claimed that they have to apply for any of the gadgets they want to use during operations, while their mobile phones have been very helpful in recording incidences.

All the interviewees responded that ICT has assisted the Corps to a very large extent in cases of arrests, prosecution and intelligence gathering, as well as in administrative duties. However, in the area of a training programme specially designed for deployment of ICT for officers and men of the Corps, they all agreed that there was no form of training as such whether in handling, maintenance or use.

In conclusion, the constraints encountered while accessing and utilising ICT include: power failure, inadequate training especially on the use of ICT, inadequate access to some of the gadgets, electronic failure, and fragility of some of the gadgets.

4.7 Discussion of the findings

This study examined information and communication technology accessibility and utilisation by the Nigeria Security and Civil Defence Corps in South-western Nigeria. The demographic information showed that there were 590 males in the NSCDC, Zone 'F' command representing 62.8%, while the females were 349 (37.2%). However, it should be noted that in

military and paramilitary services, the women are also regarded as men, so the gender grouping observed here is solely for research purpose (Table 4.2) Majority of the personnel fall within the age range of 26-30 (55.3%) followed by 21-25 (28.2%), and 36-40 (7.35%).

Findings on work experience showed that while 468 (50%) of the personnel had 6-10 years work experience, 395 (42%) had 1-5 years work experience and the remaining 8% of the personnel accounted for 11-15 years work experience, 16-20 and 21-25 years work experience. The reason for this was because the Corps became a full-fledged paramilitary service in 2003 and majority of the respondents were enlisted into the service as regular recruits after the agency was regularised as a statutory paramilitary outfit.

On the educational level of NSCDC personnel, while 177 (18.8%) of the personnel had an Ordinary National Diploma (OND), 262 (27.9%) had a Higher National Diploma (HND), 358 (38.1%) had a Bachelor's degree, and 112 (11.9%) had a Master's degree. The level of education of the NSCDC personnel could be rated as high.

The study found out that 14.4% of the respondents were from Ondo State Command, 19.1% were from Osun State Command, 22.2% were from Oyo State Command, 33.5% were from Ogun State Command while 10.9% were from Ekiti State Command. Table 4.7 showed that 27.7% of the respondents were staff of the Administrative Department, 52.0% were in the Operations Department, while 20.3% were in the Intelligence/Investigations Department. The Operations Department carries out core security duties and this accounted for more personnel in the department.

In the NSCDC, there are four cadres namely the Commandant cadre which is the highest cadre comprising the management staff, followed by the Superintendent cadre, and the Inspectorate and Corps Assistant cadres respectively. While the Commandant and the Superintendent cadres are referred to as officers, the Inspectorate and the Corps Assistant cadres are referred to as men. Table 4.8 showed that 256 (27.3%) of the respondents were Corps Assistants, 357(38.0%) were Inspectors, 277(29.5%) were Superintendents, and 49 (5.2%) were Commandants.

Table 4.9 showed the distribution of the respondents by Commands and Departments in Zone 'F' of the NSCDC. 260 (27.7%) were in the Administrative Department, 488 (52.0%) were in the Operations Department, while 191(20.3%) were in the Intelligence/Investigations Department.

Table 4.10 showed the distribution of the respondents by command and cadre in Zone 'F' of the NSCDC. While 49 (5.2%) were in the commandant cadre, 277 (29.5%) were in the superintendent cadre, 357 (38.0%) were in the inspectorate cadre, and 256 (27.3%) were in the corps assistant cadre. The commandant cadre constitute those in the management level; they give directives to the other cadres. The inspectorate and the corps assistant cadres are majorly on field operations, while being supervised by the superintendent cadre.

Research question one assessed the level of ICT accessibility by officers and men of the NSCDC. As indicated in Table 4.11a, the findings showed that NSCDC personnel have average level of accessibility to ICT. While Table 4.11b showed that NSCDC personnel have high level of accessibility to ICT in terms of proximity/ease of location and ease of use. Majority of the respondents claimed very high access to mobile phones, computers, laptops, and email, while others such as scanners (metal detectors), camera pens, wrist phones, radio, video sunglasses, CCTVs, and crime maps were rated low and not available. Even though the level of accessibility was rated average, accessibility to sophisticated ICT gadgets essential in security management such as the CCTV, camera pens, wrist phones, walkie-talkie, crime maps, graffiti cameras, and so on was relatively low. From the interview, the use of mobile phones cannot be overemphasised. Mobile phones have been very helpful in recording incidences.

Access to ICT is the effectiveness and efficiency to which security agents have the right to use ICT coupled with perspective and technical skills in its application in their day to day affairs to safeguard the populace. These findings agreed with the study of Were *et al*., (2013) and Kumar's (2012) study that officers lack adequate access to ICT in their daily operations. From this study, it has been revealed that officers and men of the NSCDC lack adequate access to essential ICT gadgets which would have enhanced their security operations.

Research question two examined the level of ICT utilisation by officers and men of the NSCDC. Computers ranked highest followed by laptops, mobile phones, email, Internet facilities, while camera pens, multimedia projector, fax machines, radios (walkie-talkies), wrist phones, CCTV, video sunglasses, among others ranked low. In addition, the grand mean of 2.01 in Table 4.12 showed that the level of ICT utilisation by NSCDC personnel was on the average, while the frequency of utilisation was found to be low (Table 4.13). This finding corroborated that of COMPOSITE Project (2011), Ikhazuagbe and Kasimu (2012), and Kumar (2012). However, from Ikhazuagbe and Kasimu's study, it was evident that the level of ICT utilisation

by security agencies in Nigeria was very low and it is in agreement with this study where the frequency of ICT utilisation by NSCDC personnel was low.

Research question three identified ICT deployed for security operations by the NSCDC. Findings (Table 4.13) revealed that the ICT deployed by NSCDC personnel for security operations include the following: mobile phones rated (46.8%), laptops (46.6%), Internet facilities (42.6%), computers (39.0%), and email (33.4%). It can be deduced from this that mobile phones, laptops, Internet facilities and computers were the most frequently ICT deployed for security operations by the NSCDC. This finding is in agreement with that of Rowley (2013), Busagala and Ringo (2013), and COMPOSITE Project (2011), that by introducing computers or mobile devices in police cars, officers gain access to police databases. From the finding of this study, the use of mobile phones for security operations by the NSCDC cannot be overemphasised.

Research question four examined the extent to which the Nigeria Security and Civil Defence Corps ensure effective security management through the deployment of ICT. Findings (Table 4.14) revealed that data of officers and men can easily be compiled and processed for management purposes through the use of ICT, (mean =3.03) which ranked highest by the mean score rating and was followed by ICT tools are essential in maintenance of peace and order, (mean =2.90), issues with delayed and unpaid salaries have greatly reduced as a result of ICT infrastructure of NSCDC, (mean =2.81), arrest of suspects can be enhanced by deploying ICT, (mean =2.80), etc. This finding also corroborates the interview where the respondents agreed that ICT has assisted the Corps to a very large extent in cases of arrests, prosecution and intelligence gathering, as well as in administrative duties.

The finding is in agreement with that of Sethi (2013) that technology improves police effectiveness and efficiency in controlling crime, and it enhances their professional status and organisational legitimacy. In addition, Otter, in Greater London Authority (2013) submits that ICT is a vital resource for security operatives. He notes that security work relies heavily on the use of ICT, starting from registering of crimes to enhancing robust relationship with the public through adequate communication. According to Her Majesty's Inspectorate of Constabulary in Busagala and Ringo (2013), ICT optimises communications by improving the capability of the law enforcers to reach large number of people efficiently and effectively. Investigations can be

done faster with reliable findings of crime incidents. E-policing results into improved crime detection, analysis and investigation.

For effective security management, ICT plays an important role. This study found out that ICT has assisted the NSCDC in the departments of administration, operations, and intelligence/investigations, in the area of arrests, prosecution, and intelligence gathering/investigations, among others.

Research question five identified constraints to effective security management through the deployment of ICT by the NSCDC. Some of the constraints as indicated in Table 4.15 include the following: inadequate funding to provide ICT equipment, erratic power supply, organizational factors (restrictions), high cost of ICT tools, personal factors (perceived benefits), lack of access to the ICT gadgets, lack of training of officers and men of the Corps by the management of Corps, among others. This finding is in line with that of Busagala and Ringo (2013).

In corroboration, Adegoke *et al.*, (2015) submit that the Nigerian government had spent millions of dollar annually, to procure weaponry and other logistics aimed at combating heinous crimes, but this has not yielded the desired result. Crimes that could have been nipped in the bud go completely undetected because of lack of effective surveillance and tracking tools. High profile murder cases have remained unresolved because there are no reliable database, surveillance, tracking and forensic tools that could aid in the investigations.

From the interview, the respondents identified the following constraints: power failure, lack of training especially on the use of ICT, inadequate access to some of the gadgets, electronic failure, and fragility of some of the gadgets.

Research question six examined the relative contribution of ICT accessibility and utilisation on security management by the NSCDC, Zone 'F' Command, in South-West, Nigeria. Findings showed that accessibility to ICT and utilisation of ICT ensured security management. Accessibility to ICT had the highest relative contribution to security management ($\beta = .385$, $P < .05$), followed by utilisation of ICT ($\beta = .373$, $P < .05$).

Research question seven examined the joint contribution of ICT accessibility and utilisation on security management by the NSCDC, Zone 'F' Command, in South-West, Nigeria. Findings revealed that there was a joint significant contribution of ICT accessibility and utilisation on security management.

Research question eight examined the relationship between ICT accessibility and security management by the NSCDC, Zone 'F' Command, in South-West, Nigeria. Findings revealed that there was a positive significant relationship between ICT accessibility and security management by the NSCDC.

Research question nine examined the relationship between ICT utilisation and security management by the NSCDC, Zone 'F' Command, in South-West, Nigeria. Findings revealed that there was a positive significant relationship between ICT utilisation and security management by the NSCDC.

The results of the hypotheses showed that the three null hypotheses formulated were rejected indicating that there was a strong positive relationship between accessibility and utilisation of ICT and security management by the NSCDC. In other words, accessibility to ICT enhanced security management by NSCDC. Also, ICT utilisation in the study enhanced effective security management by NSCDC. In addition, there was a joint significant effect of ICT accessibility and utilisation on security management. The implication of this from the study showed that inadequate access and underutilisation of ICT could adversely affect security management.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary of the findings of this study, conclusion, recommendations, implications of the study, contribution to knowledge, and suggestions for further research.

5.2 Summary of findings

The following are the major findings of the study:

1. The NSCDC personnel had average level of accessibility to ICT and in terms of proximity/ease of location, and ease of use, the NSCDC personnel had high level of accessibility. However, accessibility to ICT gadgets required in core security duties such as the CCTV, surveillance camera, walkie-talkie, camera pen, spy video sunglasses, among others were found to be low and not available, in some instances.
2. The level of ICT utilisation by NSCDC personnel was low especially as regards ICT gadgets required during operations and intelligence gathering such as walkie-talkie, wrist phones, Closed Circuit Television, spy video sunglasses, crime maps, electronic whiteboards, infrared cameras, and surveillance cameras.
3. Mobile phones, computers and laptops were the most frequently deployed ICT for security operations by the NSCDC, Zone 'F' command.
4. The study revealed that the NSCDC ensured effective security management by deploying ICT in their daily operations. ICT has assisted the Corps in cases of arrests, prosecution, intelligence gathering, and administrative duties.
5. The constraints to security management through the deployment of ICT included: inadequate funding to provide ICT equipment, erratic power supply, organizational factors, high cost of ICT tools, lack of access to the ICT gadgets, lack of training of officers and men of the Corps by the management of Corps, complexity of ICT factors, lack of expertise on the use of ICT tools, among others.

6. Accessibility to ICT and utilisation of ICT ensured security management. Accessibility to ICT had the highest relative contribution to security management followed by utilisation of ICT.
7. There was a positive significant relationship between ICT accessibility and security management by NSCDC, Zone 'F' Command.
8. There was a positive significant relationship between ICT utilisation and security management by NSCDC, Zone 'F' Command.
9. There was a joint significant contribution of ICT accessibility and utilisation on security management by the NSCDC, Zone 'F' Command.

5.3 Conclusion

This study has shown that accessibility and utilisation of ICT have significant and positive relationship with security management by the Nigeria Security and Civil Defence Corps, Zone 'F' Command, South-west, Nigeria. In other words, access to, and utilisation of ICT by the personnel of NSCDC would enhance security management. The study also revealed that the nature of the security operation determines the ICT to deploy. ICT has assisted the Corps to a very large extent in cases of arrests, prosecution and intelligence gathering, as well as in administrative duties.

5.4 Recommendations

Based on the findings of the study, the following recommendations are hereby made to enhance security management in the Nigeria Security and Civil Defence Corps:

1. Security agencies require sufficient resources for them to perform their duties effectively. Without adequate resources, it would be difficult for security agencies to communicate, and respond to distress calls from citizens. Officers and men of security agencies in general require modern technology (ICT) and training on the use of the same. This study revealed inadequate funding as one of the constraints to effective security management. As a result, the management of NSCDC should provide adequate funds to procure high quality technological tools that comply with global law enforcement standards for effective performance.

2. The study revealed that the NSCDC does not have an ICT policy framework, as such; an ICT policy framework should be developed by the NSCDC in line with national ICT policies, such as policies on procurement, use and maintenance of ICT equipment. And if there is a policy framework already, it should be made available in all NSCDC formations across the country.
3. Most of security-related activities require the processing of information, therefore, the management of NSCDC should deploy ICT so as to enhance their capability to acquire, store and process huge volumes of security information. This will no doubt boost service delivery; enhance professional status and organizational legitimacy.
4. The study identified lack of training by the management of the Corps as one of the constraints to effective security management. Hence, there should be periodical training of NSCDC personnel by the management on a regular basis on the adoption and use of ICT in security operations to curb crimes and criminality.
5. The study revealed inadequate access to ICT gadgets deployed for core security operations, as well as utilisation of same; as a result, the management of the Corps should allow the personnel of the Corps to have adequate access to ICT, and utilisation of same to improve operational efficiency and service delivery, this would enhance security management.
6. In security agencies, information gathered are often restricted, as a result, there is need for librarians to assist security agencies in developing database for storage and retrieval of information in a format that will prevent espionage and loss.

5.5 Implications of the study

Information and communication technology accessibility and utilisation is essential in security management in Nigeria. The results from the findings of this research have raised some implications for improved security management by the Nigeria Security and Civil Defence Corps. Based on the findings of this study, it is evident that ICT accessibility and utilisation is central to improved security management by the NSCDC.

On the part of the management of NSCDC, the implication is that an ICT policy framework should be developed by the NSCDC in line with national ICT policies, on procurement, use and maintenance of ICT equipment. In addition, the personnel of the Corps

should be empowered to develop ICT skills for operational efficiency and improved service delivery and there should be adequate provision of ICT tools by the management of NSCDC for efficient modern policing. Inadequate access to and utilisation of ICT will lead to poor security management while adequate access to and utilisation of ICT by security operatives will lead to enhanced security management.

On the part of NSCDC personnel, they should be willing to learn how to use ICT for operational efficiency and improved service delivery. In other words, they should be ICT-compliant. It was revealed from the findings of the study that though NSCDC personnel have high level of accessibility using conventional ICT such as computers, laptops, mobile phones, sophisticated gadgets for security purposes recorded low accessibility. On the other hand, the level of ICT utilisation by NSCDC personnel is on the average, while the frequency of ICT utilisation by NSCDC personnel is low. Adequate access to and utilisation of ICT by NSCDC personnel will enhance security management.

The implication for government is to provide adequate funds to the management of NSCDC to procure high quality technological tools that comply with global law enforcement standards to reduce crime to the barest minimum in the country. Hence, government at all levels should make funds available to security agencies for improved security management in Nigeria.

As regards the implications of the theoretical perspectives to the research findings, the study was hinged on three theories which are "The Human Capital Theory, The Diffusion of Innovation Theory and The Path-Goal Theory. The structural elements that constitute the make-up of the Human Capital Theory represent innate ability, level of educational attainment, quality of education and investments made on informal training form ingredients that are responsible for the diffusion of innovation in a human community and in organisations. In this study, these human factors were found relevant for the adoption, accessibility and utilisation of ICT for security management in Nigeria.

The diffusion of innovation theory was found appropriate in this study for adoption of ICT by the NSCDC in crime management in Nigeria. Thus, the study concluded that the adoption of, and effective use of ICT by NSCDC staff depends on the level, quality and relevant training received before and in their course of service. The implication is that accessibility of ICT does not directly imply utilisation; therefore the human resource must be prepared for the adoption and use of ICT by NSCDC.

As regards the Path-Goal Theory, the adoption of ICT by the NSCDC is contingent upon the type of security threat, availability of infrastructure in the society (external), the personnel attributes and organisational policies (internal).

5.6 Contribution to knowledge

The study has been able to ascertain a positive significant relationship between ICT accessibility and security management as well as a positive significant relationship between ICT utilisation and security management. In addition, there is a joint significant contribution of ICT accessibility and utilisation on security management. In other words, accessibility to, and utilisation of ICT enhances security management.

Information and Communication Technology is one of the main driving forces that can bring about development and change in the present Digital Age. Since security management often involves decision making either on the field or in the deployment of personnel for operations, there is a continuous need for ICT knowledge and accessibility of same to enhance efficiency.

The study will assist the NSCDC and other security agencies on how to improve security management in Nigeria through the deployment of high quality technological tools that comply with global law enforcement standards to reduce crime to the barest minimum in the country.

The study has provided baseline data on the factors that affect effective security management by the NSCDC in Nigeria. The findings of the study would be useful in identifying the level of accessibility and utilisation of ICT by NSCDC in fighting crimes in Nigeria, as well as ensuring effective security management in the NSCDC and other security agencies through the deployment of ICT. In addition, it will further the process of the development of ICT skills in the NSCDC and related security agencies, and will add to the body of knowledge available on the use of ICT to fight crime in Nigeria.

5.7 Suggestions for further research

The following topics are suggested for further studies:

1. Accessibility and utilisation of ICT as determinant of security management by security agencies: case study of the Nigerian Army and the Nigerian Police Force.
2. The nexus between resource availability, utilisation and performance of the Nigerian police.
3. Information and communication technology use as correlates of information gathering and security management by the paramilitary in North-central Nigeria.

References

Abdulsalami, A. 2005. The challenge of security in Nigeria". *Newswatch.* Retrieved May 27, 2013 from http://www.dawodu.com/abubakar.htm.

Abolurin, A. 2010. *Security and its management in Nigeria: achievements and challenges of the Nigeria Security and Civil Defence Corps.* Ibadan: John Archers Publishers Ltd. 101pp.

_____. 2010. *Crime control in Nigeria*. Ibadan: John Archers Publishers Ltd.150pp.

Adomi, E. E. and Igun, S. E. 2008. Combating cyber crime in Nigeria. In Longe O. *et al*. 2009. Criminal uses of information & communication technologies in sub-Saharan Africa: trends, concerns and perspectives. *Journal of Information Technology Impact* 9.3: 155-172.

Adebayo, A.A. 2013. Social factors affecting effective crime prevention and control in Nigeria. *International Journal of Applied Sociology* , 3.4: 71-75.

Adegoke, A. S., Phillips, D. A., and Keshinro, K. K. 2015. ICT and its effectiveness in curbing crimes and social vices. *European Journal of Engineering and Technology* 3.4:17-22.

Aina, L.O. (Ed.). 2002. *Research in information sciences: an African perspective*. Ibadan: Stirling-Horden Publishers (Nig) Ltd. 36.

Akinlolu, O. 2005. Crime and policing in Nigeria. In *Crime and policing in Nigeria: challenges and options,* Keynote Address, edited by Alemika, E.E.O. and Chukwuma, I.C. CLEEN Foundation. 19-21.

Alampay, E.A. 2003. Using the capabilities approach to analyse access to information and comunication technologies (ICTs) by the poor. University of the Philippines Institute for Development Policy and Management (IDPM), University of Manchester (PDF).

Alemika, E.E.O. 2005. Crime statistics and information management in Nigerian justice and security systems. In *Crime and policing in Nigeria: challenges and options,* edited by Alemika, E.E. O. and Chukwuma, I.C. CLEEN Foundation. 101-125.

Ani, K.J. and Onyebukwa, C.F. 2016. Nigeria security challenges and recommendations for sustainable national development. Urbanization, security and development issues in Nigeria, 1914-2014. Ahmadu Bello University Press. Retrieved 28 February, 2020 from https://www.researchgate.net

Aremu, M. A. and Ahmed, Y. A. 2011. An investigation of security and crime management in developing society: the implications for Nigeria democratic set-up. *International Journal of Academic Research in Business and Social Sciences,* Oct. 1. 3: 390-399.

Ayoku, A. O. 2005. The evolving sophistication of internet abuses in Africa. In Longe O. *et al*., 2009. Criminal uses of information & communication technologies in sub-Saharan Africa: trends, concerns and perspectives. *Journal of Information Technology Impact.* 9.3: 155-172.

Azazi, A. (2011). Responding to the emerging trends of terrorism in Nigeria, 5th Policing Executive Forum Conference proceeding organized by CLEEN Foundation. In Robert-Okah, I. 2014. Strategies for Security Management in Nigeria: A Roadmap for Peace and National Security. African Research Review. An International *Multidisciplinary Journal, Ethiopia.* 8.3: 1-17,Serial No. 34, July.

Beniger, J. R. 1996. Who shall control cyberspace? In Flanagin, A. 2002. The impact of contemporary communication and information technologies on police organisations. University of California, Santa Barbara, USA. *Police Organisations and Technologies*. 86-105.

Brynjolfsson, E. 1993. The productivity paradox of information technology. In Flanagin, A. 2002. The impact of contemporary communication and information technologies on police organisations. University of California, Santa Barbara, USA. *Police Organisations and Technologies*. 86-105.

Brynjolfsson, E. and Hitt, L. 2000. Beyond computation: information technology, organizational transformation and business performance. *Journal of Economic Perspectives* 14.4: 23-48, Retrieved Nov. 13, 2014 from www.aeaweb.org/jep:14.4.23.

Busagala, L. and Ringo L. 2013. Constraints of e-policing adoption: a case of Dodoma, Tanzania. *International Journal of Information and Communication Technology Research* 3.1: 42-48.

Byrne, J. and Gary, M. 2011-13. Technological innovations in crime prevention and policing: a review of the research on implementation and impact. *Cahiers Politie Studies*, Jaargang, Maklu-Uitgevers. 17-40.

Cambridge Dictionary (2020). Definition of security. Retrieved from dictionary.cambridge. org

Campina, J.A. n.d. In-Car cameras for law enforcement: The role it plays enforcing driving under the influence investigations.

Chainey, S. and Ratcliffe, J.H. 2005. GIS and crime mapping. London: John Wiley and Sons.

Chan, J. 2001. "The Technology game: How information technology is transforming police practice". *Journal of Criminal Justice*, 1:139-159. In Byrne, J. and Gary, M. 2011-13. Technological innovations in crime prevention and policing: a review of the research on implementation and impact. *Cahiers Politie Studies*, Jaargang, Maklu-Uitgevers. 17-40.

Chandler, D. and Munday, R. 2012. Information Technology: A Dictionary of Media. Oxford University Press. Retrieved from http.//www.oxfordreference.com

Cheng, M. 2013. London police use super recognizers to fight crime. In Quarshie, H. O. 2014. Using ICT to fight crime: a case of Africa. *Journal of Emerging Trends in Computing and Information Sciences*. Jan. 5.1. Retrieved 7 Nov., 2015 from http://www.cisjournal.org.

Chika, D.2014. The legal framework and institutional arrangement on the use of ICT for detection and prevention of criminality and insecurity at all levels in Africa. Tangier, Morocco.

Collins English Dictionary. 2017. Intelligence gathering definition. Retrieved 5 September, 2017 from https://www.collinsdictionary.com

Composite Project. 2011. ICT trends in European policing. *Composite Comparative Police Studies in the EU*. 44pp.

Custers, B. (2012). Technology in policing: Experiences, obstacles and police needs. *Computer Law & Security Review.* 28.1: 62-68.

Czerniewicz, L. and Cheryl, B. 2005. Access to ICT for teaching and learning: from single artefact to inter-related resources. *International Journal of Education and Development using ICT* (IJEDICT) 2.1: 42-56.

Dell.com.2012. "Manage IT security risk with a Human Element". Retrieved from https://en.m.wikipedia.org

Eck, J. E. 1983. Solving crimes: The investigation of burglary and robbery, Police Executive Research Forum, Washington, DC. In Hakan, H., Serdar K. G., and Bahadır K. A. 2013. Police use of information technologies in criminal investigations. *European Scientific Journal,* February. 9.4:221-240.

English Oxford Dictionary. 2017. Crime prevention definition. Retrieved 5 September, 2017 from https://www.oed.com

Ericson, R.V. and Haggerty, K.D. 1997. Policing the risk society. Oxford: Clarendon Press.

Europe Union. 2014. What is ICT accessibility? Retrieved 28 February, 2020 from http://mandate376.standards.eu/accessible-procurement/what-ict-accesssibility

Eveland, J. D. and Bikson, T.K. 1988. Work group, structures, and computer support: a field experiment." In Flanagin, A. 2002. The impact of contemporary communication and information technologies on police organisations. University of California, Santa Barbara, USA. *Police Organisations and Technologies*. 86-105.

Fairouz, M.A. and Rifat, O.S. 2009. The effective utilisation of information and communication technologies and its impact on competitive advantage. *European Journal of Scientific Research.* 1-13. Retrieved Oct. 15, 2013 from http://www.eurojournals.com/ejsr.htm.

Farrington, D.P. and Welsh, B.C. 2002. Effects of improved street lighting on crime: a systematic review. Home Office Research, Development and Statistics Directorate, Aug. v-vi.

Flanagin, A. 2002. The impact of contemporary communication and information technologies on police organisations. University of California, Santa Barbara, USA. *Police Organisations and Technologies*. 86-105.

Fulk, J., Flanagin, A.J., Kalman, M., Monge, P.R. and Ryan, T. 1996. Connective and communal public goods in interactive communication systems. In Flanagin, A. 2002. The impact of contemporary communication and information technologies on police organisations. University of California, Santa Barbara, USA. *Police Organisations and Technologies*. 86-105.

Fulk, J. and DeSanctis, G. 1995. Electronic communication and changing organisational forms. In Flanagin, A .2002. The impact of contemporary communication and information technologies on police organisations. University of California, Santa Barbara, USA. *Police Organisations and Technologies*. 86-105.

Gehl, R. 2017. Introduction to criminal investigation: processes, practices and thinking. Retrieved 2 March, 2020 from https;//pressbooks.bccampus.ca

Gephart, M.A.1995. The road to high performance. In Kreitner, R. 2000. *Management*. 7th Edition. Houghton Mifflin Company. 270.

Gibson, Ivancevich, and Donnelly. 1991. In Kreitner, R. 2000. *Management*. 7th Edition. Houghton Mifflin Company.

Gottschalk, P. 2007. Knowledge management systems in law enforcement: technologies and techniques, Idea Group Pub, Hershey, PA. In Hakan, H., Serdar K. G., and Bahadır K. A. 2013. Police use of information technologies in criminal investigations. *European Scientific Journal,* February. 9.4:221-240.

Greater London Authority. 2013. Smart policing: how the metropolitan police service can make better use of technology. Retrieved Aug. 18, 2015 from www.london.gov.uk/assembly/reports.

Greer, C. 2010. Crime and media. In Ikhazuagbe, M.N. and Sule, K. 2012. *Surveillance, information and communication technologies (icts) as tools for information gathering and security management*. Department of Mass Communication, School of Information and Communication Technnology, Auchi Polytechnic, Auchi. 18pp.

Groff, E. and Mcewen, T. 2008. "Identifying and measuring the effects of information technologies on law enforcement agencies: The making officer redeployment effective program". In Byrne, J. and Gary, M. 2011-13. Technological innovations in crime prevention and policing: a review of the research on implementation and impact. *Cahiers Politie Studies*, Jaargang, Maklu-Uitgevers. 17-40.

Hakan, H., Serdar K. G., and Bahadır K. A. 2013. Police use of information technologies in criminal investigations. *European Scientific Journal,* February. 9.4:221-240.

Harold, B. 1983. Thinking about national security: defence and foreign policy in a dangerous world. As quoted in Watson, C.A. 2008. US national security: a reference handbook. Contemporary world issues. Second revised edition.

Harris, C. 2007. "Police and Soft Technology: How Information Technology Contributes to Police Decision Making". In Byrne, J. and Gary, M. 2011-13. Technological innovations in crime prevention and policing: a review of the research on implementation and impact. *Cahiers Politie Studies*, Jaargang, Maklu-Uitgevers. 17-40.

Heibutzki, R. n.d. Types of surveillance in criminal investigations. Retrieved May, 2017 from work.chron.com.

Hinds, P. and Kesler, S. 1995. Communication across boundaries: work, structure and use of communication technologies in a large organisation. *Organisation Science* 6:373-393.

House of Lords. 2009. Selected committee on constitution, surveillance: Citizens and the state. HL Paper, Second report of 2008-2009.

House Roberts. 1996. The Path-Goal Theory. Retrieved May 2017 from http://en.wikipedia.org/wiki/pathgoal/theory.

Huber, G.P. 1990. A theory of the effects of advanced information technologies on organisational design, intelligence and decision-making. In Flanagin, A. 2002. The impact of contemporary communication and information technologies on police organisations. University of California, Santa Barbara, USA. *Police Organisations and Technologies*. 86-105.

Ibikunle, F. and Adefihan, B. 2014. Effectiveness of Information and Communication Technology (ICT) in policing in Nigeria. *Scottish Journal of Arts, Social Sciences and Scientific Studies,* 90-103. Retrieved 7 June, 2017 from http://scottishjournal.co.uk.

ICTD. 2007. ICT in law enforcement. ICTD Project Newsletter, Oct.

IEduNote, 2017. What is Management? Definition, Features (Explained). Retrieved from iedunote.com

Ikhazuagbe, M.N. and Sule, K. 2012. Surveillance, information and communication technologies (ICTs) as tools for information gathering and security management. Department of Mass Communication, School of Information and Communication Technnology, Auchi Polytechnic, Auchi. 18pp.

Indiana Forensic Institute. 2011. Advanced In-Car Video System. Jan. 5-6.

Information and communication technology gadgets in security operations' images. Retrieved from https://www.amazon.com

Jarillo, J.C. 1988. On strategic networks. In Flanagin, A. 2002. The impact of contemporary communication and information technologies on police organisations. University of California, Santa Barbara, USA. *Police Organisations and Technologies*. 86-105.

Kawai, D.E. and Dogo H. S. 2011. Development of criminals record information system. Nigeria Computer Society (NCS). 10th International Conference, July 25-29. 1-8.

Kinicki, A. and Kreitner, R. 2009. *Organizational behaviour: key concepts, skills and best practices*. (Customised 4th Edition). New York, NY: McGraw-Hill. 391.

Klein, N. 2008. *China's All Seeing Eye.* Rolling Stone, May 14, 2008. Retrieved from www. naomiklein.org?articles/2008?05/chinas-all-seeing-eye

Kreitner, R. 2010. *Management*. 7th Edition. Houghton Mifflin Company. 5-19.

Kumar, B. 2012. Role of information and communication technology in Indian police. *Gian Jyoti E-Journal*. Jan-Mar. 2. 1:1-9.

Lasswell, H. 1950. Politics: who gets what, when, how. In Abolurin, A. 2012. Restructuring Nigeria's national security architecture: issues and challenges. Unpublished paper.

Leavitt, H.W. and Pondy, L.K. 1964. Reading in managerial psychology. In Fairouz, M.A. and Rifat, O.S. 2009. The effective utilisation of information and communication technologies and its impact on competitive advantage. *European Journal of Scientific Research.* 1-13. Retrieved July 27, 2013 from http://www.eurojournals.com/ejsr.htm.

Lectures on Labor Economics. n.d. The basic theory of human capital. Chapter 1. Retrieved May 5, 2013 from econ.lse.ack.uk/staff/spischke/ec533.

Leighton, W. K. and Martin M. 2014. The effect of CCTV on public safety. Journalists Resource. Harvard Kennedy School's Shorenstein Centre and the Carnegie-Knight Initiative.

Leng, A., Davis, M.A. and P. N. Finlay. 2000. Measures to assess the impact of information technology on quality management. *International Journal of Quality and Reliability Management*, MCB University Press. 17.1: 42-65.

Library and Information Science Network. 2014. ICT: Concept and Definition. Retrieved from www.lisbdnet.com on 25 February, 2020.

Li-Hua, R.A. and Khalil, T.P. 2006. Technology management in China: a global perspective and challenging issues. In Fairouz, M.A. and Rifat, O.S. 2009. The effective utilisation of information and communication technologies and its impact on competitive advantage. *European Journal of Scientific Research.* 1-13. Retrieved July 27, 2013 from http://www.eurojournals.com/ejsr.htm.

Lippman, W. 1943. US foreign policy. In Abolurin, A. Restructuring Nigeria's national security architecture: issues and challenges. Unpublished paper.

Longe, O., Oneurine, N.,Wada, F., Mbarika, V., and Kvasny, L. 2009. Criminal uses of information & communication technologies in sub-Saharan Africa: trends, concerns and

perspectives. *Journal of Information Technology Impact.* 9.3: 155-172. Retrieved Feb. 22, 2013 from http://www.jiti.net/v07/jiti.v9n3.195-212.pdf.

Longe, O. B., Chiemeke, S. C, Onifade, O. F. W., Balogun, F. M., Longe, F. A. & Otti, V. U. 2007. Exposure of children and teenagers to internet pornography in South Western Nigeria: concerns, trends & implications. *Journal of Information Technology Impact*. *7*.3:195-212. Retrieved Feb. 22, 2013 from http://www.jiti.net/v07/jiti.v7n3.195-212.pdf.

Longe, O. B., Chiemeke, S. C., Onifade, O. F. W. and Longe, F. A. 2008. Camouflages and token manipulations: the changing faces of the Nigerian fraudulent 419 scammers". *African Journal of Information Technology*. *4*.3: 87-98.

Lyon, D. 2003. Surveillance technology and surveillance society. In Misa, T.J., Brey, P., and Feenberg, A. Modernity and technology. Boston, MIT press. 161-184

Maier, C.S. 1993. Peace and security for the 1990s. Unpublished paper for the McArthur Fellowship Programme, Social Science Research Council, June 12.

Manning, P. K. 1992. Information technologies and the police. In Flanagin, A. 2002. The impact of contemporary communication and information technologies on police organisations. University of California, Santa Barbara, USA. *Police Organisations and Technologies*. 86-105.

Mansell, R.W., Edward, S. and Uta, W. 1998. Indicators of a sustainable information society: policy analysis and application. Retrieved 28 Nov. 2012 from http://www.jrc.es/iptsreport/w132/english/ISS4E326.html.

Matsepe-Casaburri, I. 2004. Access to ICT. In Czerniewicz, L. and Cheryl, B. 2005. Access to ICT for teaching and learning: from single artefact to inter-related resources. *International Journal of Education and Development using ICT* (IJEDICT) 2.1: 42-56.

Microsoft Encarta. 2009. *Crime.* Redmond WA: Microsoft Corporation.

Nestel, T. 2006. Using surveillance camera systems to monitor public domains. Master's Thesis, Naval Postgraduate School (March). Retrieved from http://www.chds.us.

Net Industries and its Licensors. 2020. Police: criminal investigations. Retrieved 2 March, 2020 from https://law.jrank.org

Ngugi, J.K., Ngugi, P.K.,Were M. S. and Titany,L. 2012. The factors influencing service delivery in the National Police service: a case of the Kenya Police in Nairobi County.

Journal of Research in International Business and Management. 2.11: 285-291. Retrieved June 12, 2017 from http://www.interesjournals.org/JRIBM.

Norris, C. and Armstrong, G. 1999. The maximum surveillance society: the use of CCTV. Oxford: Berg Publishers.

Norris, C. and McCahill, M. 2006. CCTV: beyond penal modernism? *British Journal of Criminology*. 46.1:97-118

Odekunle, F. 2005. Overview of policing in Nigeria: problems and suggestions. In Crime and policing in Nigeria: challenges and options, edited by Alemika, E.E. O. and Chukwuma, I.C. CLEEN Foundation. 22-32.

O'Hara, C. E. and O'Hara, G.L. 1994. Fundamentals of criminal investigations. Sixth edition.

O' Maloney and Barley in Flanagin, A. 2002. The impact of contemporary communication and information technologies on police organisations. University of California, Santa Barbara, USA. *Police Organisations and Technologies*. 86-105.

Okunola, R. 2002. Crime in society. *In* Adebayo, A.A. 2013. Social factors affecting effective crime prevention and control in Nigeria. *International Journal of Applied Sociology*, 3.4: 71-75.

Oludare, A.I., O.E. Omolara, A.M. Umar, and D.V. Kemi. 2014. The use of ICT tools in tackling insecurity and terrorism problem in Nigeria. Network and Complex Systems. Retrieved 7 June, 2017 from www.iiste.org. 5.5:21-40.

Olujinmi, A. 2005. Crime and policing. Keynote Address. In *Crime and policing in Nigeria: challenges and options,* edited by Alemika, E.E. O. and Chukwuma, I.C. CLEEN Foundation.19-22

Otter, S. 2013. Metropolitan Police Service: Budget and performance committee. In Greater London Authority. 2013. Smart policing: how the metropolitan police service can make better use of technology. Retrieved Aug. 18, 2015 from www.london.gov.uk/assembly/reports.

Oyeobu, O.M. 2010. Use of ICT and scientific aids in policing. Paper presented at the Retreat held by the Police Service Commission, Uyo, Akwa Ibom State on 20 Oct. Retrieved from www. psc.gov.ng.

Paul, R. 2004. Long history of intelligence failures. Retrieved 22 June, 2014 from: http://news.bbc.co.uk/2/hi/middle_east/3883605.stm.

Pilkington, P. and Kinra, S. 2005. Effectiveness of speed cameras in preventing road traffic collisions and related casualties: Systematic Review. BMJ (Clinical Research ed.) 330.331-4.

Pinsonneault, A.M. and Rivard, S.S. 1998. Information technology and the nature of managerial work: from the productivity paradox to the icarus paradox. In Fairouz, M.A. and Rifat, O.S. 2009. The effective utilisation of information and communication technologies and its impact on competitive advantage. *European Journal of Scientific Research.* 1-13. Retrieved from http://www.eurojournals.com/ejsr.htm.

Preston, L.E. and Post, J.E. 1975. The principle of public responsibility. In Abolurin, A. 2010. *Security and its management in Nigeria: achievements and challenges of the Nigeria Security and Civil Defence Corps*. 8-9.

Powell, W.W., Koput, K.W. and Smith-Doerr, C. 1996. Interorganisational collaboration and the locus of innovation: networks on learning in biotechnology. In Flanagin, A. 2002. The impact of contemporary communication and information technologies on police organisations. University of California, Santa Barbara, USA. *Police Organisations and Technologies*. 86-105.

Quarshie, H. O. 2014. Using ICT to fight crime: a case of Africa. *Journal of Emerging Trends in Computing and Information Sciences*. Jan. 5.1. Retrieved 7 Nov., 2015 from http://www.cisjournal.org.

Queensland Police Service, QPS. 2010.Queensland Police Service Annual Report, 2010-2011. Retrieved 7 Nov., 2015 from https://www.police.qld.gov.au

Ratcliffe, J.H. 2008. Intelligence-led policing. In Wortley, R., Mazeroll, L. and Rombouts, S. (Eds.) *Environment Criminology and Crime Analysis*. (PDF). Cullompton, Devon: William Publishing.

Reichert, K. 2001. "Use of information technology by law enforcement*". In* Byrne, J. and Gary, M. 2011-13. Technological innovations in crime prevention and policing: a review of the research on implementation and impact. *Cahiers Politie Studies*, Jaargang, Maklu-Uitgevers. 17-40.

Ribadu, N. 2005. Obstacles to the effective prosecution of corrupt practices and financial crime cases in Nigeria. In Longe O. *et al.* 2009. Criminal uses of information & communication

technologies in sub-Saharan Africa: trends, concerns and perspectives. *Journal of Information Technology Impact.* 9.3: 155-172.

Robbins, S.P. and Timothy, A. J. 2007. *Organizational Behaviour*. Twelfth Edition. Prentice Hall Inc. 538-545.

Roberg, R., Kuykendall, J. and Novak, K. 2002. *Police Management* (3rd Edition). California: Roxbury Publishing Company.

Robert-Okah, I. 2014. Strategies for security management in Nigeria: a roadmap for peace and national security. *African Research Review.* Serial No. 34, July. 8.3:1-17.

Rogers, E.M. 2003. *Diffusion of innovations* (5th ed.). New York: Free Press. In Sahin, I. 2006. Detailed review of Rogers' diffusion of innovations theory and educational technology-related studies based on Rogers' theory. *The Turkish Online Journal of Educational Technology – TOJET*. Article 3, April. 5.2: 14-23.

Rosamunde, B. and De Hert, P. 2011-3. Policing, surveillance and law in a pre-crime society: Understanding the consequences of technology based strategies. *Cahiers Politiestudies*, Maklu-Uitgevers. 163-192.

Rowley, M. 2013. Metropolitan Police Service: Budget and performance committee. In Greater London Authority. 2013. Smart policing: how the metropolitan police service can make better use of technology. Retrieved Aug. 18, 2015 from www.london.gov.uk/assembly/reports.

Sahin, I. 2006. Detailed review of Rogers' diffusion of innovations theory and educational technology-related studies based on Rogers' theory. *The Turkish Online Journal of Educational Technology – TOJET*. Article 3, April. 5.2: 14-23.

Sellin T. "Culture". In Abolurin, A. 2010. *Crime Control in Nigeria*. Ibadan: John Archers Publishers Ltd.5.

Sethi, V. 2013. Role of ICT in police force in India. *International Journal of Advanced Research in Computer Science and Software Engineering*, Nov. 3.2: 778-781. Retrieved 21 Dec, 2014 from www.ijarcsse.com.

Singh, K. 2013. Impact of technology in library services. *International Journal of Management and Social Sciences Research (IJMSSR).* 2.4: 74-76.

Smith, R. G., Holmes, M. N. and Kaufmann, P.1999. Nigerian advance fee fraud: trends and issues in crime and criminal justice. In Longe, O. *et al*., 2009. Criminal uses of

information & communication technologies in sub-Saharan Africa: trends, concerns and perspectives. *Journal of Information Technology Impact.* 9.3: 155-172.

Stuart, D. R. 2013. Social media: Establishing criteria for law enforcement use. Retrieved June 12, 2017 from http://www.fbi.gov/stats-services/publications/law-enforcementbulletin/ 2013/february/social-media-establishing-criteria-for-lawenforcement-use.

Surette, R. 2007. Media, crime and criminal justice: Images, realities and policies, 3rd Edition. In Ikhazuagbe, M.N. and Sule, K. 2012. Surveillance, information and communication technologies (ICTs) as tools for information gathering and security management. Department of Mass Communication, School of Information and Communication Technology, Auchi Polytechnic, Auchi. 18pp.

Sylvester, L. 2001. The importance of victimology in criminal profiling. In Longe, O. *et al*., 2009. Criminal uses of information & communication technologies in sub-Saharan Africa: trends, concerns and perspectives. *Journal of Information Technology Impact.* 9.3:155-172.

Taniu, D.K. and Barmao,C.K. 2016. Use of ICT in the detection and prevention of crime in Kenya. *Journal of Information Engineering and Applications*. 6.9: 62-71.

Tarry, S. 2004. "Deepening" and "Widening": an analysis of security definitions in the 1990s. Department of Political Science, University of Calgary.

Teixeira, P.N. 2014. Gary Becker's early work on human capital: collaborations and distinctiveness. *IZA Journal of Labor Economics*. Retrieved August 8, 2015 from izajole.springeropen.com

Thomas, R. 2003. Blending qualitative and quantitative research methods in theses and dissertations. Thousand Oaks: Corwin Press. 240 pp.

Tombul, F. and Cakar, B. 2015. Police use of technology to fight against crime. *European Scientific Journal*, April. 11.10:286-297.

UNDP. 1994. New dimensions of human security. Retrieved 25 Jan., 2014 from hdr.undp.org/1994_en_chap2.pdf.

US Department of Transportation. 2015. Speed enforcement camera systems: operational guidelines. Retrieved 16 Nov., 2015 from www.nhtsa.gov.

Waever, O. 1995. Securitization and desecuritization. In *On security*, edited by Ronnie, D. L. New York: Columbia University Press.

Were, M.S., Gakure, R.W., Kiraithe, E.K. and Waititu, A.G. 2013. The influence of resource availability and utilization on the performance of the police force: a case study of Nairobi Police Force. *Journal of Business Management and Corporate Affairs* 2.1:1-10.

Worldwide Technologies. 2013. Wireless button camera: main features. Retrieved from www.wtpl.co.in.buttoncamera

Wyse, S. 2012. Benefits of using cross tabulations in survey analysis. Retrieved on 26 February 2020 from https://www.scrip.org.

Appendix 1

DEPARTMENT OF LIBRARY, ARCHIVAL AND INFORMATION STUDIES

UNIVERSITY OF IBADAN, IBADAN

Dear respondent,

This Questionnaire is designed to elicit information on ICT accessibility and utilisation as determinants of security management by the Nigeria Security and Civil Defence Corps. It will be highly appreciated if you answer the questions raised in this questionnaire as honestly as possible. Please, be assured that all responses will be treated with confidentiality and used only for academic purposes. Your anonymity is guaranteed as you are not required to write your name on the questionnaire.

Please answer all questions. Note that there is no right or wrong answer. Your timely response in filing this questionnaire will be highly appreciated.

Thank you very much.

Yours faithfully,

Egberedu Mega
Matric No.: 76697

Section A: Demographic data

Instruction: Please answer all the questions listed below.

1. Command: ……

2. Gender: Male [ ] Female [ ]

3. Age (in complete years):……..……

4. Marital Status: a. Single [ ] b. Married [ ] separated [ ]
c. Divorced [ ] d. Widowed [ ]

5. Department/Division/Unit:……

6. Rank……

7. Years of work experience with NSCDC: …….. …….

8. Highest educational/professional qualification, please indicate.

(a) Ordinary National Diploma (OND) [ ]

(b) Higher National Diploma (HND) [ ]

(c) Bachelor's degree (B.A., B.Sc., B.Ed., LL.B) [ ]

(d) Master's degree (M.A., M.Sc., M.Ed.) [ ]

(e) Doctor of Philosophy (PhD) [ ]

(f) Others (Please specify)……

Section B: Accessibility to ICT tools/gadgets

9a. Please, respond to the following questions on ICT accessibility in terms of proximity/ease of location, and ease of use by ticking Strongly Agree, Agree, Disagree and Strongly Disagree

ICT accessibility in terms of proximity/ease of location, and ease of use

S/N		Strongly Agree	Agree	Disagree	Strongly Disagree
	Proximity/ease of location				
1.	NSCDC personnel have free access to ICT when needed for operation in the Department				
2.	There are often stringent protocols to follow in deploying ICT.				
3.	NSCDC personnel apply for ICT when needed for any operational activity.				
4.	Many officers have to sign before approving ICT for any operational activity.				
5.	Every personnel is aware of where to pick ICT gadgets needed for operations.				

	Ease of use				
6.	The process of obtaining ICT for use is easy.				
7.	NSCDC personnel have expertise in the use of ICT.				
8.	There is an expert in charge of maintenance and repair of ICT gadgets in each department.				
9.	Identifying which ICT gadget to use for which occasion often pose problem during operation.				
10.	NSCDC personnel find it difficult to operate some of the ICT gadgets during operations.				
11.	Only senior officers are allowed to use ICT gadgets during operations.				
	Ease of retrieval				
12.	Data stored on ICT gadgets are often corrupt or infected by virus before retrieval.				
13.	To retrieve data stored on ICT gadgets could be hard at times.				
14.	Interpreting information produced by ICT gadget is easy.				

Instruction: Please, respond to the following items to show your level of ICT accessibility by ticking: High, Moderate, Low, or Not at all.

9b. How accessible are these ICT tools/gadgets to you in your daily operations?

Accessibility to ICT tools

S/N	ICT tools/gadgets	High	Moderate	Low	Not at all
1	Internet facilities				
2	Multimedia projector				
3	Email				
4	Interactive radio				
5	Teleconferencing				
6	Audiotapes				
7	Computers				
8	Laptops				
9	Photocopiers				
10	Fax machines				
11	Mobile phones				
12	Landline phones				
13	Scanners				
14	Television set				
15	Video camera				
16	Camera pens				
17	Wrist phones				
18	Video sunglasses				
19	In-car camera systems				
20	Graffiti (Surveillance) cameras				
21	Thermal imagers				
22	Electronic whiteboards				
23	Radios (walkie-talkies)				
24	Language translators				
25	Crime maps				
26	CCTV				
27	Infrared (Thermographic) cameras				
28	Speed enforcement (safety) camera				
29	Automatic License Plate Recognition (ALPR)				

Section C: Utilisation of ICT tools/gadgets in security operations

Instruction: Please respond to the following items to show your level of ICT utilisation by ticking: Very Highly Utilised (VHU), Highly Utilised (HU), Occasionally Utilised (OU) and Never Utilised (NU).

10a. The following ICT tools/gadgets are utilised by me in my daily operations:

Utilisation of ICT tools in security operations

S/N	ICT tools	Very Highly Utilised	Highly Utilised	Occasionally Utilised	Never Utilised
1	Internet facilities				
2	Multimedia projector				
3	Email				
4	Interactive radio				
5	Teleconferencing				
6	Audiotapes				
7	Computers				
8	Laptops				
9	Photocopiers				
10	Fax machines				
11	Mobile phones				
12	Landline phones				
13	Scanners				
14	Television set				
15	Camera pens				
16	Video camera				
17	Wrist phones				
18	Video sunglasses				
19	In-car camera systems				
20	Graffiti (Surveillance) cameras				
21	Thermal imagers				
22	Electronic whiteboards				
23	Radios (walkie-talkies)				
24	Language translators				
25	Crime maps				

26	CCTV				
27	Infrared (Thermographic) cameras				
28	Speed enforcement (safety) camera				
29	Automatic License Plate Recognition (ALPR)				

Instruction: Please respond to the following items to show the ICT most deployed by the NSCDC by ticking: Daily, At least once a week, Two-three times a week, More than 3 times a week, Monthly, or Never.

10b. How often do you use the under listed ICT tools?

Frequency of use of ICT tools/ICT most deployed

S/N	ICT tools	Daily	At least once a week	Two-three times a week	More than three times a week	Monthly	Never
1	Internet facilities						
2	Multimedia projector						
3	Email						
4	Interactive radio						
5	Teleconferencing						
6	Audiotapes						
7	Computers						
8	Laptops						
9	Photocopiers						
10	Fax machines						
11	Mobile phones						
12	Landline phones						
13	Scanners						
14	Television set						
15	Camera pens						
16	Video camera						
17	Wrist phones						
18	Video sunglasses						
19	In-car camera systems						
20	Graffiti (Surveillance) cameras						

21	Thermal imagers						
22	Electronic whiteboards						
23	Radios (walkie-talkies)						
24	Language translators						
25	Crime maps						
26	CCTV						
27	Infrared (Thermographic) cameras						
28	Speed enforcement (safety) camera						
29	Automatic License Plate Recognition (ALPR)						

Section D: Security management by the NSCDC through the deployment of ICT

Instruction: Please respond to the following statement by ticking Strongly Agree **(SA)**, Agree **(A)**, Disagree **(D),** and Strongly Disagree **(SD)** to show the deployment of ICTs in various work activities by the Nigeria Security and Civil Defence Corps to ensure security management.

11a. To ensure effective security management, the NSCDC deploys ICT in various work activities as follows:

Security management by the NSCDC through the deployment of ICT

S/N	Items	Strongly Agree	Agree	Disagree	Strongly Disagree
	Administration				
1	Posting of officers to beats has been made easier through ICTs.				
2	Signals and other security information are better transmitted through ICTs than other conventional means.				
3	Data of officers and men can easily be compiled and processed for management purposes through the use of ICTs.				
4	Issues with delayed and unpaid salaries have greatly reduced as a result of ICT infrastructure of NSCDC.				
	Operations				
5	ICT tools are essential in maintenance of peace and order.				
6	During searches and rescue operations, officers and men are mobilised with ICT gadget(s) required for the operation.				

7	ICT tools have not contributed to efficient monitoring of Private Guard Companies across the state.				
8	ICT tools are not required to forestall criminal activities.				
9	The war against terror can only be won by the use of ICTs by NSCDC personnel.				
10	The Corps uses ICT tools in maintaining 24 hours surveillance over infrastructures, sites and projects for the Federal, State, and Local Governments.				
11	NSCDC anti-vandalism drive has been better enhanced by deployment of ICTs.				
12	In cases of riots and civil disorders, ICT gadgets and tools are not usually deployed by NSCDC personnel.				
13	In detecting and demarcating danger areas, ICT tools are not required by the NSCDC.				
14	As a matter of policy, the Corps deploys ICT tools to a large extent in its various operational activities.				
15	To safeguard critical national assets and infrastructures (CNAIs), ICT tools are not required.				
	Intelligence/Investigations				
16	ICT has made security report better protected from unauthorised access.				
17	Taking of statements of suspects and witnesses have become easier with the use of ICTs.				
18	Arrest of suspects can be enhanced by deploying ICTs.				
19	ICT tools are easily deployed to prevent escape from custody.				
20	ICT tools will greatly enhance admissibility of evidence during prosecutions.				
21	ICT is not required in accurate record keeping of exhibits.				
22	In disseminating intelligence, ICT is not required.				

Instruction: Please respond to the following statement by ticking Yes or No to show how the NSCDC deploys ICT to ensure effective security management.

11b. To ensure effective security management, the NSCDC deploys ICT in its work activities to achieve the following:

S/N	Items	Yes	No
1	Crime lights are used by the NSCDC to ensure crime scenes are processed faster and more thoroughly.		
2	The NSCDC uses in-car camera system to confirm and ensure high degree of officer professionalism, as well as in criminal investigations and arrests.		
3	For criminal investigations, the NSCDC deploys the criminal investigation record system to extract relevant data from disparate record system so as to match suspects to crimes.		
4	Crime maps are used by the NSCDC to depict graphically where crime has occurred, and to direct patrols.		
5	For crime analysis and intelligence information, the NSCDC deploys Geographical Information System (GIS).		
6	Graffiti camera is used by the NSCDC in its anti-vandalism drive and general surveillance.		
7	The NSCDC deploys CCTV in strategic places to ensure surveillance.		
8	In the area of terrorism, the NSCDC deploys handheld laser spectroscopy devices that determine the chemical composition of substances within seconds.		
9	For simple investigation, camera pens are used by NSCDC personnel.		
10	The NSCDC deploys language translators to determine the language to speak when someone does not speak English during investigations.		
11	With the video sunglasses, the personnel of NSCDC can take a video of whatever is in view during operations.		
12	Thermal imagers are used by the NSCDC to locate missing children, scan driveways, tyre tracks, parking lots, etc.		
13	Radios are one of the invaluable ICT tools used by NSCDC to aid communication.		
14	The NSCDC personnel use wrist phones to transmit ongoing conversations without anyone knowing.		
15	During meetings, the NSCDC make use of electronic whiteboards to take notes and keep such for future reference, as well as allow the production of multiple copies of information for field distribution.		

Section E: Constraints to security management through the deployment of ICT

Instruction: Please respond to the following statement by ticking Strongly Agree **(SA)**, Agree **(A)**, Disagree **(D),** and Strongly Disagree **(SD)** to show the constraints to security management through the deployment of ICT.

12. Which of the following are constraints to security management through the deployment of ICT?

Constraints to security management through the deployment of ICT

S/N	Items	Strongly Agree	Agree	Disagree	Strongly Disagree
I	Personal factors (perceived benefits)				
2	Organisational factors (restrictions)				
3	Complexity of ICT factors (ease of use)				
4	Lack of interest among officers and men of the Corps to adopt the use of computers and other modern information technology gadgets for operational efficiency.				
5	Inability of officers to operate ICT gadgets.				
6	Erratic power supply.				
7	Lack of training of officers and men of the Corps by the management of the Corps.				
8	Lack of access to the ICT gadgets.				
9	Low level of education.				
10	Not ICT-compliant.				
11	Inadequate funding to provide ICT equipment.				
12	High cost of ICT tools.				
13	Lack of expertise on the use of ICT tools.				

Appendix 2: Interview Guide

1. Does NSCDC have an ICT policy framework for its operations?
2. If yes, is it published?
3. Is there a copy of the policy?
4. What do you understand by the term ICTs?
5. Can you mention some ICT gadgets/tools used by your Department/Unit during operations?
6. How often are these ICT tools deployed during operations?
7. Do the personnel have to apply for use or are the gadgets readily available when needed?
8. How has ICT assisted the Corps in arrest, prosecution and intelligence gathering?
9. Is there any form of training programme specially designed for deployment of ICTs for officers and men of the Corps?
10. How often do officers and men go for training especially on use of ICTs for security operations?
11. What are the constraints encountered while accessing and using ICTs during operations?

Appendix 3

Role of NSCDC in Security Management

Role of NSCDC in Management of Vandalism

S/N	TITLE	RC	RN
(1)	Corps Arrests 35 Black Market Racketeers	PU/10/3/08	7
(2)	Another Pipeline Explosion Looms at Arepo Village	TD/10/3/08	9
(3)	NSCDC, Pipeline Vandals' Gun Duel Rocks Community	PU/19/4/08	11
(4)	Soldiers, Policemen Caught Aiding Pipeline Vandals	VG/17/4/08	12
(5)	8 Arrested for Illegal Oil Bunkering in Delta	TB/14/4/08	10
(6)	Army to Review Arrangement on Oil Pipelines	TB/10/4/08	12
(6)	Army to Review Arrangement on Oil Pipelines	TB/10/4/08	12
(7)	'Pipeline Vandalism Abates'	NA/08/4/08	10
(8)	Ondo NSCDC Hands over 3 Persons to EFCC	NN/10/4/08	20
(9)	Ogun NSCDC Arrested Four Vandals as Alake Promises Support	SI/26/4/08	A8
(10	)Security Defence Vows to Deal with Vandals	WN/13-19/4/08	20
(11)	Civil Defence Seize Two Petroleum Trucks	NDS/9/5/08	11
(12)	NSCDC Nabs Petrol Tankers, 18 Vandalized in CRS	DC/8/5/08	28
(13)	NSCDC Arrest 141 Suspects in 3 Months	AI/28/4/08	27
(14)	Civil Defence Corps Declares War on vandals	LD/14/5/08	23
(15)	Pipeline Explosion Kills 100 in Lagos	NM/5/08	3
(16)	NSCDC Arrests 10 Pipeline Vandals in Abia	DI/27/5/08	
(17)	Pipeline Explosions Rock Ogun Five Policemen, Four Others Burnt	PU/27/5/08	7
(18)	Preventing Pipeline Fire Disaster in Lagos State	NA/30/5/08	16
(19)	Another Pipeline Fire Tragedy	DS/26/5/08	8
(20)	NSCDC Arrests 3 for Illegal Oil Bunkering in Delta	NDS/26/5/08	12
(21)	Reps to Probe Pipeline Fire	NA/19/5/08	5
(22)	Security Agents Clash with Pipeline Vandals	NDS/19/5/08	9
(23)	Many Prominent People are Responsible for Vandalism	DH/19/5/08	9
(24)	Defence Corps Arrests 18 over Vandalism	GU/21/5/08	5
(25)	NSCDC Arrests 12 Suspected Pipeline Vandals	NN/11/2/08	24
(26)	Vandalisation: NSCDC Saves Government Over N100 Million in Five Months	AI/11-17/08	28

(27)	NSCDC Prosecutes Five Pipeline Vandals	PU/8/2/08	5	
(28)	Ogun NSCDC, Obas Meet over Pipeline Vandalism	DI/8/2/08	8	
(29)	Time-Up for 15 Oil Thieves in Abia	NT/6/2/08	48	
(30)	NSCDC	TD/6/2/08	15	
(31)	Civil Defence Corps Decries Road Side Hawking of Petrol in Yenagoa	DC/6/2/08	28	
(32)	NSCDC Expose Vandals, Arrests Six Vandals	PU/16/6/08	28	
(33)	How to Avert Petroleum Pipeline Disaster	SPU/7/6/08		
(34)	Abia NSCDC Restates Resolve to Curb Pipeline Vandalism	DI/25/1/08	35	
(35)	NSCDC Partner Agencies over Vandalism	NA/25/1/08	36	
(36)	Six Pipeline Vandals Nabbed	DS/24/1/08	18	
(37)	24 Pipeline Vandals Arrested in Ogun	TB/21/1/08	10	
(38)	NSCDC Boss Decries Rate of Pipeline Vandalisation	NN/18/1/08	31	
(39)	Oil Bunkering: NSCDC Impounds 89 Tankers	PU/17/1/08	8	
(40)	Communities Want Lectures on Pipeline Vandalisation	DT/7/3/08	41	
(41)	NSCDC Seizes Eight Tankers, Nine Suspects over Illegal Bunkering	DI/21/2/08	metro	
(42)	Oil Bunkering: Naval Officers, Vandals Nabbed in Lagos	LD/21/2/08	31	
(43)	Civil Defence Corps Urged to Curb Vandalisation of Oil Facilities	DT/20/2/08	34	
(44)	NSCDC Arrests Nine, Impounds 297,000 Litres of Crude Oil	PU/19/2/08	11	
(45)	Five Illegal Bunkerers Arrested in Anambra	VG/19/2/08	14	
(46)	NSCDC's Campaign Against Vandalism	DI/5/2/08	metro	
(47)	. . . Loses N106m to Vandals NSCDC	LD/29/1/08	37	
(48)	Abia NSCDC Arrests Seven over Fake Fuel	DI/31/1/08		
(49)	NSCDC Discovers Illegal Fuel Outlet in Kano	LD/27/1/08	6	
(50)	8 Petrol Smugglers Arrested in Adamawa	TD/27/1/08	10	
(51)	Civil Defence, Communities to Check Vandalisation	AI/13/4/08	28	
(52)	9 Pipelines Vandals Arrested in Onitsha	VG/8/4/08	13	
(53)	Abia Records Drop in Pipeline Vandalism- NSCDC	NN/8/4/08	30	
(54)	Four Pipeline Vandals Arrested in Onitsha	VG/3/4/08	13	
(55)	NSCDC Canvasses Grassroots Role Against Vandalism	DT/3/4/08	8	
(56)	NSCDC Nab 300 Petroleum Pipeline	NN/1/4/08	40	
(57)	Defence Corps Impounds Six Kerosene-Laden Vehicles	DS/13/3/08	19	
(58)	Edo Civil Defence Wages War on Bunkering	ST/23/2/08	9	
(59)	Group Parleys NSCDC to Check Vandals	ST/23/2/08	19	
(60)	Civil Defence Arrests Petroleum Vandals	NDS/1/11/08	13	
(61)	Six in Civil Defence Net over Oil Bunkering, Three Tanker Loads Held	NDS/5/11/07	7	
(62)	27 Suspected Oil Thieves, 6 Policemen Arrested in Ogun	STD/3/11/07	6	

(63)	NSCDC to Tackle Vandals	NA/19/3/07	42
(64)	NSCDC Apprehends 600 Vandals	NN/20/3/07	22
(65)	Another Pipeline Vandalized in Lagos	PU/24/3/07	
(66)	Civil Defence Arrests over 600 Vandals	DT/4/4/07	47
(67)	12 Pipeline Vandals for Prosecution In Adamawa	TD/26/7/07	7
(68)	Body Seeks N50m to Check Vandalisation	SC/28/7/07	4
(69)	NSCDC Parades 7 Pipeline Vandals	SI/25/11/07	A5
(70)	Pipeline Vandals Arrested	TB/23/11/07	32
(71)	Civil Defence Corps Recovers 114.4 LPFO Illegal Bunker	GU/16/7/08	65
(72)	NSCDC, Police to Flush Out Vandals in Ekiti	TB/6/10/07	6
(73)	NSCDC Recovers 100m Stolen Crude	NN/2/7/08	40
(74)	NSCDC Plans to Publish Prominent Nigeria Oil Barons	VG/18/7/08	6
(75)	Pipeline Explosion Victim Loses Legs	DT/19/2/07	29
(76)	Experts Propose Stiffer Sanctions for Pipeline Vandals	VG/17/2/07	8
(77)	NSCDC Moves to Stop Vandalisation	LD/8/2/07	
(78)	Civil Defence Corps Nab 4 Vandals in Dikwa	ND/9-15/7/07	4
(79)	Thieves Destroy Petroleum Pipeline in Ibadan	TB/22/6/07	
(80)	NSCDC Lays Siege on Vandals	NW/18-25/6/0	3
(81)	Civil Defence Nabs Seven Vandals in Kwara	DT/15/6/0	13
(82)	300 Petroleum Vandals Arrested by NSCDC to Face Prosecution	BD/3/4/07	7
(83)	7 Suspected Pipeline Vandals Arrested in Kwara	TB/13/6/07	50
(84)	Civil Defence Combats Vandalisation of Government Property	LD/6/6/07	16
(85)	NSCDC Boss Tasks Men on Vandalisation	DC/4/6/07	8
85)	NSCDC Boss Tasks Men on Vandalisation	DC/4/6/07	8
(86)	Villagers Flee as Bunkerers Threatens Edo Community	SVG/2/6/07	6
(87)	NSCDC Warns Pipeline Vandals in Kwara	NM/8/8/07	17
(88)	Defence Corps Nabs Seven Pipeline Vandals	GU/8/8/07	58
(89)	NSCDC Chief Tasks Youth on Vandalism	NN/4/8/07	3
(90)	NSCDC Nabs Oil Thief	TB/6/8/07	31
(91)	Pipeline Vandals Arrested	SS/6/10/07	12
(92)	Abia Leads in Pipeline Vandalisation, Oil Bunkering	SM/9/9/07	6
(93)	NSCDC Warns Vandals	NN/19/8/07	36
(94)	NSCDC Nabs Four Suspects	PU/29/8/07	8
(95)	It's a Set-Up	DS/3/9/07	27
(96)	Pipeline Vandalisation- One Arrested, Two Tankers Impounded	STB/2/9/07	8
(97)	Police Intercept Pipeline Vandals	DS/4/9/07	3
(98)	Defence Corps to Unmask Sponsors of Pipeline Vandals	GU/8/3/07	
(99)	Suswan Urges LGs to support NSCDC	NN/3/4/07	19

(100)	NSCDC Decries High Rate of Vandalism	NAW/27/2/07	23
(101)	NSCDC Arrests 6 Pipeline s to Protect Pipelines in Abia	VG/21/12/07	13
(114)	Civil Defence Corps Arrests Fuel Thieves at River Niger Bank, Uncovers Bid to Free Culprits	DS/26/12/07	36
(115)	NSCDC Nab Tanker Drivers, Others over Pipeline Vandalisation	VG/18/12/07	13
(116)	Abia NSCDC Arrests Six Vandals	DI/14/12/07	
(117)	NSCDC Places Operatives on Alert over Vandalism	TB/12/12/07	
(118)	Police Parades Pipeline Vandals	DS/20/11/07	40
(119)	Civil Defence Partners DPR on Illegal Fuel Stations	LD/22/11/07	8
(120)	10 Suspected Bunkerers Arrested	NA/21/11/07	43
(121)	NSCDC Nabs 9 Pipeline Vandals, Impounds 4 Tankers Loaded	VG/22/11/07	10
(123)	Civil Defence Corps Arrest 81 Oil Thieves, Vandals in Rivers	TB/7/12/07	33
(124)	Civil Defence Corps Promises to Eject Vandals	LD/6/7/07	14
(125)	Pipeline Vandals in Soup	DS/28/6/07	18
(126)	NSCDC Threatens to Hit Hard on Vandals	TB/28/5/007	10
(127)	Easter: NSCDC Warns Against Pipeline Vandalisation	DT/6/4/07	3
(128)	NSCDC Arrests 5 Petroleum Smugglers	NN/12/1/08	3
(129)	Surulere: Face-to-Face with Cruel Tanker Fire	DI/8/10/07	11
(130)	Civil Defence Corps not Police Nabbed Pipeline Vandals	DS/14/9/07	12
(131)	Tanker Driver; Conductor Arrested for Illegal Bunkering	LD/28/7/08	14
(132)	3 Arrested over Fuel Diversion in Ekiti	DS/25/7/08	2
(133)	War on Vandals is a Must Win— Abolurin	NM/28/7/08	24
(134)	Trouble Diesel Can Cause	GU/24/7/08	15
(135)	EFCC Holds 7 Suspects over Illegal Bunkering	NW/7-14/7/08	15
(136)	Kogi NSCDC Arrests 4 Bunkerers	SS/15/9/07	11
(137)	FCT Army Boss Commends NSCDC for Battling Vandals	DT/25/9/07	41
(138)	Villagers Stop Vandals from Vandalizing Pipeline at Abaji	DT/25/6/08	47
(139)	Crime File:- Two Pipeline Vandals Nabbed	LD/31/7/08	39
(140)	NSCDC Nabs Illegal Oil Bunkerers In Lagos	TB/20/8/08	24
(141)	NSCDC Committed to Curbing Activities of Vandals	SVG/28/6/08	8
(142)	4 Oil Thieves Arrested	TB/30/6/07	7
(143)	Civil Defence Officers, Others Shot Dead over Illegal Bunkering	CP/15/8/08	27
(144)	Nabs Suspected Vandals	NM/1/9/08	15
(145)	200 Vandals, 72 Fuel Tankers Arrested in Lagos in 6 Months	TB/7/7/08	10
(146)	Group Vows to End Pipeline Vandalism	DI/26/8/08	12

(147)	NSCDC Nabs Illegal Oil Bunkerers in Lagos	TB/20/8/08	24
(148)	SPDC Insincere in Prosecution of Petroleum Vandals- NSCDC	NDS/20/8/08	24
(149)	NSCDC Nabs Bunkerers	NN/13/8/08	1/2
(150)	Oil Bunkering: Trial of Filipinos Resumes Today	VG/13/8/08	12
(151)	Civil Defence Nabs Pipeline Vandals in Abia	TB/9/7/08	24
(152)	Civil Defence Recovers Barges of Black Oil in Lagos	NM/21/7/08	33
(153)	NSCDC Declare War against Vandals	SI/20/7/08	
(154)	Civil Defence Arrest 400 Oil Bunkerers	NM/22/7/08	
(155)	2 in Civil Defence Net over 790 Litres of Condensate	NAP/29/10/07	5
(156)	Civil Defence Nabs 81 Pipeline Vandals, Bunkerers	DT/10/12/07	52
(157)	NSCDC Impounds 37 Vehicles Loaded with Petroleum	NN/8/12/07	32
(158)	PHCN, NSCDC Team Up to Fight Vandalisation	DS/15/4/08	3
(159)	NSCDC Recovers Stolen Transformers	NW/26/5/08	1-2
(160)	Civil Defence to Fight PHCN Vandals	NDS/6/3/08	
(161)	NSCDC Parades Suspected PHCN Vandals	DT/11/7/08	36
(162)	NNPC, PHCN Staff Abets Vandalisation-NSCDC	DT/18/7/07	13
(163)	Ondo NSCDC Commandant Accuses Cable Union	NN/13/8/07	23
(164)	Man, 30, in Police Net for Stealing	NN/7/11/07	26
(165)	Kaduna NSCDC Hands over Recovered Cables, Insulators to PHCN	DI/11/6/07	
(166)	NSCDC Intercepts Trailer-Load of Cables and Iron	DS/11/8/08	3
(167)	We are Battle Ready, NSCDC tells Vandals	NST/14/2/09	18
(168)	4 Men Arrested for Alleged Vandalism	NN/17/2/09	30
(169)	NSCDC Moves against Vandalism		
	..As operatives swoop on bunkers hideout in PH	ND/16/2/09	39
(170)	NSCDC starts fresh Onslaught on Pipeline Vandals	PU/23/1/09	56
(171)	Civil Defence Corps Arrest Vandals	THD/30/9/08	11
(172)	Ijegun Pipeline Explosion: Victims ask for Justice	VG/7/10/08	7
(173)	Security Operatives still Aid Illegal Bunkering	VG/31/10/08	14
(174)	Oil Bunkering worries Ondo Civil Defence Corps	NM/31/10/08	9
(175)	Civil Defence Corps sight 188 Boats owned by 'Bunkerers'	VG/24/10/08	9
(176)	NSCDC Deplores Vandals	LDS/2/11/08	7
(177)	NSCDC Officials Seal Vandalised Water Pipe	LD/2/2/09	24
(178)	NSCDC Parades Seven Suspected Pipeline Vandals in Abuja	TD/6/12/07	43
(179)	Bunkering: Police Deny 6 Civil Defence Corps		
	Operatives bail	VG/13/10/08	8
(180)	8 Suspected Vandals Arrested in Ebonyi	TB/23/3/09	26
(181)	PPMC Solicits NSCDC support on Vandalism	TD/30/3/09	9
(18 2)	NSCDC Arrest 2 Persons with 45,000 Litres		

	of Petroleum Product	NN/27/3/09	24
(183)	Bunkerers Depot found in Lagos		
	NSCDC Arrests 5·		
	Rejects N1.5 Million Bribe	SM/28/3/09	20
(184)	NSCDC Clamps down on Pipeline Vandal	ND/13/10/08	39
(185)	NSCDC Arrests 16 Pipeline Vandals	NDS/2/4/09	17
(186)	NSCDC Officials Intercept Oil Thieves	PU/7/4/09	9
(187)	Conoil Tanker Impounded over Adulterated Fuel	SAM/15/11/08	14
(188)	Civil Defence Flags Off Anti-vandalisation		
	Workshop in FCT	LD/18/3/09	30
(189)	Economic and Financial Crimes Commission		
	(Pipeline Vandalism and Miscellaneous Unit)	THD/18/3/09	56
(190)	End-game for Five Illegal Bunkerers in Oyo	TN/19/1/09	A5
(191)	NSCDC Wages War against Vandals	PM/17/1/09	10
(192)	NSCDC Men Arrest 20 Under-aged Children		
	Vandals in Yola	SAM/17/1/09	3
(193)	should Report any Act of Vandalism - NSCDC	LD/9/3/09	28
(194)	NSCDC Nabs NNPC Pipeline Vandal in Lagos	ND/23/2/09	40
(195)	Police Intercept 160 Jerry Cans of Petroleum Products	NM/23/2/09	25
(196)	Village Head, 12 others Arrested over Pipeline		
	Vandalisation	NN/21/2/09	3
(197)	Police Step up Fight against Pipeline Vandalisation	DS/19/2/09	33
(198)	NSCDC, Vandals and the Way Forward	LDS/11/1/09	62
(199)	NSCDC Nabs 5 Vandals, seizes 170 Kegs of Petrol	JTD/6/1/09	5
(200)	FG will Address Problem of Pipeline		
	Vandalism, says Minister	LD/27/1/09	15
(201)	Pipeline Vandalism: NNPC, Total Trade Blames	PU/29/1/09	30
(202)	NSCDC Impounds Four Adulterated Fuel Tankers	TN/12/2/09	6
(203)	Vandals Arrested	TN/10/12/08	6
(204)	Man Bags 7 Years for Pipeline Vandalism	TB/10/12/08	6
(205)	Fuel Pipeline Catches Fire, Merchant Navy		
	Arrests Vandals	PU/6/12/08	13
(206)	Pipeline Vandals Attack Security Men in Edo	DI/5/12/08	A6
(207)	NSCDC, Vandalisation and the Way		
	Forward in the 21st Century	LDS/21/12/08	73
(208)	Three in NSCDC's Net for Pipeline Vandalisation	ND/22/12/08	48
(209)	NSCDC Arrests 7 Fuel Thieves, Fake MOPOL	DI/6/12/07	2
(210)	No Hiding Place for Vandals- NSCDC	NM/5/2/09	4

(211)	Civil Defence Adopts New Strategy to Battle Vandals	NM/2/12/09	24
(212)	Ebonyi NSCDC Impounds Adulterated Fuel	CP/12/10/08	10
(213)	Civil Defence, Cable Vandal in Game of Wits in Kano	STT/22/3/09	43
(214)	Vandals Remove Electricity Cables in Katsina	DCH/1/04/09	23

Key

S/N: Serial Number

RC: Reference Code

RN: Reference Page Number

News Source

Code	**Source**
PU	*The Punch*
LD	*Leadership*
TD	*Daily Trust*
VG	*The Vanguard*
NAN	News Agency of Nigeria (NAN)
NN	*New Nigeria*
SI	*Saturday Independent*
WN	*Weekly News*
NDS	*Niger Delta Standard*
DC	*Daily Compass*
AI	*Abuja Inquirer*
NM	*National Mirror*
DI	*Daily Independent*
DS	*Daily Sun*
DH	*The Herald*
GU	*The Guardian*
NT	*Nigerian Tribune*
SPU	*Saturday Punch*
WT	*Weekly Trust*
ST	*Saturday Tribune*

NW	*Newswatch*
BD	*Business Day*
SVG	*Saturday Vanguard*
SVG	*Saturday Vanguard*
SS	*Saturday Sun*
SM	*Sunday Mirror*
SAM	*Saturday Mirror*
NAW	*National Watch*
LBT	*The Liberator*
CP	*Compass*
NP	*New Page*
NM	*National Mirror*
DT	*Daily Times*
SC	*Sunday Champion*
ND	*National Daily*
NAP	*National Pilot*
FF	*Fresh Facts*
AG	*New Age*
TW	*The Westerner*
SUS	*Sunday Sun*
ARG	*The National Argus*
EM	*The Express Mail*
ABJ	*Abuja News Week*
DET	*National Detective*
STW	*Stewardship*
KJ	*Kwara Journal*
NL	*National Life*

Role of NSCDC in Private Guard Company Regulation

S/No	Title	Newspaper	Page No
(1)	NSCDC Advises Security Operators	LD/21/4/08	14
(2)	NSCDC Advises Security Operators	NDS/22/4/08	13
(3)	FG Reads Riot Act to Private Guard Firms	DC/25/4/08	41
(4)	FG Designs Fresh Approach to Security	BD/25-27/4/08	6
(5)	NSCDC Boss, others Harp on National Security	NDS/25/4/08	15
(6)	It's illegal to Operate Private Security Services-Foreigners Advised	NN/25/6/08	17
(7)	Crime Wave: Civil Defence Calls for Joint Efforts	NM/24/4/08	7
(8)	Abolurin Tasks Private Security Companies on Employees' Records	AI/28/4-4/5/08	27
(9)	NSCDC Seals Four Guard Companies in FCT	PU/16/5/08	5
(10)	NSCDC Seals off 10 Security Coys Private Guards	DS/26/5/08	3
(11)	NSCDC Clamps Down on Illegal Private Guards	DS/6/6/08	
(12)	NSCDC vows to Sanction Erring Private Guard Company	AI/10-16/3/08	28
(13)	Expose Illegal Private Guards- NSCDC Boss	NN/29/2/08	17
(14)	Defence Corps Streamlines Private Security Firms' Operations	GU/2/4/08	55
(15)	NSCDC makes N150m in Security Coy Registration	DT/24/3/08	8
(16)	NSCDC Closes down 10 Security Firms in Kwara	TB/25/2/08	8
(17)	Minister Threatens War Against Illegal Private Guards Operators	DS/7/9/07	10
(18)	NSCDC Warns Security Companies	PU/27/4/07	6
(19)	NSCDC Clamps Down on Illegal Security Coys	FF/9-15/7/07	4
(20)	Defence Corps Chief Task Private Security Firms on Quality Standards	GU/12/6/07	41
(21)	NSCDC Issues License to Private		

	Guard Companies	ID/14/4/07	6	
(22)	NSCDC Seals off Security Firms	DI/12/4/07		
(23)	NSCDC Threatens to close Private Security Outfits	NM/7/8/07	15	
(24)	NSCDC Seals off Two Private Security Firms in FCT	DT/5/10/07	35	
(25)	More Security Companies get Operational Licenses	DT/2/10/07	39	
(26)	NSCDC Boss Reads Riot Act to Security Firms	DI/9/8/07	A6	
(27)	NSCDC Boss Counsels on Security Regulations	TB/16/11/07	32	
(28)	Mushroom Security Firms Opt for Merger	ND/29/10-4/11/07		43
(29)	NSCDC Reaffirms Stand on Private Security Guards	TB/21/11/07	18	
(30)	Government Plans New Rules for Private Security Outfits	GU/6/7/07	7	
(31)	Civil Defence Seals up 8 Guard Companies	ND/11-17/16/07	4	
(32)	NSCDC Seals off Security Firms	TW/11/4/07	3	
(33)	NSCDC Boss Tasks Private Guards on Security	DI/9/10/07	4	
(34)	Private Guard Operators Get Licenses in Abuja,	LD/13/9/07	15	
(35)	NSCDC seals 10 Private Guard Firms	CP/9/7/08	17	
(36)	Civil Defence Corps officials seal Private Guard Companies	SM/13/8/08	9	
(37)	NSCDC clams on Illegal Security Firms in Lagos	TB/16/7/08	11	
(38)	NSCDC strides in Transforming Private Security Coy	ND/28/7/08	40	
(39)	NSCDC seals Illegal Guard Outfits	ND/28/7/08	40	
(40)	NSCDC PRO explains to Register Private Guard Firms	NN/24/7/08	24	
(41)	NSCDC to Close Down Illegal Private Guard Coy	AI/23-29/6/08		
(42)	NSCDC to close down Illegal Security outfits in A'Ibom	LD/26/6/08	28	

(43)	NSCDC to clampdown on Illegal Private Security Coy in Abia	FF/30/6/08	39
(44)	NSCDC clams down on 29 security firms	VG/18/8/08	8
(45)	Civil Defence seals 240 Private Guard Companies	DT/11/7/08	8
(46)	Training in the Private Industry	ND/25-29/8/08	39
(47)	NSCDC embarks on sealing of PGC	LD/10/7/08	14
(48)	Private Security Guards Deny Aiding Robbers	TN/18/7/08	11

Role of NSCDC in Disaster Management

S/N	Title	Newspaper	Page No.
1.	NSCDC to get involved in Disaster Management	AG/14/1/08	
2.	NSCDC to strengthen Rescue Management	NST/30/3/09	8
3.	How we managed Disasters – NSCDC Boss	TB/12/8/07	17
4.	NSCDC to strengthen Rescue Management	NST/30/3/09	8
5.	Recovery of missing plane: NSCDC Assure Nigerians	DT/24/3/08	15

Source: Abolurin Ade.2011. Civil Defence: Opportunities and Challenges in Leadership. Ibadan: Bookshelf Resources, pp.145-157.

Appendix 4

Interpretation of data

Interpretation of results of data analysis

Table: Gender Distribution

Gender	Frequency	Percentage
Male	590	62.8
Female	349	37.2
Total	939	100.0

Table: Age Distribution

Age (Years)	Frequency	Percentage
< 20	21	2.23
21-25	265	28.2
26-30	519	55.3
31-35	50	5.32
36-40	69	7.35
41+	15	1.60
Total	939	100.0

Table 4.4.: Distribution of respondents by number of years of work experience

Work experience (Years)	Frequency	Percentage
1-5	395	42
6-10	468	50
11-15	68	7.2
16-20	5	0.5
21-25	3	0.3
Total	939	100.0

Table 4.5: Distribution of respondents by educational qualification

Educational qualification	Frequency	Percentage
Ordinary National Diploma	177	18.8
Higher National	262	27.9

Diploma		
Bachelors' degree	358	38.1
Masters' degree	112	11.9
Doctor of Philosophy	3	0.3
Others	27	2.9
Total	939	100.0

Table …: Distribution of the respondents by Command

Command	Frequency	Percentage
Ondo	135	14.4
Osun	179	19.1
Oyo	208	22.2
Ogun	315	33.5
Ekiti	102	10.9
Total	939	100.0

Table…: above showed that 135(14.4%) of the respondents are from Ondo State, 179(19.1%) are from Osun State, 208(22.2%) are from Oyo State, 315(33.5%) are from Ogun State and 102(110.9%) are from Ekiti State.

Table …: Distribution of the respondents by Departments

Departments	Frequency	Percentage
Administrative	260	27.7
Operations	488	52.0
Intelligence	191	20.3
Total	939	100.0

Table…: above showed that 260(27.7%) of the respondents are staffs of the administrative department, 488(52.0%) are in the operations department and 191(20.3%) are in the intelligence department.

Table …: Distribution of the respondents by Ranks

Ranks	Frequency	Percentage
Corps Assistant	256	27.3
Inspectorate	357	38.0
Superintendent	277	29.5
Commandant	49	5.2
Total	939	100.0

Table …: above showed that 256(27.3%) of the respondents are Corps Assistants, 357(38.0%) are Inspectors, 277(29.5%) are Superintendents and 49 (5.2%) are commandants.

Table …: Distribution of the respondents by Command by Departments

Command	Departments			Total
	Administrative	Operations	Intelligence	
Ondo	44 32.6%	64 47.4%	27 20.0%	135 100.0%
Osun	47 26.3%	94 52.5%	38 21.2%	179 100.0%
Oyo	59 28.4%	98 47.1%	51 24.5%	208 100.0%
Ogun	78 24.8%	182 57.8%	55 17.5%	315 100.0%
Ekiti	32 31.4%	50 49.0%	20 19.6%	102 100.0%
Total	260 27.7%	488 52.0%	191 20.3%	939 100.0%

Table … above showed the distribution of the respondents by Command and Departments.

Table …: Distribution of the respondents by Command and Rank

Command	Rank				Total
	Corps Assistant	Inspectorate	Superintendent	Commandant	
Ondo	32 23.7%	56 41.6%	40 29.6%	7 5.2%	135 100.0%
Osun	50 27.9%	67 37.4%	52 29.1%	10 5.6%	179 100.0%
Oyo	52 25.0%	81 38.9%	63 30.3%	12 5.8%	208 100.0%
Ogun	93 29.5%	118 37.5%	90 28.6%	14 4.4%	315 100.0%
Ekiti	29 28.4%	35 34.3%	32 31.4%	6 5.9%	102 100.0%
Total	256 27.3%	357 38.0%	277 29.5%	49 5.2%	939 100.0%

Table … above showed the distribution of the respondents by Command and Rank.

Ho1: There is no significant relationship between Accessibility to ICT Tools and Security Management by NSCDC

Variable	Mean	Std. Dev.	N	R	P	Remark
Accessibility to ICT Tools	56.6028	12.9489	939	.550*	.000	Sig.
Security Management by NSCDC	35.0958	6.7989				

- Sig. at .05 level

It is shown in the above table that there was a positive significant relationship between Accessibility to ICT Tools and Security Management by NSCDC ($r = .550^*$, $N= 939$, $P < .05$).

It is observed from the result that provision of good Security Management by NSCDC enhanced Accessibility to ICT Tools.

Null hypothesis is rejected.

Ho2: There is no significant relationship between Security Management by NSCDC and Utilization of ICT Tools

Variable	Mean	Std. Dev.	N	R	P	Remark
Security Management by NSCDC	56.6028	12.9489	939	.543*	.000	Sig.
Utilization of ICT Tools	57.8275	19.0276				

- Sig. at .05 level

It is shown in the above table that there was a positive significant relationship between Security Management by NSCDC and Utilization of CIT Tools (r = .543*, N= 939, P < .05).

It is observed from the result that provision of good Security Management by NSCDC enhanced effective Utilization of ICT Tools in the study.

Null hypothesis is rejected.

H03: Accessibility and Utilisation of ICT will not have joint significant effect on Security Management by the Nigeria Security and Civil Defence Corps

Table : Joint effect of Accessibility and Utilisation of ICT on the Security Management by the Nigeria Security and Civil Defence Corps

R	R Square			Adjusted R Square	Std. Error of the Estimate	
.634	.414			.413	9.9226	
A N O V A						
Model	Sum of Squares	DF	Mean Square	F	Sig.	Remark
Regression	65122.207	2	32561.104	330.711	.000	Sig.
Residual	92156.626	936	98.458			
Total	157278.83	938				

Table … shows that the joint effect of the independent variables (Accessibility and Utilisation of ICT Tools) on Security Management by the Nigeria Security and Civil Defence Corps was significant. The table also shows a coefficient of multiple correlation (R = .634 and a multiple R^2 of .414. This means that 41.4% of the variance was accounted for by the predictor variables when taken together. The significance of the composite contribution was tested at P < .05. The table also shows that the analysis of variance (ANOVA) for the regression yielded a F-ratio of 330.711 (significant at 0.05 level). This implies that the joint contribution of the independent

variables to the dependent variable was significant and that other variables not included in this model may have accounted for the remaining variance.

H04: Accessibility and Utilisation of ICT will not have relative contribution on Security Management by the Nigeria Security and Civil Defence Corps

Table : Relative contribution of the independent variables (Accessibility and Utilisation of ICT) on Security Management by the Nigeria Security and Civil Defence Corps

Model	Unstandardized Coefficient		Stand. Coefficient	T	Sig.
	B	Std. Error	Beta Contribution		
(Constant)	16.226	1.725		9.407	.000
Accessibility to ICT Tools	.733	.053	.385	13.777	.000
Utilisation of ICT Tools	.254	.019	373	13.350	.000

Table … reveals the relative contributions of each of the independent variables (Accessibility to ICT Tools and Utilisation of ICT Tools) to the dependent variable, expressed as beta weights, viz:

Accessibility to ICT Tools($\beta = .385$, $P < .05$), significant relationship existed and

Utilisation of ICT Tools ($\beta = .373$, $P < .05$), significant relationship existed.

Table…..: Table showing the mean and S.D. of Security Management by NSCDC, Accessibility to ICT Tools and Utilization of ICT Tools

State	N	Security Management by NSCDC		Accessibility to ICT Tools/Gadgets		Utilisation ICT Tools/Gadgets	
		Mean	S.D.	Mean	S.D.	Mean	S.D.
Ondo	135	55.9630	9.6803	35.4667	5.9284	57.8074	13.9811
Osun	179	57.6872	9.9838	35.5475	4.2110	58.6425	15.5522
Oyo	208	63.1587	11.4596	37.3510	5.1712	64.4856	16.8623

Ogun	315	52.1471	15.7467	33.6857	9.0053	54.0127	23.8138
Ekiti	102	56.6028	7.8758	33.5686	4.9921	54.6275	13.5200

Above table shows the mean and Standard Deviation scores of Security Management, Accessibility and Utilisation of ICT and from the analysis.

Testing of Research Questions:

RQ…: What is the level of Accessibility to ICT Tools/Gadgets by Officers and Men of the Corps?

Table…: Level of Accessibility to ICT Tools/Gadgets by Officers and Men of the Corps

S/N	Items	SD	D	A	SA	Mean	S.D
1	NSCDC personnel have expertise in the use of ICT	107 11.4%	174 18.5%	475 50.6%	183 19.5%	2.78	.89
2	There are often stringent protocols to follow in deploying ICT	96 10.2%	197 21.0%	493 52.5%	153 16.3%	2.75	.85
3	Interpreting information produced by ICT gadget is easy	88 9.4%	231 24.6%	476 50.7%	144 15.3%	2.72	.83
4	NSCDC personnel apply for ICT when needed for any operational activity	124 13.2%	259 27.6%	428 45.6%	128 13.6%	2.60	.88
5	There is an expert in charge of maintenance and repair of ICT gadgets in each department	126 13.4%	236 25.1%	463 49.3%	114 12.1%	2.60	.87
6	Many officers have to sign before approving ICT for any operational activity	131 14.0%	296 31.5%	389 41.4%	123 13.1%	2.54	.89
7	The process of obtaining ICT for use is easy	174 18.5%	250 26.6%	398 42.4%	117 12.5%	2.49	.93
8	To retrieve data stored in ICT gadgets could be hard at times	134 14.3%	292 31.1%	429 45.7%	84 8.9%	2.49	.85
9	NSCDC personnel have free access to ICT when needed for operation in the Department	175 18.6%	322 34.3%	280 29.8%	162 17.3%	2.46	.98
10	Identifying which ICT gadget to use for which occasion often pose problem during operation	156 16.6%	325 34.6%	359 38.2%	99 10.5%	2.43	.89

11	NSCDC personnel find it difficult to operate some of the ICT gadgets during operations	145 15.4%	378 40.3%	322 34.3%	94 10.0%	2.39	.86
12	Data stored on ICT gadgets are often corrupt or infected by virus before retrieval	148 15.8%	405 43.1%	290 30.9%	96 10.2%	2.36	.87
13	Every personnel is aware of where to pick ICT gadgets	171 18.2%	373 39.7%	314 33.4%	81 8.6%	2.32	.87
14	Only senior officers are allowed to use ICT gadgets during operations	173 18.4%	505 53.8%	183 19.5%	78 8.3%	2.18	.83
	GRAND MEAN = 2.51						

Responses on the level of Accessibility to ICT Tools/Gadgets by Officers and Men of the Corps are as shown below:

NSCDC personnel have expertise in the use of ICT, (mean =2.78) ranked highest by the mean score rating and was followed by There are often stringent protocols to follow in deploying ICT, (mean =2.75), Interpreting information produced by ICT gadget is easy, (mean =2.72), NSCDC personnel apply for ICT when needed for any operational activity, (mean =2.60), There is an expert in charge of maintenance and repair of ICT gadgets in each department, (mean =2.60), Many officers have to sign before approving ICT for any operational activity, (mean =2.54), The process of obtaining ICT for use is easy, (mean =2.49), To retrieve data stored in ICT gadgets could be hard at times, (mean =2.49), NSCDC personnel have free access to ICT when needed for operation in the Department, (mean =2.46), Identifying which ICT gadget to use for which occasion often pose problem during operation, (mean =2.43), NSCDC personnel find it difficult to operate some of the ICT gadgets during operations, (mean =2.39), Data stored on ICT gadgets are often corrupt or infected by virus before retrieval, (mean =2.36), Every personnel is aware of where to pick ICT gadgets, (mean =2.32) and lastly by Only senior officers are allowed to use ICT gadgets during operations, (mean =2.18).

RQ…: How accessible are the ICT Tools/Gadgets in daily Operations by Officers and Men of the Corps?

Table…: Accessibility of the ICT Tools/Gadgets in daily Operations by Officers and Men of the Corps

S/N	Items	Not at all	Moderate	Low	Very High	Mean	S.D
1	Computers	93 9.9%	139 14.8%	379 40.4%	328 34.9%	3.00	.95
2	Mobile phones	193 20.6%	111 11.8%	152 16.2%	483 51.4%	2.99	1.21
3	Laptops	127 13.5%	164 17.5%	297 29.7%	369 39.3%	2.95	1.05
4	Email	140 14.9%	146 15.5%	345 36.7%	308 32.8%	2.87	1.03
5	Internet facilities	152 16.2%	205 21.8%	357 38.0%	225 24.0%	2.70	1.01
6	Television set	188 20.0%	209 22.3%	275 29.3%	267 28.4%	2.66	1.09
7	Photocopiers	208 22.2%	221 23.5%	295 31.4%	215 22.9%	2.55	1.07
8	Video camera	247 26.3%	188 20.0%	306 32.6%	198 21.1%	2.48	1.09
9	Scanners	222 23.6%	261 27.8%	259 27.6%	197 21.0%	2.46	1.07
10	Audiotapes	238 25.3%	221 23.5%	350 37.3%	130 13.8%	2.40	1.01
11	Multimedia projector	270 28.8%	257 27.4%	297 31.6%	115 12.2%	2.27	1.01
12	Interactive radio	313 33.3%	234 24.9%	281 29.9%	111 11.8%	2.20	1.03
13	Landline phones	334 35.6%	265 28.2%	188 20.0%	152 16.2%	2.17	1.08

14	Camera pens	303 32.3%	281 29.9%	246 26.2%	109 11.6%	2.17	1.01
15	Fax machines	401 42.7%	243 25.9%	117 12.5%	178 19.0%	2.08	1.14
16	Wrist phones	343 36.5%	282 30.0%	228 24.3%	86 9.2%	2.06	.99
17	Radios (walkie-talkies)	370 39.4%	291 31.0%	171 18.2%	107 11.4%	2.02	1.02
18	Video sunglasses	391 41.6%	312 33.2%	168 17.9%	68 7.2%	1.91	.94
19	CCTV	438 46.6%	255 27.2%	143 15.2%	103 11.0%	1.91	1.02
20	Teleconferencing	410 43.7%	285 30.4%	172 18.3%	72 7.7%	1.90	.96
21	Electronic whiteboards	440 46.9%	261 27.8%	143 15.2%	95 10.1%	1.89	1.01
22	Crime maps	457 48.7%	233 24.8%	160 17.0%	89 9.5%	1.87	1.01
23	Language translators	474 50.5%	249 26.5%	137 14.6%	79 8.4%	1.81	.98
24	In-car camera systems	475 50.6%	244 26.0%	155 16.5%	65 6.9%	1.80	.95
25	Graffiti (Surveillance) cameras	458 48.8%	264 28.1%	160 17.0%	57 6.1%	1.80	.93
26	Infrared (Thermographic) cameras	525 55.9%	225 24.0%	128 13.6%	61 6.5%	1.71	.93
27	Thermal imagers	532 56.7%	241 25.7%	111 11.8%	55 5.9%	1.67	.90
28	Speed enforcement (safety) camera	575 61.2%	202 21.5%	92 9.8%	70 7.5%	1.63	.94

29	Automatic License Plate Recognition (ALPR)	591 62.9%	181 19.3%	106 11.3%	61 6.5%	1.61	.92
	GRAND MEAN = 2.19						

Responses on how accessible are the ICT Tools/Gadgets in daily Operations by Officers and Men of the Corps are as shown below:

Computers, (mean =3.00) ranked highest by the mean score rating and was followed by Mobile phones, (mean =2.99), Laptops, (mean =2.95), Email, (mean =2.87), Internet facilities, (mean =2.70), Television set, (mean =2.66), Photocopiers, (mean =2.55), Video camera, (mean =2.48), Scanners, (mean =2.46), Audiotapes, (mean =2.40), Multimedia projector, (mean = 2.27), Interactive radio, (mean =2.20), Landline phones, (mean =2.17), Camera pens, (mean =2.17), Fax machines, (mean =2.08), Wrist phones, (mean =2.06), Radios (walkie-talkies), (mean =2.02),Video sunglasses, (mean =1.91), CCTV, (mean =1.91), Teleconferencing, (mean =1.90), Electronic whiteboards, (mean =1.89), Crime maps, (mean =1.87), Language translators, (mean =1.81), In-car camera systems, (mean =1.80), Graffiti (Surveillance) cameras, (mean =1.80), Infrared (Thermographic) cameras, (mean =1.71), Thermal imagers, (mean =1.67), Speed enforcement (safety) camera, (mean =1.63) and lastly by Automatic License Plate Recognition (ALPR), (mean =1.61).

RQ…: What is the level of Utilisation of ICT Tools/Gadgets in Security Operation by Officers and Men of the Corps?

Table…: Level of Utilisation of ICT Tools/Gadgets in Security Operation by Officers and Men of the Corps

S/N	Items	Never utilised	Occasionally utilised	Highly utilised	Very highly utilised	Mean	S.D
1	Computers	143 15.2%	176 18.7%	347 37.0%	273 29.1%	2.80	1.02
2	Laptops	162 17.3%	189 20.1%	328 34.9%	260 27.7%	2.73	1.05
3	Mobile phones	257 27.4%	127 13.5%	222 23.6%	333 35.5%	2.67	1.22
4	Email	166 17.7%	239 25.5%	295 31.4%	239 25.5%	2.65	1.05
5	Internet facilities	158 16.8%	261 27.8%	292 31.1%	228 24.3%	2.63	1.03
6	Television set	257 27.4%	213 22.7%	237 25.2%	232 24.7%	2.47	1.14
7	Photocopiers	255 27.2%	178 19.0%	329 35.0%	177 18.8%	2.46	1.08
8	Scanners	273 29.1%	257 27.4%	236 25.1%	173 18.4%	2.33	1.08
9	Landline phones	335 35.7%	210 22.4%	220 23.4%	174 18.5%	2.25	1.13
10	Audiotapes	299 31.8%	332 35.4%	195 20.8%	113 12.0%	2.13	1.00
21	Video camera	339 36.1%	310 33.0%	182 19.4%	108 11.5%	2.06	1.01

22	Camera pens	354 37.7%	288 30.7%	201 21.4%	96 10.2%	2.04	1.00
23	Multimedia projector	326 34.7%	374 39.8%	147 15.7%	92 9.8%	2.01	.95
24	Fax machines	428 45.6%	233 24.8%	135 14.4%	143 15.2%	1.99	1.10
25	Interactive radio	420 44.7%	297 31.6%	153 16.3%	69 7.3%	1.86	.94
26	Radios (walkie-talkies)	457 48.7%	240 25.6%	176 18.7%	66 7.0%	1.84	.96
27	Wrist phones	426 45.4%	327 34.8%	129 13.7%	57 6.1%	1.81	.89
28	CCTV	522 55.6%	236 25.1%	112 11.9%	69 7.6%	1.71	.94
29	Video sunglasses	500 53.2%	276 29.4%	112 11.9%	51 5.4%	1.70	.88
20	Teleconferencing	515 54.8%	275 29.3%	93 9.9%	56 6.0%	1.67	.88
21	Crime maps	548 58.4%	232 24.7%	111 11.8%	48 5.1%	1.64	.88
22	Electronic whiteboards	555 59.1%	235 25.0%	90 9.6%	59 6.3%	1.63	.90
23	Language translators	568 60.5%	211 22.5%	108 11.5%	52 5.5%	1.62	.89
24	In-car camera systems	588 62.6%	223 23.7%	79 8.4%	49 5.2%	1.56	.85
25	Thermal imagers	601 64.0%	200 21.3%	100 10.6%	38 4.0%	1.55	.84
26	Infrared (Thermographic) cameras	607 64.6%	201 21.4%	94 10.0%	37 3.9%	1.53	.83

27	Graffiti (Surveillance) cameras	613 65.3%	203 21.6%	87 9.3%	36 3.8%	1.52	.82
28	Speed enforcement (safety) camera	630 67.1%	185 19.7%	86 9.2%	38 4.0%	1.50	.82
29	Automatic License Plate Recognition (ALPR)	659 70.2%	153 16.3%	83 8.8%	44 4.7%	1.48	.84
	GRAND MEAN = 2.01						

Responses on the level of Utilisation of ICT Tools/Gadgets in Security Operation by Officers and Men of the Corps are as shown below:

Computers, (mean =2.80) ranked highest by the mean score rating and was followed by Laptops, (mean =2.73), Mobile phones, (mean =2.67), Email, (mean =2.65), Internet facilities, (mean =2.63), Television set, (mean =2.47), Photocopiers, (mean =2.46), Scanners, (mean =2.33), Landline phones, (mean =2.25), Audiotapes, (mean =2.13), Video camera, (mean =2.06), Camera pens, (mean =2.04), Multimedia projector, (mean =2.01), Fax machines, (mean =1.99), Interactive radio, (mean =1.86), Radios (walkie-talkies), (mean =1.84), Wrist phones, (mean =1.81), CCTV, (mean =1.71), Video sunglasses, (mean =1.70), Teleconferencing, (mean =1.67), Crime maps, (mean =1.64), Electronic whiteboards, (mean =1.63), Language translators, (mean =1.62), In-car camera systems, (mean =1.56), Thermal imagers, (mean =1.55), Infrared (Thermographic) cameras, (mean =1.53), Graffiti (Surveillance) cameras, (mean =1.52), Speed enforcement (safety) camera, (mean =1.50) and lastly by Automatic License Plate Recognition (ALPR), (mean =1.48).

RQ …: How often are the ICT tools/Gadgets Utilized by Officers and Men of the Corps?

Table …: Frequency of ICT tools/Gadgets Utilized by Officers and Men of the Corps

S/N	Items	Never	Monthly	< 3 times a week	2-3 times a week	At least once a week	daily	Mean	S.D
1	Laptops	202 21.5%	69 7.3%	70 7.5%	57 6.1%	103 11.0%	438 46.6%	4.18	2.06
2	Internet facilities	205	99	95	51	89	400	3.98	2.07

		21.8%	10.5%	10.1%	5.4%	9.5%	42.6%		
3	Computers	214 22.8%	81 8.6%	139 14.8%	67 7.1%	72 7.7%	366 39.0%	3.85	2.04
4	Mobile phones	290 30.9%	71 7.6%	45 4.8%	52 5.5%	42 4.5%	439 46.8%	3.85	2.24
5	Email	217 23.1%	132 14.1%	82 8.7%	82 8.7%	112 11.9%	314 33.4%	3.73	2.03
6	Photocopiers	251 26.7%	77 8.2%	97 10.3%	74 7.9%	175 18.6%	265 28.2%	3.68	2.01
7	Television set	312 33.2%	77 8.2%	118 12.6%	69 7.3%	50 5.3%	313 33.3%	3.43	2.12
8	Scanners	325 34.6%	106 11.3%	88 9.4%	140 14.9%	100 10.6%	180 19.2%	3.13	1.95
9	Landline phones	384 40.9%	77 8.2%	75 8.0%	80 8.5%	129 13.7%	194 20.7%	3.08	2.05
10	Video camera	382 40.7%	121 12.9%	130 13.8%	73 7.8%	97 10.3%	136 14.5%	2.78	1.87
11	Audiotapes	413 44.0%	132 14.1%	114 12.1%	70 7.5%	93 9.9%	117 12.5%	2.63	1.83
12	Camera pens	430 45.8%	108 11.5%	127 13.5%	76 8.1%	79 8.4%	119 12.7%	2.60	1.83
13	Fax machines	472 50.3%	150 16.0%	58 6.2%	44 4.7%	59 6.3%	156 16.6%	2.51	1.93
14	Multimedia projector	411 43.8%	231 24.6%	56 6.0%	88 9.4%	90 9.6%	63 6.7%	2.37	1.64
15	Wrist phones	482 51.3%	92 9.8%	154 16.4%	58 6.2%	67 7.1%	86 9.2%	2.35	1.71
16	Interactive radio	479 51.0%	151 16.1%	75 8.0%	74 7.9%	80 8.5%	80 8.5%	2.32	1.71
17	Radios (walkie-	499	165	66	52	53	104	2.26	1.74

	talkies)	53.1%	17.6%	7.0%	5.5%	5.6%	11.1%		
18	Video sunglasses	519 55.3%	102 10.9%	132 14.1%	52 5.5%	54 5.8%	80 8.5%	2.21	1.66
19	CCTV	575 61.2%	88 9.4%	101 10.8%	39 4.2%	57 6.1%	79 8.4%	2.10	1.66
20	Teleconferencing	557 59.3%	141 15.0%	52 5.5%	60 6.4%	84 8.9%	45 4.8%	2.05	1.57
21	Electronic whiteboards	537 57.2%	166 17.7%	79 8.4%	43 4.6%	53 5.6%	61 6.5%	2.03	1.55
22	In-car camera systems	599 63.8%	77 8.2%	133 14.2%	30 3.2%	42 4.5%	58 6.2%	1.95	1.52
23	Language translators	589 62.7%	97 10.3%	100 10.6%	44 4.7%	43 4.6%	66 7.0%	1.99	1.57
24	Crime maps	559 59.5%	156 16.6%	72 7.7%	41 4.4%	46 4.9%	65 6.9%	1.99	1.55
25	Graffiti (Surveillance) cameras	614 65.4%	94 10.0%	104 11.1%	33 3.5%	41 4.4%	53 5.6%	1.88	1.4
26	Thermal imagers	610 65.0%	138 14.7%	54 5.8%	38 4.0%	44 4.7%	55 5.9%	1.86	1.49
27	Infrared (Thermographic) cameras	635 67.6%	88 9.4%	97 10.3%	24 2.6%	36 3.8%	59 6.3%	1.84	1.49
28	Speed enforcement (safety) camera	664 70.7%	66 7.0%	93 9.9%	29 3.1%	41 4.4%	46 4.9%	1.78	1.44
29	Automatic License Plate Recognition (ALPR)	684 72.8%	58 6.2%	95 10.1%	24 2.6%	31 3.3%	47 5.0%	1.72	1.40
	GRAND MEAN = 2.63								

Responses on how often are the ICT tools/Gadgets Utilized by Officers and Men of the Corps are as shown below:

Laptops, (mean =4.18) ranked highest by the mean score rating and was followed by Internet facilities, (mean =3.98), Computers, (mean =3.85), Mobile phones, (mean =3.85), Email, (mean =3.73), Photocopiers, (mean =3.68), Television set, (mean =3.43), Scanners, (mean =3.13), Landline phones, (mean =3.08), Video camera, (mean =2.78), Audiotapes, (mean =2.63), Camera pens, (mean =2.60), Fax machines, (mean =2.51), Multimedia projector, (mean =2.37), Wrist phones, (mean =2.35), Interactive radio, (mean =2.32), Radios (walkie-talkies), (mean =2.26), Video sunglasses, (mean =2.21), CCTV, (mean =2.10), Teleconferencing, (mean =2.05), Electronic whiteboards, (mean =2.03), In-car camera systems, (mean =1.95), Language translators, (mean =1.99), Crime maps, (mean =1.99), Graffiti (Surveillance) cameras, (mean =1.88), Thermal imagers, (mean =1.86), Infrared (Thermographic) cameras, (mean =1.84), Speed enforcement (safety) camera, (mean =1.78) and lastly by Automatic License Plate Recognition (ALPR), (mean =1.72).

RQ…: How effective was the Security Management of the NSCDC in deploying ICT Tools/Gadgets in various work activities

Table …: Effectiveness of the Security Management of the NSCDC in deploying ICT Tools/Gadgets in various work activities

S/N	Items	SD	D	A	SA	Mean	S.D
1	Data of officers and men can easily be compiled and processed for management purposes through the use of ICTs	108 11.5%	71 7.6%	443 47.2%	317 33.8%	3.03	.93
2	ICT tools are essential in maintenance of peace and order	108 11.5%	143 15.2%	421 44.8%	267 28.4%	2.90	.94
3	Issues with delayed and unpaid salaries have greatly reduced as a result of ICT infrastructure of NSCDC	124 13.2%	140 14.9%	468 49.8%	207 22.0%	2.81	.93
4	Arrest of suspects can be enhanced by deploying ICTs	116 12.4%	152 16.2%	475 50.6%	196 20.9%	2.80	.91
5	Signals and other security information are better transmitted through ICTs than	160 17.0%	92 9.8%	476 50.7%	211 22.5%	2.79	.98

	other conventional means						
6	ICT has made security report better protected from unauthorized access	145 15.4%	152 16.2%	422 44.9%	220 23.4%	2.76	.98
7	Taking of statements of suspects and witnesses have become easier with the use of ICTs	121 12.9%	173 18.4%	455 48.5%	190 20.2%	2.76	.92
8	ICT tools are easily deployed to prevent escape from custody	129 13.%	189 20.1%	453 48.2%	168 17.9%	2.70	.92
9	ICT tools will greatly enhance admissibility of evidence during prosecutions	146 15.5%	176 18.7%	429 45.7%	188 20.0%	2.70	.96
10	During searches and rescue operations, officers and men are mobilized with ICT gadget(s) required for the operation	153 16.3%	218 23.2%	375 39.9%	193 20.6%	2.65	.98
11	Posting of officers to beats has been made easier through ICTs	196 20.9%	147 15.7%	421 44.8%	175 18.6%	2.61	1.01
12	The Corps uses ICT tools in maintaining 24 hours surveillance over infrastructures, sites and projects for the Federal, State and Local Government	140 14.9%	283 30.1%	319 34.0%	197 21.0%	2.61	.98
13	NSCDC anti-vandalism drive has been better enhanced by deployment of ICTs	140 14.9%	265 28.2%	369 39.3%	165 17.6%	2.60	.94
14	In cases of riots and civil disorders, ICT gadgets and tools are not usually deployed by NSCDC personnel	152 16.2%	301 32.1%	323 34.4%	163 17.4%	2.53	96
15	The war against terror can only be won by the use of ICTs by NSCDC personnel	163 17.4%	256 27.3%	386 41.1%	134 14.3%	2.52	.94
16	ICT tools have not contributed to efficient monitoring of Private Guard	176 18.7%	317 33.8%	340 36.2%	106 11.3%	2.40	.92

	Companies across the state						
17	As a matter of policy, the Corps deploys ICT tools to a large extent in its various operational activities	184 19.6%	311 33.1%	342 36.4%	102 10.9%	2.39	.92
18	In detecting and demarcating danger areas, ICT tools are not required by the NSCDC	213 22.7%	324 34.5%	262 27.9%	140 14.9%	2.35	.99
19	To safeguard critical national assets and infrastructures (CNAIs), ICT tools are not required	259 27.6%	304 32.4%	224 23.9%	152 16.2%	2.29	1.04
20	ICT tools are not required to forestall criminal activities	225 24.0%	332 35.4%	285 30.4%	97 10.3%	2.27	.94
21	ICT is not required in accurate record keeping of exhibits	289 30.8%	312 33.2%	271 28.9%	67 7.1%	2.12	.93
22	In disseminating intelligence, ICT is not required	330 35.1%	325 34.6%	226 24.1%	58 6.2%	2.01	.92
	GRAND MEAN = 2.57						

Responses to how effective was the Security Management of the NSCDC in deploying ICT Tools/Gadgets in various work activities are as shown below:

Data of officers and men can easily be compiled and processed for management purposes through the use of ICTs, (mean =3.03) ranked highest by the mean score rating and was followed by ICT tools are essential in maintenance of peace and order, (mean =2.90), Issues with delayed and unpaid salaries have greatly reduced as a result of ICT infrastructure of NSCDC, (mean =2.81), Arrest of suspects can be enhanced by deploying ICTs, (mean =2.80), Signals and other security information are better transmitted through ICTs than other conventional means, (mean =2.79), ICT has made security report better protected from unauthorized access, (mean =2.76), Taking of statements of suspects and witnesses have become easier with the use of ICTs, (mean =2.76), ICT tools are easily deployed to prevent escape from custody, (mean =2.70), ICT tools will greatly enhance admissibility of evidence during prosecutions, (mean =2.70), During searches and rescue operations, officers and men are mobilized with ICT gadget(s) required for the operation, (mean =2.65), Posting of officers to beats has been made easier through ICTs,

(mean =2.61), The Corps uses ICT tools in maintaining 24 hours surveillance over infrastructures, sites and projects for the Federal, State and Local Government, (mean =2.61), NSCDC anti-vandalism drive has been better enhanced by deployment of ICTs, (mean =2.60), In cases of riots and civil disorders, ICT gadgets and tools are not usually deployed by NSCDC personnel, (mean =2.53), The war against terror can only be won by the use of ICTs by NSCDC personnel, (mean =2.52), ICT tools have not contributed to efficient monitoring of Private Guard Companies across the state, (mean =2.40), As a matter of policy, the Corps deploys ICT tools to a large extent in its various operational activities, (mean =2.39), In detecting and demarcating danger areas, ICT tools are not required by the NSCDC, (mean =2.35), To safeguard critical national assets and infrastructures (CNAIs), ICT tools are not required, (mean =2.29), ICT tools are not required to forestall criminal activities, (mean =2.27), ICT is not required in accurate record keeping of exhibits, (mean =2.12) and lastly by In disseminating intelligence, ICT is not required, (mean =2.01).

RQ…: How effective was the Security Management of NSCDC in deploying the ICT Tools/Gadgets in its work activities to achieve the following?

Table …: Effectiveness of the Security Management of NSCDC in deploying the ICT Tools/Gadgets in its work activities to achieve the following

S/N	Items	Yes	No	Ranking
1	Crime lights are used by the NCCDC to ensure crime scenes are processed faster and more thoroughly	513 54.6%	426 54.4%	12
2	The NSCDC uses in-car camera system to confirm and ensure high degree of officer professionalism, as well as in criminal investigations and arrests	550 58.6%	389 41.4%	2
3	For criminal investigations, the NSCDC deploys the criminal investigation record system to extract relevant data from disparate record system so as to match suspects to crimes	413 44.0%	526 56.0%	8
4	Crime maps are used by the NSCDC to depict graphically where crime has occurred, and to direct patrols	500 53.2%	439 46.8%	6
5	For crime analysis and intelligence information, the NSCDC deploys Geographical Information System (GIS)	466 49.6%	473 50.4%	1

6	Graffiti camera is used by the NSCDC in its anti-vandalism drive and general surveillance	535 57.0%	404 43.0%	15
7	The NSCDC deploys CCTV in strategic places to ensure surveillance	429 45.7%	510 54.3%	4
8	In the area of terrorism, the NSCDC deploys handheld laser spectroscopy devices that determine the chemical composition of substances within seconds	538 57.3%	401 42.7%	10
9	For simple investigation, camera pens are used by NSCDC personnel	317 3.8%	622 66.2%	5
10	The NSCDC deploys language translators to determine the language to speak when someone does not speak English during investigations	475 50.6%	464 49.4%	7
11	With the video sunglasses, the personnel of NSCDC can take a video of whatever is in view of during operations	352 37.5%	587 62.5%	3
12	Thermal imagers are used by the NSCDC to locate missing children, scan driveways, tyre tracks, parking lots e.t.c	586 62.4%	353 37.6%	14
13	Radios are one of the invaluable ICT tools used by NSCDC to aid communication	325 34.6%	614 65.4%	11
14	The NSCDC personnel use wrist phones to transmit ongoing conversations without anyone knowing	368 39.2%	571 60.8%	13
15	During meetings, the NSCDC make use of electronic whiteboards to take notes and keep such for future reference, as well as allow the production of multiple copies of information for field distribution	502 53.5%	437 46.5%	9

Responses on how effective was the Security Management of NSCDC in deploying the ICT Tools/Gadgets in its work activities to achieve the following are as shown below:

- Crime lights are used by the NCCDC to ensure crime scenes are processed faster and more thoroughly, 513(54.6%) indicated No while 426(54.4%) indicated Yes;
- The NSCDC uses in-car camera system to confirm and ensure high degree of officer professionalism, as well as in criminal investigations and arrests, 550(58.6%) indicated No while 389(41.4%) indicated Yes;

- For criminal investigations, the NSCDC deploys the criminal investigation record system to extract relevant data from disparate record system so as to match suspects to crimes, 413(44.0%) indicated No while 526(56.0%) indicated Yes;
- Crime maps are used by the NSCDC to depict graphically where crime has occurred, and to direct patrols, 500(53.2%) indicated No while 439(46.8%) indicated Yes;
- For crime analysis and intelligence information, the NSCDC deploys Geographical Information System (GIS), 466(49.6%) indicated No while 473(50.4%) indicated Yes;
- Graffiti camera is used by the NSCDC in its anti-vandalism drive and general surveillance , 535(57.0%) indicated No while 404(43.0%) indicated Yes;
- The NSCDC deploys CCTV in strategic places to ensure surveillance, 429(45.7%) indicated No while 510(54.3%) indicated Yes;
- In the area of terrorism, the NSCDC deploys handheld laser spectroscopy devices that determine the chemical composition of substances within seconds, 538(57.3%) indicated No while 401(42.7%) indicated Yes;
- For simple investigation, camera pens are used by NSCDC personnel, 317(3.8%) indicated No while 622(66.2%) indicated Yes;
- The NSCDC deploys language translators to determine the language to speak when someone does not speak English during investigations, 475(50.6%) indicated No while 464(49.4%) indicated Yes;
- With the video sunglasses, the personnel of NSCDC can take a video of whatever is in view of during operations, 352(37.5%) indicated No while 587(62.5%) indicated Yes;
- Thermal imagers are used by the NSCDC to locate missing children, scan driveways, tyre tracks, parking lots e.t.c, 586(62.4%) indicated No while 353(37.6%) indicated Yes;
- Radios are one of the invaluable ICT tools used by NSCDC to aid communication, 325(34.6%) indicated No while 614(65.4%) indicated Yes;
- The NSCDC personnel use wrist phones to transmit ongoing conversations without anyone knowing, 368(39.2%) indicated No while 571(60.8%) indicated Yes and lastly
- During meetings, the NSCDC make use of electronic whiteboards to take notes and keep such for future reference, as well as allow the production of multiple copies of information for field distribution, 502(53.5%) indicated No while 437(46.5%) indicated Yes.

The ranking of the percentage rating of the items are also shown in the tables.

RQ…: What are the Constraints to ICT Accessibility and Utilisation by the NSCDC?

Table…: The Constraints to ICT Accessibility and Utilisation by the NSCDC

S/N	Items	SD	D	A	SA	Mean	S.D
1	Inadequate funding to provide ICT equipment	89 9.5%	151 16.1%	465 49.5%	234 24.9%	2.90	.88
2	Erratic power supply	114 12.1%	178 19.0%	380 40.5%	267 28.4%	2.85	.97
3	Organizational factors (restrictions)	79 8.4%	181 19.3%	505 53.8%	174 18.5%	2.82	.83
4	High cost of ICT tools	111 11.8%	225 24.0%	440 46.9%	163 17.4%	2.70	.89
5	Personal factors (perceived benefits)	133 14.2%	174 18.5%	479 51.0%	153 16.3%	2.69	.91
6	Lack of access to the ICT gadgets	111 11.8%	222 23.6%	453 48.2%	153 16.3%	2.69	.88
7	Lack of training of officers and men of the Corps by the management of Corps	158 16.8%	245 26.1%	367 39.1%	169 18.0%	2.58	.97
8	Complexity of ICT factors (ease of use)	128 13.6%	301 32.1%	408 43.5%	102 10.9%	2.52	.86
9	Not ICT-complaint	134 14.3%	322 34.3%	381 40.6%	102 10.9%	2.48	.87
10	Lack of expertise on the use of ICT tools	165 17.6%	336 35.8%	317 33.8%	121 12.9%	2.42	.92
11	Inability of officers to operate ICT gadgets	162 17.3%	382 40.7%	290 30.9%	105 11.2%	2.36	.89

12	Low level of education	173 18.4%	367 39.1%	299 31.8%	100 10.6%	2.35	.90
13	Lack of interest among officers and men of the Corps to adopt the use of computers and other modern information technology gadgets for operational efficiency	167 17.8%	397 42.3%	271 28.9%	104 11.1%	2.33	.89
	GRAND MEAN = 2.59						

Responses on the Constraints to ICT Accessibility and Utilisation by the NSCDC are as shown below:

Inadequate funding to provide ICT equipment, (mean =2.90) ranked highest by the mean score rating and was followed by Erratic power supply, (mean =2.85), Organizational factors (restrictions), (mean =2.82), High cost of ICT tools, (mean =2.70), Personal factors (perceived benefits), (mean =2.69), Lack of access to the ICT gadgets, (mean =2.69), Lack of training of officers and men of the Corps by the management of Corps, (mean =2.58), Complexity of ICT factors (ease of use), (mean =2.52), Not ICT-complaint, (mean =2.48), Lack of expertise on the use of ICT tools, (mean =2.42), Inability of officers to operate ICT gadgets, (mean =2.36), Low level of education, (mean =2.35) and lastly by Lack of interest among officers and men of the Corps to adopt the use of computers and other modern information technology gadgets for operational efficiency, (mean =2.33).

Appendix 5

ICT gadgets in security operations

Figure 2: Different types of metal detectors

Source*: https://www.amazon.com*

Figure 3: Audio-bug wireless transmitters

Source*: https://www.amazon.com*

Figure 4: Lipstick self-defence spray

Source*: https://www.amazon.com*

Figure 5: Digital Watch Style Walkie-talkie

Source*: https://www.amazon.com*

Figure 6: Watch hidden spy camera

Source*: https://www.amazon.com*

Figure 7: Car Key Spy Camera

Source*: https://www.amazon.com*

Figure 8: Spy Camera Pens

Source*: https://www.amazon.com*

Figure 9: Optical Mouse Hidden Spy Camera

Source*: https://www.amazon.com*

Figure 10: Universal Charger Hidden Spy Camera

Source*: https://www.amazon.com*

Figure 11: Necklace Hidden Spy Camera

Source*: https://www.amazon.com*

Figure 12: Clock Hidden Spy Camera

Source*: https://www.amazon.com*

Figure 13: Hidden Eye Glass Spy Camera

Source*: https://www.amazon.com*

Figure 14: Belt Hidden Spy Camera

Source*: https://www.amazon.com*

Figure 15: Cap Hidden Spy Camera

Source*: https://www.amazon.com*

Figure 16: Bag Hidden Spy Camera

Source*: https://www.amazon.com*

Figure 17: Neck Tie Hidden Spy Camera

Source*: https://www.amazon.com*

Figure 18: Button Hidden Spy Camera

Source*: https://www.amazon.com*

Figure 19: Socket/Wall Switch Hidden Spy Camera

Source*: https://www.amazon.com*

Figure 20: Torch Light Hidden Spy Camera

Source*: https://www.amazon.com*

Figure 21: Invisible Car Toy Hidden Spy Camera

Source*: https://www.amazon.com*

Figure 22: Smoke Detector Hidden Spy Camera

Source*: https://www.amazon.com*

Figure 23: Calculator Video Recorder

Source*: https://www.amazon.com*

Figure 24: Lighter Hidden Spy Camera

Source*: https://www.amazon.com*

Figure 25: Sunglass Spy Camera

Source*: https://www.amazon.com*

Figure 26: Soap Box Hidden Spy Camera

Source*: https://www.amazon.com*

Figure 27: Bluetooth Earpiece Hidden Spy Camera

Source*: https://www.amazon.com*

Figure 28: Tissue-Box Hidden Spy Camera

Source*: https://www.amazon.com*

Figure 29: Closed Circuit Television (CCTV)

Source*: https://www.amazon.com*

Figure 30: Car Tracker

Source*: https://www.amazon.com*

Figure 31: Perimeter Sensor Alarm

Source*: https://www.amazon.com*

Figure 32: Intercom with Real Time DVR

Source*: https://www.amazon.com*

Figure 33: Alarm Padlock

Source*: https://www.amazon.com*