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Technological Innovation and Crime Prevention: Implications for Effective Performance of Nigerian Police

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Abstract:
New technological innovations have been developed to prevent crime and to improve the performance of police. Recently, the rate of crime in Nigeria has increased to the level which it has generated public uproar to the government for immediate solution. Government has put in place various security measures and policies to protect the lives and properties of its citizens but to no avail. Armed robbery, kidnapping, murder, rape, arson, terrorism, bomb attacks and other crimes have been the order of the day in Nigeria. To this end, this paper seeks to analyze the impact of technological innovation on crime prevention and effective policing in Nigeria. The findings show that understanding the effects of technological change is a crucial issue in contemporary policing because in recent times, many developments have been in place with respect to Information Technology (IT), analytic system, video surveillance systems, DNA testing, and other technologies that have far reaching implications for policing. Also, technological innovations brings about change in types of crime, change in criminals' attitude and their mode of operation. The study recommends among others that there is need for security managers to be technology canny, and government should invest highly in modern crime solving technologies such as Social media policing, shots potter detection system, CCTV, DNA testing among others.

Keywords: Technology, technological innovations, crime, crime prevention, crime analysis.

1. Introduction

A hasty evaluation of the historical growth of efforts to prevent crime underscores the view that technology, or more accurately, technological innovation has been the thrust leading to the reform of strategies in preventing and controlling crimes, both individually and by groups that are concerned, and by formal police agencies (Byrne and Marx, 2011).From the society's perspective as a whole, the excellent and largest useful activity that can be carried out by law enforcement agencies is prevention of crime (Haggerty, 2008). If crimes are prevented effectively before they occur, the cost of society and associated sufferings as a result of the crimes are totally avoided. Police can take part of the responsibilities of preventing crime but not all (Grabosky, 1998). Applying science and technology to criminal justice is not new. Since the discovery of contemporary policing and convections in the 19th century, advancement has often been quantified in terms of technological innovation (Grabosky, 1998). Thus, there has been the arrival of fingerprinting, wireless communication, the motor car and other devices.

Applying these technologies to the activities of law enforcement has brought about revolution in the ability of Police to on one hand, respond to crime that is taking place in real time and on the other hand, to anticipatorily establish problems, ascertain their causes and create strategic plans that truly improve an agency's crime prevention. In this technological era, the law enforcement agents need to evolve in order to fulfill their mandates of contributing to the overall security (Hoogenboom, 2010). Greenburg& Roush (2009) argues that technology has proven precious in responding to the difficulty in linkage blindness towards jurisdictions as well as with other criminal justice agencies and sectors of the community. The security threat in Nigeria has been a major issue of concern for government (Ogunleye, Adewale, Alese & Ogunde, 2011). However, for the nation to really keep crimes such as armed robbery, kidnapping, murder, rape, arson, bomb attacks, terrorism among others in check, there is need to adopt the use of technological base equipments such as CCTV, DNA, adequate data base, surveillance system among others in order to prevent, reduce, analyze and most importantly control criminal activities. Unfortunately, attempts to introduce the equipment in Nigeria was hobbled by corruption (Punch, 2016). Also, there are barriers to the adoption of these technologies, ranging from cost of procurement identified by police departments, training of police on how to use the technologies, knowledge about how and why certain innovations are adopted and their consequences, and to the opinion of the public about the technology. However, this technology brings with it new legal challenges, majorly as it regards to the balance between crime control and the private interests of citizens. Based on the above, there is

therefore the need to explore and establish the impact of technological innovation on crime prevention, control, reduction, analysis and most importantly, the general performance of police force in Nigeria.

2. Literature Review

2.1. Conceptual Framework
Some applications of technology to prevention of crime have become a fact of life in this era (Grabosky, 1998). Development of various methods have made crime very difficult to commit by impeding access to target. Metaphorically and occasionally literarily speaking, these together with surveillance have come to be called 'target hardening' (Grabosky, 1998). The age of formidable padlock is leaving for 'smarter' locking technologies. Howe and Blanchard (1994), portray a new motor vehicle security system which uses a wireless electronic link between the starter key and the car's computer system to allow or prevent ignition of the car. However, the discussion here will extend further away than electronics by including other scientific applications such as DNA testing. Policing technologies extends the physical capacity of police officers to see, hear, recognize, record, remember, match, verify, analyze and communicate (Koper and Lum, 2015). These information technologies might include computer-aided dispatch (CAD), or records management systems (RMS), Forensic technologies such as DNA testing tools or fingerprints readers, or data processing systems such as crime analysis or computerized mapping.

Koper and Lum (2015), notes that such advancement in technology have high influence for enhancing police work. For instance, use of technology may improve crime control by strengthening the police ability to identify and monitor offenders (most importantly repeat, high-rate offenders); making it easy to identify places and conditions which unequally contributes to crime; quick detection and rapid response to crimes, enhancement in the collection of evidence, police deployment and strategies improvement, creating efficiency in organization which put more officers in the field and for a long period of time, communication enhancement between police and citizens, increasing perception that punishment is certain, and strengthening the ability of law enforcement agencies to deal with technologically sophisticated forms of crime (e.g. suicide bombing and cyber-crime, terrorism).Technological innovation in automobiles, protective gear, weapons, and surveillance abilities may subdue injuries and killing of officers, suspects and observers (Byrne and Marx, 2011). Persistent operational needs come in a large number of areas to which technology is key, including crime analysis and information-led policing, information technology and database integration, and managing dispatch and calls for service (Koper et al., 2009). The advancement in technology improves the effectiveness of police, communication between the police and citizens is enhanced, negative outcomes from police actions is reduced and police accountability is increased and may also enhance police legitimacy (Smith, 2004).

2.2. Key Technologies in Law Enforcement
In understanding the impacts of technological innovations in policing, this paper tried to carefully observe the social, organizational, and behavioural implications of various somewhat new and important policing technologies that have spread into law enforcement. In selecting these technologies, the research reviewed academic and non-academic literatures on police technology and considered those that are available in the environment where the research is focused. The paper examined the technologies contained in this study and reflect on experts' assessment of the impacts and importance of those technologies to policing.
Based on the assessments, the researchers mapped out the following group of police technologies as specifically key to routine work of police and fruitful exercises:
→ Surveillance and security technologies (e.g. CCTV, GIPS, patrol car cameras).
→ DNA testing and other forensic equipment.
→ Crime analysis
→ Geographic Information System (GIS)

2.2.1. Surveillance Technologies
Surveillance technologies represent the wide range of systems currently available to law enforcement agencies to trail the movements of individuals and/or provide efficient guardianship to a specific location. Police surveillance is one activity justified by its influence in preventing crime (Goold, 2001). Advocates of surveillance state that it prevents crime by deterrence, particularly when open, surveillance activities notify potential criminals of the presence and observation of police. Opponents contest that surveillance may easily move crime to unobserved places, rather than prevent it (Manning, 2008). In any case, it is the case that if one area under surveillance turn into a scene of crime, the surveillance can both alert the police to the need for an operational response and/or provide evidence for following criminal investigation and prosecution (Byrnel & Marx, 2011). Owing to many factors involved in contact between police and private citizens, surveillance technology that over-sends information to police may have important merits over eyewitness surveillance. Technology that records video or audio information may also be particularly valuable for helping investigation and enabling prosecution. Examples on innovations in this area include Closed Circuit Television (CCTV), GPS, Biometric and APIS systems. For this paper, only CCTV will be discussed based on the focus of the research.

2.2.2. Closed Circuit Television (CCTV)
The use of Closed Circuit Television (CCTV) and other types of public surveillance technology has grown significantly in recent years, not only in police department, but also security in airports and other public places, have largely changed to video surveillance in their abilities to reduce criminal activities and guarantee public safety. This technology is very popular in the United States and

Britain where there is a camera on every street corner and in every public building. No one can erase the images caught on CCTV cameras. It is certain that such images can be used as evidence of what transpired in a given incident (Groff & McEwen, 2008). Unfortunately, in Nigeria, an attempt to introduce the CCTV was hobbled by corruption. More than six years after the federal government awarded a $470 million contract to a Chinese company for the installation of CCTV cameras in Lagos and Abuja, the project is yet to take off effectively. Financed with a $399.5 million loan from China's Exim Bank and $70.5 million from Nigerian government, only 2000 cameras, a tiny fraction of the project is said to have been installed (Punch, 2016). Even the little work done can only be described as shoddy because of the substandard material they are made up of.

2.2.3. De-oxyribonucliec Acid (DNA) Testing
Law enforcement agencies in recent times use a wide range of forensics technologies in assisting them to identify criminal offenders (Koper &Lum, 2015). One of the most significant improvements to these capacities is the development of identification testing using de-oxyribonucliec acid, popularly known as DNA. This Test identify unique individual genetic codes from DNA samples that are extracted from biological evidence such as blood, semen, hair and saliva (Connors, Lundregan, Miller & McEwen). It was developed in the 1980s, and has become a common method of identification, majorly for sex crimes and other violent offences, and it is widely viewed as the state of the art in offender identification (Marx, 2009).
 In the United States, DNA testing is used mostly in violent crimes cases due to its expense, but its use for property crimes is also expanding (Koper &Lum, 2015). DNA according to experts is the hereditary material found in every cell in humans and other organisms. Through in-depth studies, scientist have been able to come up with DNA profiling or genetic fingerprinting for the detection of crime. This implies that by taking samples of DNA at the scene of the crime that has not been compromised or tampered with, it is possible for law enforcement agents to find out if a suspect is innocent or not.DNA evidence may be collected by police in different ways. It may be used to determine whether a particular suspect can be linked to a physical evidence from a particular scene of crime, recovered DNA evidence from the scene of the crime may also be used to identify suspects. Lastly, police and other criminal justice agencies take DNA samples from convicted offenders and in some areas from arrestees to test them for matches to evidence from unsettled crimes and for use in future investigation (Grabosky, 1998). One of the most significant advancement in forensic science from fingerprint is DNA testing. It is not only that it has been used to finally establish the guilt of suspect, but it has also served in exonerating subjects of investigation and even people who have been convicted of crimes which they did not commit (Connors, Lundregan, Miller, & McEwen, 1996). Butin Nigeria, when DNA testing is needed, most of the samples are taken abroad, where there is possibility of contamination in the process, thus hampering the prospects of getting precise and correct results. By deploying DNA in crime detection, the government will only be tapping into a technology that has become widely available for use to solve violent crime cases.

2.2.4. Crime Analysis
Crime analysis is the data collection and analysis of criminal incident, offenders and target (Canter, 2000). Flawlessly, analysis of crime will guide police managers in deploying and allocating resources that are linked to a genuine understanding of the nature of the problem. The more the collection and analysis of accurate data related to all parts of the crime triangle (Victim, offender, location), the better equipped police organizations will be for developing innovative, unconventional answers that include the full range of repression, interference and precaution options (Haries, 1999).Analyzing crime data may disclose or uncover patterns that are helpful not singularly in crime prevention and an operational response to crime but also in improving accountability to the public and police leadership (Thibault, Lynch & McBride). Price (2001), stressed that most departments do some type of crime analysis, most frequently preparation of crime statistics. It must be noted that crime analysis will only be good as the data or information that is gathered. Canter (2000), explains that there are three (3) essential criteria for crime analysis that police departments should use when data collection processes are being designed as well as when the interpretation of the meaning of the information resulting from crime analysis is taking place.
These criteria are:
  • Timeliness: Does the direction or trend presented show a present problem or circumstance or is it more representative of a prior situation? Decisions to deploy with respect to both efforts of preventing and apprehending offenders must be based on information that is as current as possible.
  • Relevance: Does the measures used in the analysis exactly reflect what is needed? For instance, whether a pattern is based upon calls for service data or incident data can be very significant determination depending on what the police manager is trying to understand.
  • Reliability: if the same data is interpreted by different people at various times, would it lead to the same conclusions? The development of crime analysis has been made easier by the advancement of police data systems and the development of computer software for specialized applications such as geographical and intelligence analyses (Koper &Lum, 2015). Crime analysis has a great potential for increasing the effectiveness and efficiency of police; but this is not the case in Nigeria due to lack of adequate data base system by the police, non-availability of modern technology, along with a set of systematic methods and techniques that can identify patterns and relationships between crime data and other important information sources to help police in apprehending criminals, reducing disorder and crime, preventing and evaluating crime.

2.2.5. Geographic Information System (GIS)

Geographic Information Systems play an important role in crime analysis. A GIS is an automated system for capturing, storage, retrieval, analysis as well as displaying of spatial data (Clarke, 1990). "It has been noted that GIS technology is to geographical analysis as microscope, telescope and computers are to sciences" (Cowen, 2001). GIS is a visual representation of various data sources that can be located geographically, such as crime events, land usage, property values, racial ethnic composition etc. help planners to control and show geographical knowledge in fresh and existing ways (Cowen, 2001). Despite the fact that it is applied in various fields, the main focus of GIS is the improvement in decision making. In enforcing law, GIS has significantly changed the practice of electronic crime mapping or graphically displaying crime incidents or a mapped surface of a particular territory (DeAngelis, 2000). GIS application can also assist to improve the capacity of law enforcement to engross in the process of collaborative problem-solving with other criminal justice and community agencies (Carney, 1998). The visual representation of information may be a potent instrument to come to a mutual understanding of the nature of problems even across planning groups with different perspectives (Cowen, 2001). Carney (1998), stressed further that a forward looking police manager should use GIS and problem-solving instruments to create sound strategic and tactical decisions relating to such things as deployment of officers, allocation of resources and partnerships with other agencies to maintain crime reductions.

The Compstat model of New York police department (NYPD) institutionalized the use of GIS for planning purpose of the department.GIS usage enhances a police officer's time on the street. An officer with access to GIS software and additional datasets, like parolee and probationer data, can run queries from a laptop in the patrol car by the use of community policing beat book which can be used to check how many parolees or probationers were released recently on their beat, the release conditions and if there is violation of any of these release clauses (Cowen, 2001). Similarly, a victim service provider could use GIS to tract and map the location of both offenders and/or victims who were issued protection orders in stalking cases. GIS software can also map the house address of a person, considering the conditions of the protection order associated with the offender. We can now draw a distance buffer around those locations and reveal violations or compliance with the specified restriction (Onion, 2002). As important as GIS is in preventing and combating crimes, less attention has been paid to the use in Nigeria. This may be due to inadequate knowledge of this technology by the law enforcement agencies, inadequate training, poor funding and unavailability of the technology among others. It is a known fact that application of these technologies in law enforcement and policing will not only prevent crime but control it, apprehend offenders and improve the effectiveness and efficiency of police in the country.

2.3. Theoretical Framework

There are various theoretical models employed to explain the acceptance and the use of technology and these shall be discussed in turn.

2.3.1. The Technological Acceptance Model (TAM)

The technological acceptance model was introduced by Davis in 1989. He proposed that system use is a response that can be explained or predicted by user motivation. This motivation in turn, is directly influenced by an external stimulus that consist of system features and capabilities (Rottman, 2013). TAM provides many merits such as wide use of IT field (Agwu, 2015),
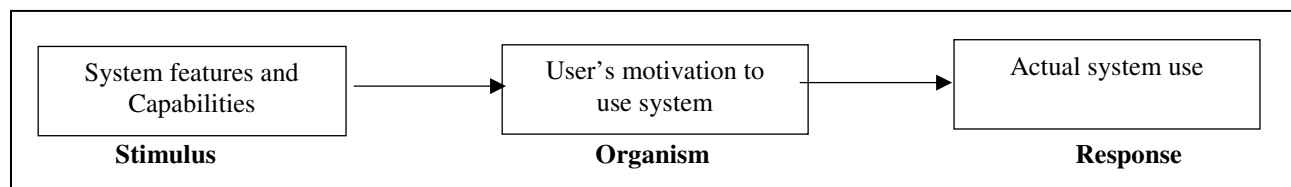

Figure 1: Conceptual Model for Technology Acceptance Model.
Source:Davis,(1989)

By counting on previous research such as Theory of Reason Action (Fishbein and Ajzen, 1975) and different research studies, Davis further provide conceptual model to suggest the Technology Acceptance Model as shown in figure 2 below:
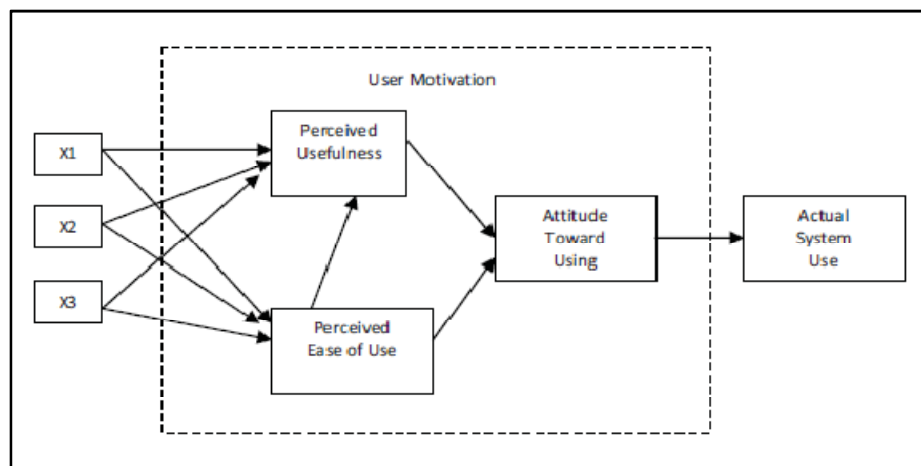
Figure 2: Original TAM proposed by Fred Davis
Source: Davis, (1989).

Davis (1989) in his work, proposed that user's motivation can be explained by three factors; Perceived usefulness, Perceived Ease of use and attitude toward using the system. He assumed that the attitude of a user to the direction of a system was a crucial determinant whether the user will accept or reject the system (Rottman, 2013). Current research studies on technology acceptance is still underdone and therefore there is need to understand the assumptions, strengths and limitations of the Technology Acceptance Model (TAM) for anyone that wants to study user acceptance of technology (Rottman, 2013).

2.3.2. Theory of Reasoned Action (TRA)
The Theory of Reasoned Action was propounded by Fishbein and Ajzen in 1975. The model originates from learning theory and believes that behaviour towards a particular object is approximated by an intention to perform that behaviour. Intention represents a person's conscious plan to apply effort to carry out a behaviour (Abdulrahman and Abass, 2014). The theory was originally introduced by Fishbein and Ajzen in 1975 in the field of social psychology and has been widely used to describe individuals' behaviour. It believes that behaviour is predicted by two factors; the individual's attitude towards the outcome of the behaviour and by the opinions of the person's social environment, which is called the subjective form (Fishbein and Ajzen, 1975).

2.3.3. Theory of Planned Behaviour (TPB)
The Theory of Planned Behaviour (TPB) was propounded by Ajzen 1988 and modified in 1991. It helps in understanding how behaviour of people can be changed. It is a theory that predicts deliberate behaviour because behaviour can be deliberate and planned. TPB is the successor of similar Theory of Reason Action of Ajzen and Fishbein (1975, 1980). The succession was the outcome of findings that behaviour appeared not to be 100% voluntary and under control, which resulted in the action of perceived behavioural control. Because of this addition, the theory was called the Theory of Planned Behaviour.
Based on the theory, human action is guided by three types of considerations:
- Behavioral beliefs (beliefs about the likely consequences of the behaviour)
- Normative beliefs (beliefs about the normative expectations of others)
- Control beliefs (beliefs about the presence of factors that may facilitate or impede performance of the behaviour)

Ajzen's three considerations are crucial in circumstances/projects/programs when changing behaviour of people in their respective aggregates, behavioural beliefs produce a favorable or unfavorable attitude towards the behaviour, normative beliefs result in perceived social pressure or subjective norm, and control beliefs bring rise to perceived behavioral control. In combination, attitude towards the behaviour, subjective norm, and perception of behavioural control lead to the formation of a behavioural intention. Generally, the more favorable the attitude and subjective norm and the greater the perceived control, the stronger should be the person's intention to perform the behaviour in question (Ajzen, 1991).

2.3.4. Diffusion of Innovation Theory
This Theory was introduced by Rogers in 1962 and modified in 1995. The theory introduced several factors that determines the decision to adopt a new technology (i.e. new innovation). By the help of empirical research, Rogers (1995), identified relative advantage, compatibility, technical complexity, trialability and observability as the key factors that shapes the decision process considering adoption of new technology. Based on the diffusion of Innovation theory, Rogers (1995), categorized the potential adopters of new and innovative technologies in five clusters which are; innovators, early adopters, early majority, late majority and laggards. In the consideration of the distribution of each of the adopter types across the entire population, Rogers explains that about 2.5% are early innovators, 13.5% are early adopters, 34% are early majority, 34% are late majority and 16% are laggards. This is depicted in the diagram below:
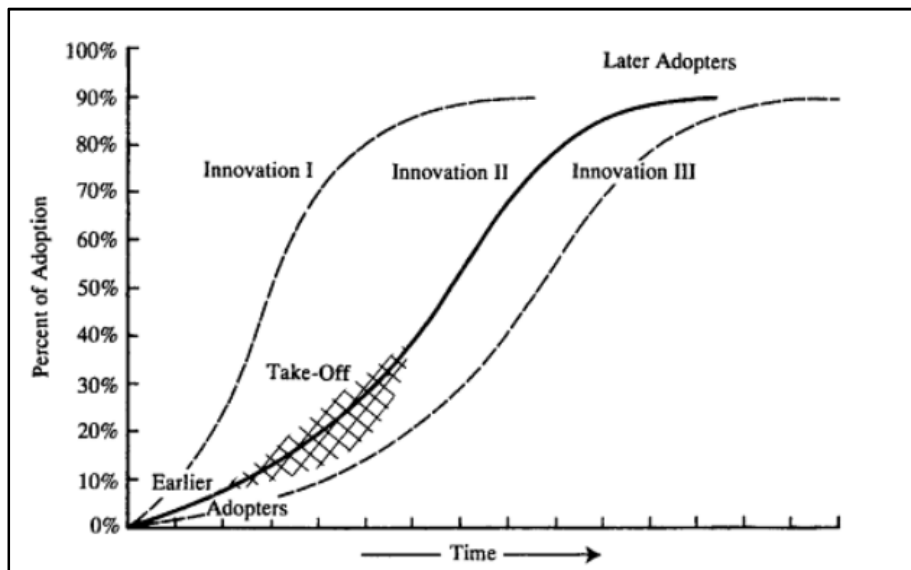
Figure 3: Diffusion of Innovation
Source: Rogers, (1995).

2.3.5. Unified Theory of Acceptance and Use of Technology (UTAUT)
The UTAUT model intends to explain technology acceptance and it is based on eight technology acceptance theories or models (Vankatesh, Morris, Davis, & Davis, 2003). Particularly, the UTAUT extracts from the Theory of Reasoned Action (TRA), the Technology Acceptance Model (TAM), the Motivational Model, the Theory of Planned Behaviour (TPB), the combination of TAM and TPB, the model of Personal Computer Utilization, the Innovation Diffusion Theory and the Social Cognitive Theory (Vankatesh et al., 2003). Centrally, the UTAUT model uses behavioural intention as a predictor of the technology use behaviour. The behavioural intention predictors that are included are based on the components of the eight technology adoption models reviewed. The basic form of the UTAUT model is shown in figure 4 below.
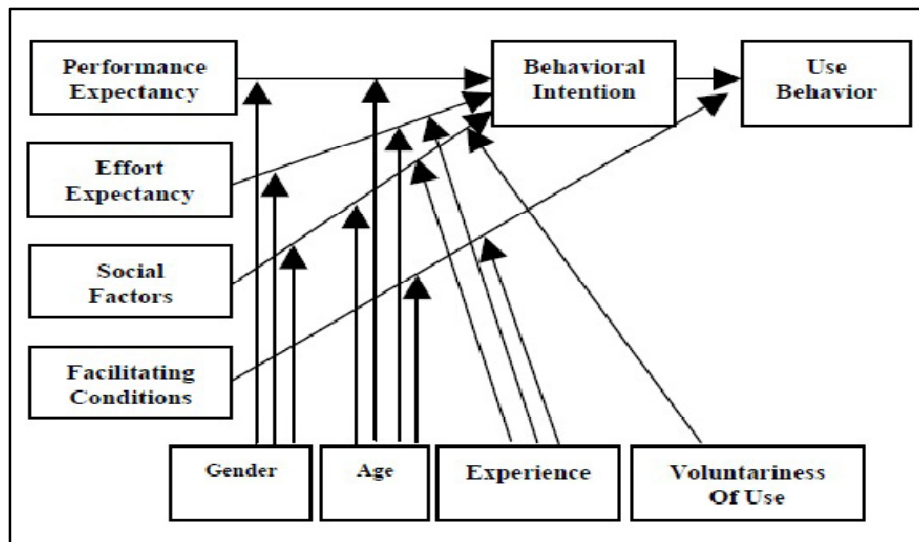

Figure 4: Unified Theory of Acceptance and Use of Technology (UTAUT)
Source: Vankatesh et al. (2003)

Adding to behavioural intention and use behaviour, the UTAUT model comprise of four constructs which are performance expectancy, effort expectancy, social factors and facilitating conditions. The model also includes four moderating variables: age, gender, education and voluntaries of use. In the model, performance expectancy and effort expectancy and social factors directly affects behavioural intention which along with facilitating directly affects use behaviour. In Thomas, Singh &Gaffar, (2013), the effects of interaction of each performance expectancy, effort expectancy and social factors with each age and gender, interactions of experience with each of effort expectancy and social factors and an interaction of voluntariness of use and social factors on behavioural intention are also included. Lastly, interactions of age and facilitating conditions and experience and facilitating condition have effects on use behaviour (Venkatesh et al. 2003).

2.3.6. Unified Theory of Acceptance and Use of Technology 2 (UTAUT 2)
The UTAUT 2 describes acceptance and new technology use adoption in consumer context. Asides the concepts included in the original UTAUT model but then projected to consumers as against employees in an organization, the UTAUT 2 includes hedonic incentive, price value and habit of consumers as additional independent variables. Furthermore, differences in individual (age, gender and experience) were found to moderate the connection of the effects between these consumer factors, behavioural intention and the use of technology. The fact that consumers can decide freely, whether to adopt a new technology has the consequence that moderating factor voluntariness of use is put in UTAUT 2 (Venkatesh, Thong & Xu, 2011).Other concepts that includes performance expectancy, effort expectancy, social influence and facilitating conditions that are available in the original UTAUT remain in UTAUT 2, with the small divergence that facilitating conditions affects directly the behavioral intention and actual usage behaviour (Thomas, Singh and Gaffar, 2013).

2.4. Empirical Framework
The advancements and innovations in technology have shaped modern policing in various important ways (Koper &Lum, 2015). There is need to consider that the key police strategy for large part of the 20th century which are motorized preventive patrol and rapid response to calls for serve was created to respond to the interference of the motor traffic radio communications and computer aided dispatch systems (Koper, Lum& Wills, 2014). In recent times, advancements in technology have as well had far reaching effects on police agencies. For instance, information technology (IT), Video Surveillance systems. Closed Circuit Television (CCTV), DNA testing, and bullet proof vests are presently common and extremely important tools in enforcing the law (Koper &Lum, 2015). Grabosky (1998), stressed that research in United Kingdom has displayed that improvements in street lighting contributed to public safety by improving visibility and by raising the danger that law breakers will be discovered and apprehended. Enhancement of light has helped reduce crime and fear on the part of local residents (Painter, 1994).
The use of DNA in crime detection cannot be over-emphasized, since the first man, Collin Pitchfork was sentenced to life imprisonment in 1998 for raping and killing two teenage school girls in the United Kingdom. Through the evidence harvested at the scene of the crime, a DNA test was performed on all the men in the surrounding communities, almost 5000 of them, according to the Mail of London on line, which results in the apprehension of Pitchfork (Punch, 2016). Also of interest, is that a man who had already confessed to the murder of the girls, acting based on pressure from the police was allowed to go as a result of the test (Punch, 2016). Furthermore, Closed Circuit Television (CCTV) in restricted public places as well as commercial organizations has been proven to be effective in determining criminals and facilitating the identification of offenders (Grabosky, 1998). The evidence of CCTV is very convincing and its availability can serve to increase the likelihood of guilty plea, which will consequently save costs and time of court. The punch (2016), explains that in cities all over the world where there is deployment of the use of CCTV and video surveillance, there is effectiveness in revealing the criminal's identity. CCTV has continuously proved that it is effective in the fight against crime and the fear of crime.
Metropolitan police in their report confirms that "London's CCTV solves about six crimes per day. London described as a "surveillance society" as of February 2015 reportedly boasted about 500,000 CCTV cameras observing public places alone, amounting to about one camera for every 16 people". Aside the exposure of criminals, CCTV cameras will assist in exposing policemen who assaults innocent civilians and lie to say they were doing so in self-defense. Infra-red and light intensifying technologies may be adopted in order to enhance the capacity of CCTV, or applied to other observation devices. These can be made use of not to locate suspects alone but also for identifying missing or lost persons in certain places (Grabosky, 1998).

3. Discussion and Conclusion
Technological developments and innovations, will lead to new applications for surveillance and detection of crime, and these can be anticipated to become more extensive (Smith, 2004). There is now availability of Portable Personal alarm systems that enable the user to make contact with a friend, relative or security service when assistance is needed. Such technologies are more accessible to older citizens, whose liberty might contrarily be confined by fear of crime or of other problems (Onion, 2002). A complete new sector relating to information security has developed recently to provide protection against diverse forms of criminality that involves telecommunication and information services (Grabosky, 1998). Upholding the sincerity of the various computer and communication systems on which all recent institutions now rely means that IT security will become one of the expanded industries in the next century. Further, information technology has increased the new techniques for crime detection like fraud and money laundering (Koper, Lum& Will, 2014). Abnormal transactions can be immediately established through applications of man-made intelligence.
Koper &Lum (2015) stated that when assessing how technology affects police, consideration must be given to organizational culture, structures and practices within police agencies mediate the ability of technology to improve the effectiveness and legitimacy of police. He argued that technologies are used by people, based on technological "Frames" and these frames can be manipulated by the way employees see their role and function, and this is associated with organizational structure, culture and activities. With properly-trained and well equipped forensic scientists available the high profile murders of a serving Attorney General of the country, the late Chief Bola Ige, and a Peoples' Democratic Party Governorship candidate of Lagos state, Funsho Williams and in addition, the perpetrators of different high profile killings that happened in the country over the years would, maybe not have stayed unknown till date. The practice of parading two sets of suspects for one crime by law enforcement agent as was done in murder case of a renowned politician, Alfred Rewane would have been abrogated. Technological innovations bring about change in types of crime, criminal's attitudes and their mode of operation. There is need for security managers to be technology canny. Government should invest highly in modern crime solving technologies such as network analysis, biometrics, social media policing, shot-spotter detection system,

CCTV, DNA among others. With considerable rate of increase in crime, nothing should be spared in fight against it, at least the use of technology.

4. Managerial Implications

- Technological innovations may not come with easy and large improvements in police performance except with important planning and effort and with infrastructure and rules that help agencies derive the benefits of technology maximally.
- Technological adoption is a long and incessant program of its own and it is in connection with various other aspects of policing, which include daily routines and deployment, jobs satisfaction, interaction with the community, internal relationships, and crime control outcomes, so managing change in technology in policing is closely related to managing other reforms in organizations like improvements in professionalism, misconduct reduction, problem solving or evidence-based policing.
- To strategize about technology application is essential and should consider carefully the specific ways by which modern and previous technologies can be deployed and used at various levels of organization in order to meet the objectives of improving efficiency, effectiveness and agency management.

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