REVIEWED JOURNAL of INTERNATIONAL SOCIAL SCIENCE & HUMANITIES
[ISSN 2663-127X]
Vol. 5, Iss. 1 (2024), pp 320 – 342, June 23, 2024. www.reviewedjournals.com, ©Reviewed Journals

TECHNOLOGY AND INTELLIGENCE LED POLICING IN NAIROBI CITY COUNTY, KENYA

[1] Grace Zawadi Mangi & [2] Dr. Kandiri John, PhD

[1] Student, Masters of Arts in Security Management, School of Humanities and Social Sciences and Police Studies, Kenyatta University, Kenya
[2] Senior Lecturer, Department of Computing & Information Technology, Kenyatta University, Kenya

Accepted: June 13, 2024

ABSTRACT

This study evaluated the determinants of use of technology in intelligence policing in Nairobi City County, Kenya. The Unified Theory of Acceptance and Use of Technology and Ratcliffe Model were relied on in this study. The research design used was descriptive, with the populace being the DCI department in Nairobi City County comprising of 175 staff from 13 sub departments. The sample was 91 respondents drawn from the target population through stratified sampling. Data was sourced utilizing questionnaires. Additionally, questionnaire was tested to ascertain the validity and reliability. Reliability was done based on the Cronbach's alpha whose threshold was 0.70 and from the results all variables were reliable. Analysis was done using SPSS version 24. Based on the regression output in performance expectancy has a positive and significant effect on intelligence policing and crime investigations in Nairobi City County. The regression coefficient is 0.807 while the p value is .003 which indicate significance. Based on the regression output perceived credibility has a positive and significant effect on intelligence policing and crime investigations in Nairobi City County. The regression coefficient is 1.025 while the p value is .000 which indicate significance. Based on the regression output, effort expectancy has a positive and significant effect on intelligence policing and crime investigations in Nairobi City County. The regression coefficient is 0.318 while the p value is .043 which indicates significance. Based on the regression output facilitating conditions has a positive and significant effect on intelligence policing and crime investigations in Nairobi City County. The regression coefficient is 0.616 while the p value is .020 which indicates significance. The research concluded that technology has a significant effect on intelligence led policing in Kenya specifically in crime investigations. Specifically the study concludes that performance expectancy, perceived credibility, effort expectancy and facilitating conditions of technology have significant and positive effect on the intelligence led policing and crime investigation process. Based on the findings, the study recommended that there should be adequate security features in the technology used in intelligence policing and crime investigations. Secondly the study recommends that DCIO should invest more in the upgrading of its investigative systems and technologies to simplify investigation processes. The study also recommended the improvement of computer crime mapping systems to help in intelligence policing. Finally the study recommended that the investigative agencies should recruit more confidential informants as they are very vital in intelligence policing

Key Words: *Expectancy, Credibility, Technology, Intelligence Policing, Crime Investigation*

CITATION: Mangi, G. Z., & Kandiri, J. (2024). Technology and intelligence led policing in Nairobi City County, Kenya. *Reviewed Journal of Social Science & Humanities*, 5 (1), 320 – 342.

INTRODUCTION

With major improvements being made in technology, investigation and intelligence gathering has shifted more towards the use of technology. Criminal activities like domestic violence, rape cases, defilements and other social crimes increased during the pandemic (Human Right Watch, 2020). This prompted the criminal investigative agencies to harness more on the use of technology not just in crime investigations but also in collecting intelligence. With improved technologies, there is an increase in the use of internet networks to connect various computers within the police units allowing the police to investigate and share large amounts of information (Sigilai, 2018).

Some of the new technologies that have been adopted in the modern times include the Closed Circuit Television (CCTVs) and Computer Aided Dispatch Systems (CADS). The CCTVs have mainly been used in gathering intelligence information and has helped in arresting the suspects in major crimes. The CADS has aided in enhancing rapid response of the police to service. The CADs was developed to deal with inefficiencie in police response to crimes occasioned by old technologies like analogies dispatch systems such as telephone calls.

Globally the use of technology in intelligence led policing has gained a lot of traction. a research by Strom (2017) on how technology influence of policing strategies in the 21st century established that among the states examined, 96 percent had implemented at least one of the eighteen technologies including car cameras, social media, information sharing alongside visual based technology. Burcher and Whelan (2018) found that technology was a key element and determinant of a successful intelligence led police processes.

According to Fangella (2019) as at 2010, the USA was estimated to spent over 100 billion dollars per annum in terms of law enforcements prompting the need towards the enhancement of the artificial intelligence methods in the prevention and detection of crimes to help in reducing the cost of law enforcement. Some of the methods used currently in the USA include gunfire detection done using shotspotter; a machine that helps in the location of a gunshot, security cameras and predpol; a machine which uses data to predict where and when the crime will take place. It was estimated that with the use of the intelligence, cases of residential burglaries reduced by 22 percent in Washington and 7.4 percent reduction of crime volume as a result of using crime prediction devices (Justice Department, 2019). In Sweden, Gerell, Kardell and Kindgren (2020) observed that most crimes that were on the increase were domestic based. There were increase in domestic violence in Sweden by 6 percent though there were a decline in other crimes like residential burglary. Intelligence policing was thus extensively used during this period to detect and curb crimes.

In African countries like Nigeria, it was reported that whereas the overall crime rate fell in 2020, there was a change in the pattern of crimes with many criminals changing from the physical contact crime to virtual contact crime (Cristanto & Prenio, 2020). It was reported that there was an upsurge in the cases of money laundering and terrorist financing through the use of the online services. According to Yamkut, Ayokanmi, Rotimi and Olasupo (2020) the period saw an upsurge in domestic violence, child abuse and rape. 799 arrests were made with the suspects being accused of rape cases. Consequently, crime investigations and intelligence policing shifted towards the use of technology (Cristanto & Prenio, 2019). Mashiloane (2014), observes that in South Africa, intelligence led policing has been enhanced by the use of technology with most police stations being equipped with intelligence gathering tools. In spite of this, the adoption of a comprehensive intelligence policing model is yet to be achieved. This reveals that African countries still face challenges in intelligence policing some of which arises from the failure to utilize the technological tools adequately (Zinn, 2010).

In Kenya there has been a surge in technology use in intelligence policing. Kumbuti (2013) examined on the adoption of technology by the police in Kenya as a strategy towards the detection of crimes in Nairobi. It was ascertained from the study that the police in Nairobi mostly make use of the personal mobile phones and walkie talkies as a technological tool when it comes to crime detection. Further it was ascertained that a lot

remains to be done in as far as the adoption of technology by the police through facilitation and enhancement of the technical capacities so that they can effectively detect crimes hence preventing their occurrence. A study by Amnesty International (2010) intelligence led policing still faces some challenges. The report observes that street level patrol police for instance do not have mobile phones for work and while some are issued with VHF radio, they are often in poor condition. The intelligence officers were also reported to lack adequate technological tools to enhance the gathering of information. In Kenya, the shift in crime patterns to online methods led to the enhamcement of the technology in intelligence policing. While most studies have examined on the use of technology in intelligence led policing, one of the biggest questions that has not been answered in the effectiveness of technology in intelligence led policing.

Statement of the Problem

Intelligence policing in Kenya has been hindered by among other things the nature of technology being used (Karake, 2014). With several crimes being reported on monthly basis there is need to ascertain whether using technology in intelligence led policing would have helped in the investigations and ultimately prevention of the crimes (National Police Service, 2020).

In Kenya, there has been an extensive use of conventional methods of preventing and investigating crimes like the use of preventive patrols along with the use of response calls. However with the advent of technologies like the CCTVs, forensic analysis and use of digital devices, there is a tremendous shift in the way intelligence policing is being conducted. Reporting of crime and offences is now done virtually. Authencity and authorship are very important when gathering intelligence virtually to ensure admissibility to court (Boscolegal, 2020). Understanding how to effectively gather intelligence using technological techniques without tampering with its integrity and authenticity is very vital.

This notwithstanding, there have been challenges in the use of technologies as crime patterns evolve in line with technologies. Criminal patterns have evolved with criminals adopting new technologies which sometimes cannot be detected by the investigative and intelligence agencies. The current study thus answers the question as to how the investigation bodies have utilise technology to gather intelligence and investigate crimes in Kenya. Moreover, this study was centered at bridging the gaps from the studies already done.

Objectives of the Study

The key goal for the investigation was to evaluate technology and intelligent policing in Nairobi City County, Kenya. The precise objectives of the study were;

- To analyze the effect of performance expectancy of using technology in intelligence policing in Nairobi City County.
- To evaluate the effect of perceived credibility of using technology in intelligence policing in Nairobi City County.
- To assess the effect of effort expectancy of using technology in intelligence policing in Nairobi City County.
- To determine the effect of facilitating conditions of using technology in intelligence policing in Nairobi City County.

LITERATURE REVIEW

Technology and Policing

Policing has undergone a paradigm shift over the last forty years. Policing in the contemporary times is much different from the policing during the 1970s. Previously the police would respond to calls for service and also investigated crimes (Goodisn, Davis & Jackson, 2015). In the modern times however the role of policing has shifted from being a reactive to being proactive hence the adoption of intelligence led policing among the countries of the world (Wexler, 2012). With this the focus has shifted from dealing with crimes to prevention

of crimes from happening. The advent of technology has not only helped in improving the way of life but has also helped in policing by way of facilitating accurate and timely information; the two key elements needed in effective policing.

Some of the most notable technological advances include the development of the location monitoring devices that help in tracking the criminal offenders, crime mapping software that helps in deploying police to areas where there is a high likelihood of crimes occurring, crime scene technology that helps in the collecting and evidence processing and interoperable web based and communication technologies that facilitate the police-community connections (Byrne & Marx, 2011). Harris (2007) categorized technological innovations in criminology into two; hard and soft technology. Hard technology is often described as the materials or hardware and entails devices and equipments that can be employed in the prevention of crime. The CCTV cameras, screening machines in the airports and other public places, metal detectors alongside alcohol sensor devices all fall into the category of the hard technology (Harris, 2007).

Soft technology often referred to as the software or information systems often encompasses the strategic use of information to curb crime (Byrne & Marx, 2011). The strategic use of information entails developing the risk and threat assessment instruments and information collection, data sharing, classification systems along with developing the analytical capabilities which will be the key focus in the study. The soft technology according to Byrne and Rebovic (2007) has helped the police in improving their investigative capacity and in collecting intelligence for the purpose of dealing with crimes before they can occur. Soft technology has also been found to help in crime mapping, crime analysis, enhancing criminal data, sharing of information and creation of watch lists of potential offenders.

Intelligence Led Policing (ILP)

ILP is a process through which the police collect, collate and analyse data on crimes for the purpose of providing information that can help in dealing with crimes. It basically assess the events, locations, timelines and networks of crime within a given area (Metscher, 2005). There are three main aspects of intelligence policing including information gathering, analysis of the collected information and the intelligence reports.

Information gathering entails the collection of data. The sources of these information vary and may range from the use of social media platforms, physical surveillance, electronic surveillance, confidential informants, undercover operations, internet, newspapers and other available public records (Warner, 2013). The effectiveness of crime control measures according to Ratcliffe (2016) is largely dependent on the quality of the information collected.

Analytical capabilities is also essential in intelligence policing. According to Gill and Phythian (2013) analytical capabilities may range from the skills of the staff analyzing the collected data on crime, it also covers the ability to analyse the patterns of crime, the criminal networks, the geographic location of the crimes, call records, timelines and the assessment of risks associated with the crimes. A proper analysis of information serves to effectively guide the crime control process.

Intelligence reports are also significant in intelligence policing. According to Ratcliffe (2016), intelligence reports are vital towards an ongoing investigation. The intelligence reports include; the operational analysis reports, strategic analysis reports, risk assessment reports, situational reports, recommendations as well as the use of feedback.

Theoretical Framework.

Two approaches are usually employed in data driven law enforcement, these are; ILP and predictive policing. Intelligence policing is aimed at identifying potential offenders, potential victims. According to the US Justice department (2017), ILP is a more colaborative approach that mixes; solving problems, sharing of information and police accountabilty along with strong intelligence operations. Predictive policing analyse data on crimes

within geographical areas but does not focus on identification of who will commit the crime, thus intelligence policing is much broader.

Over the years, intelligence has been described as the collection, culling, analysis and dissemination of strategic and critical information (Lerner, 2010). Information collection was mainly centered on the threats against the rulers and was done through individuals and established institutions. One of the oldest ways of collecting information was espionage as documeneted in military arts (Lerner, 2010). In the modern times and with the advent of technology, intelligence is done using technological techniques. Computers, photo evidences, CCTVs among other technological tools have helped in the collection and storage of critical information on crime and this has often helped in the prevention of crimes.

This study was anchored on the UTAUT model that was developed by Venkatesh (2003) The theory is premised on the idea that the behavior of users and their purpose to use technology is influenced by the perceived helpfulness and the easiness of use of technology (Vankatesh & Davis, 2000). It was also be anchored on the Ratcliffe Model of 2003.

Unified Theory of Acceptance and Use of Technology (UTAUT).

Intelligence led policing involves the use of various technological tools like CCTVs and other surveillance system. The theory formed the basis for the intervening variable in the study which is Technology. The theory advanced by Venkatesh et al, (2003) has six components. The first componenet is the Performance Expectancy (PE). This explains the benefits that the users of technology expect to get as a result of using it for instance; saving money, saving time, and service effectiveness. The second element of UTAUT is the Effort Expectancy (EE) which assesses extent of ease that is associated with the customers' usage of technology. If the intelligence analyst for instance perceive that using a certain technology is easy they would most likely use it. The third element is the Social Influence (SI). This is the social pressure from external environment surrounding an individual and may affect their behaviours and perceptions in certain actions. The fourth component is the Perceived Credibility (PC) which explains the role of security and trust in the users' willingness to use a particular technology. The fifth element is the Task Technology Fit (TTF) which explains that for the users to accept to use a technology, the technology must be able to fit their needs. The sixth component is the Facilitating Conditions (FC) which encompasses organisational and technical infrastructure supporting technology's usage.

The theory was helpful in two ways. First it was helpful in undertstanding the choice of the police and other investigative bodies in using a particular technology in crime investigation and intelligence policing. Secondly it was helpful in understanding the actions that informs people to commit crimes or engage in criminal actions. By understanding this, it helped in comprehending why the police opt for certain technological processes in crime investigation. Being able to predict the behaviours of the potential offenders is a key element in intelligence led policing as it help the police to focus more on gathering adequate information, build their analytical capabilities and prepare credible intelligence reports.

Ratcliffe Model

The Ratcliffe Model(2003) is also decribed as a 3i model as it deals with interpretation, influencing and Impacting. Interpretation deals with interpreting the criminal environment and involves actions like criminal mapping and use of appropriate technologies. Influencing deals with the extent to which the information availed by intelligence analysts in form of intelligence reports influence the decision makers within the intelligence unit or the police. Impacting has to do with the appropriate actions taken to impact the criminal environment and this comes in the form of designing strategies to deal with the criminal environment and this include the crime reduction strategies. This step introduces the role of decision making which this study examined as one of the intervening variables. Based on the Ratcliffe Model (2003) the researcher examined the intelligence policing by examining the criminal environment, intelligence analysis and intelligence

reporting and the central role that decision making plays in influencing the relationship between intelligence led policing and crime investigation. Figure 1 is a representation of the Ratcliffe Model.

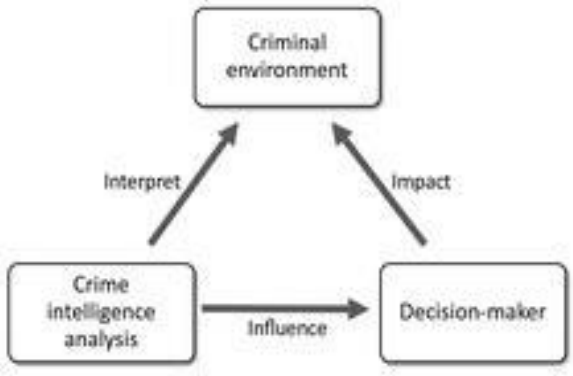

Figure 1: Ratcliffe Model (2003)

Empirical Review

Performance Expectancy of using Technology in Intelligence Policing

Ratcliffe (2004) sought to bring a comprehension on training and crime mapping needs of the law enforcement. Based on the Ratcliffe Model (2003), on intelligence policing, criminal environment was identified as one of the key elements that must be examined when dealing with intelligence. In this case crime mapping was found to be a key element in understanding the criminal environment. Along with crime mapping was the use of geographical informantion systems by the law enforcement. The study specifically examined hotspot mapping and geographic profiling as crime mapping tools and found that they are effective in the understanding of the crime environment. However, the study observed that the effectiveness of crime mapping was dependent on a proper training of the intelligence analysts so that they can provide accurate information to guide the decision makers. The current study examined the perceived expectancy of the technology used in intelligence policing and how they help criminal investigations in Nairobi city county.

La Vige, Lowry, Makman and Dwyer (2011) evaluated the application of surveillance cameras in crime control in the United States. Five states were subjected to an examination. Among the issues examined was the use of the public surveillance cameras in the analysing the crime environment and transmission of data. Among the key findings was that the application of public surveillance cameras helps in providing information that can be used as evidence in prosecuting a criminal offence; they aid in the arrest and supporting investigations, hence helping in crime control. The findings exhibited mixed results across various states with some indicating crime reduction while others showed no change. A similar survey was also carried out in USA with the main focal point being the effects of CCTV on crime. States like Chicago showed reduction of crimes (College of policing, 2015). It was further established that all the states had public surveillance cameras and were effective in crime reductions. The institutional setting of the US justice system varies from that of Kenya hence, this study examined the pereceived effectiveness of technology in intelligence policing and crime investigations within the Kenyan context to fill the research gap.

A survey by Wang (2012) sought to assess why the police need a geographic informantion system in crime investigation in the United States. The survey targeted the police departments in charge of crime investigations. The geographical information system was identified as a viable and effective tool in understanding the criminal environment and was found to enhance crime investigations in the USA. The system was also found to guide the implementation of policies and strategies towards fighting and preventing crimes. The current study examined intelligence policing within the Kenyan context and majorly focused on the performance expectancy of using technology and how effective they are in intelligence policing.

Jia (2013) examined on the implementation of the computerized crime mapping and how the use thereof was effective in law enforcement in USA. A survey was carried out covering both the local and state police agencies. Correlation, path and regresion analysis were utilised in data analysing. The research established that crime mapping was essential and effective in the understanding of the crime environment and using computerized mapping of crime helped in crime analysis and eventually help the law enformcemnt agencies in crime investigations. The study further observed that in crime mapping there is need to assign police officers to specific areas as well as training them and updating technology to enhance an understanding and interpretation of the crime environment. With respect to the current study, the focus was on the performance expectancy of using technology and how this influences the intelligence policing in Kenya.

Mburu (2015) examined the mapping and modeling of crime in the Eastern part of Nairobi, Kenya. The study endeavoured to use criminal geographic profiling to understand the crime environment in terms of the location or hotspots, common crimes, time the felony is happening, who commit the felony and the motivations behind them. The key finding from the survey which used regression analysis found out that crime mapping was instrumental in detecting crimes as well as in the prevention of crimes. The current study however examined intelligence based policing from a broader perspective to include other aspects like intelligence analysis and decision making processes that help in crime investigation.

Strom (2017) researched on how technology impacts policing strategies in the 21st century. Among the areas examined were how this technology helps in analysing crime environment and in crime detection. The sample size considered was 1200 comprising of experts drawn from various states. Site visits locations were stratified into municipals and sheriff's agencies of different sizes; large, medium and small. The key findings indicated that among the states examined, 96 percent had implemented at least one of the eighteen technologies including car cameras, social media, information sharing alongside visual based technology. A positive correlation between the adoption of technology and crime detection was ascertained hence the use of technology was effective. Stratified sampling technique was employed which was also employed in the current study. However, the current study carried out regression analysis from the data collected through questionnaires.

Perceived Credibility of using Technology in Intelligence Policing

Metscher and Gilbride (2005) examined the role of intelligence in investigations in the United States (USA). One of the key elements of intelligence policing examined was intelligence reporting. The intelligence reports were examined on the basis of threat assessments, vulnerability assessments and site assessments. The key finding from the study showed that intelligence reports are effective in the investigation of crimes. Nevertheless, the value of these reports cannot be realized unless the information or the reports are credible and disseminated correctly. It was observed that the credibility, completeness and timeliness of the intelligence report is vital if it is to achieve the intended purposes. The study did not establish the perceived credibility of using technology in intelligence policing in Nairobi.

According to Mashiloane (2014), the sources of intelligence information are many with varied quality. Consequently, the value of information is dependent on applicability, timeline and reliability. An outdated information for instance has a reduced value especially with regard to forecasting. An information that is not trusted is of low value for the reason that an extra effort will be needed to establish the veracity of the information. The accuracy and effectiveness of an intelligence is therefore contingent on the quality and value of information. The nature of information was examined as an intervening variable to the association between ILP and crime investigation in Nairobi City County, Kenya.

Canaday (2017) assessed how democratization of technology has enhanced intelligence based reporting in California, USA. Two technological tools were assessed; use of surveillance cameras and use of social media. It was observed that nine in every ten citizens have access to the internet hence allowing considerable access to social media platforms like facebook and twitter. It was ascertained that 80 percent of the law enforcement

officers use social media in conducting investigations. Social media platforms were found to effectively facilitate the sharing of information. Surveillance cameras were also identified as an increasingly important tool that enhances intelligence based policing in California. Surveillance cameras were found to be instrumental in the identification and apprehension of the offenders and help in reducing crimes. While the study focused on how technology has enhanced intelligence based reporting, it did not broadly examine the connection between the perceived credibility of technology used in intelligence reporting in crime investigations.

Burcher and Whelan (2018) examined on ILP in practice. The study sought to examine the key elements towards a successful ILP with a focus on the United Kingdom, USA and Australia. Technology and the nature of information was found to be the key element and determinant of a successful intelligence led police processes. It is therefore apparent that a closer attention should be paid to the nature of information which include; the quality of information, accuracy of the information, validity of the information and the timeliness of the information which was examined in the study from the viewpoint of how it influences the relationship between successful intelligence policing and investigation of crimes. Quality of information and accuracy are largely dependent on the credibility of the technology used and this was the focus under the current study.

Effort Expectancy of using Technology in Intelligence Policing

According to Ratcliffe Model (2003), the decision making process is an integral part in intelligence policing and it involves the design of actions, strategies and policies geared towards impacting the criminal environment. The ability to make effective decisions according to Ratcliffe (2003) is dependent on the information availed by the intelligence analyst in form of intelligence reports. A decision on the technology to use is also depended on the ease of use. Information is the most significant building block of an intelligence led policing. The nature of intelligence information is vital if the crime investigations are to be executed successfully.

The report by the US Justice Department (2015) revealed the importance of using the appropriate technology in collecting information in intelligence policing. The law enforcement officers are required to collect information that is accurate and reliable as they help in the investigation process. The choice of technology should be driven by its efficiency and the ease of use. The department also introduces the element of information sharing among the various departments within the law enforcement bodies to make certain that the information to be used is acceptable and valid hence useful to the investigative processes.

Sigilai (2018) while assessing on the intelligence policing observes that the use if technology can help the investigative process by facilitating a wider and reliable information. From the survey, it was observed that the right technology is determined by its ease of use and effectiveness. Further it was observed that not only does technology help in facilitating the accuracy and veracity of information but it also facilitate the sharing of the same among the police departments. The proposed study seeks to investigate the effort expectancy of technology in intelligence policing and investigation of crimes.

Facilitating Conditions of using of Technology in Intelligence Policing

Harris (2007) notes that a number of gadgets that are high-tech have been put in place and they aid in the collection of data in crime hence crime combating in United States. For instance it was identified that in the United States computer crime analysis and crime mapping software were highly valuable in data recording hence crime prevention. Tenge et al.,(2015) also notes that computers have the capacity to handle vast information which have considerably helped security in upgrading their work exercise. It therefore implies that one of the facilitating conditions of an effective crime investigation is the use of high tech gadgets. The current study concentrated on facilitating conditions of using technology in intelligence policing within the Kenyan context.

Ostering and Ward (2007) observes that in an effort to fight crime, electronic methods are very instrumental in recording, as well as analysis of information in the United States. He observes that it facilitates the creation, storing, retrieving and applying the information while helping in combating crime. Further, it was established that criminals use data available alongside sophisticated technologies thus proactive approaches need to be reconsidered (Gottschalk, 2010). While the study examined how the technologies facilitates the creation and retrieving of information in intelligence policing it did not examine the facilitating conditions within the law enforcement agencies that help in crime investigation.

La Vige, Lowry, Makman and Dwyer (2011) evaluated the adoption of the public surveillance cameras in crime control in the United States. Five states were subjected to an examination. Among the issues examined was the use of the public surveillance cameras in the transmission of data. Among the key findings was that the use of public surveillance cameras helps in facilitating the provision of information that can be used as evidence in prosecuting a criminal offence; they facilitate the arrest and supporting investigations, hence helping in crime control. The findings exhibited mixed results across various states with some indicating crime reduction while others showed no change. A similar survey was also carried out in USA with the main focal point being the effects of CCTV on crime. States like Chicago showed reduction of crimes (College of policing, 2015). It was further established that all the states had public surveillance cameras. The current study examined the facilitating conditions in terms of the technical and organizational infrastructure in using technology in intelligence policing and how they influence crime investigations within the Kenyan context.

Conceptual Framework

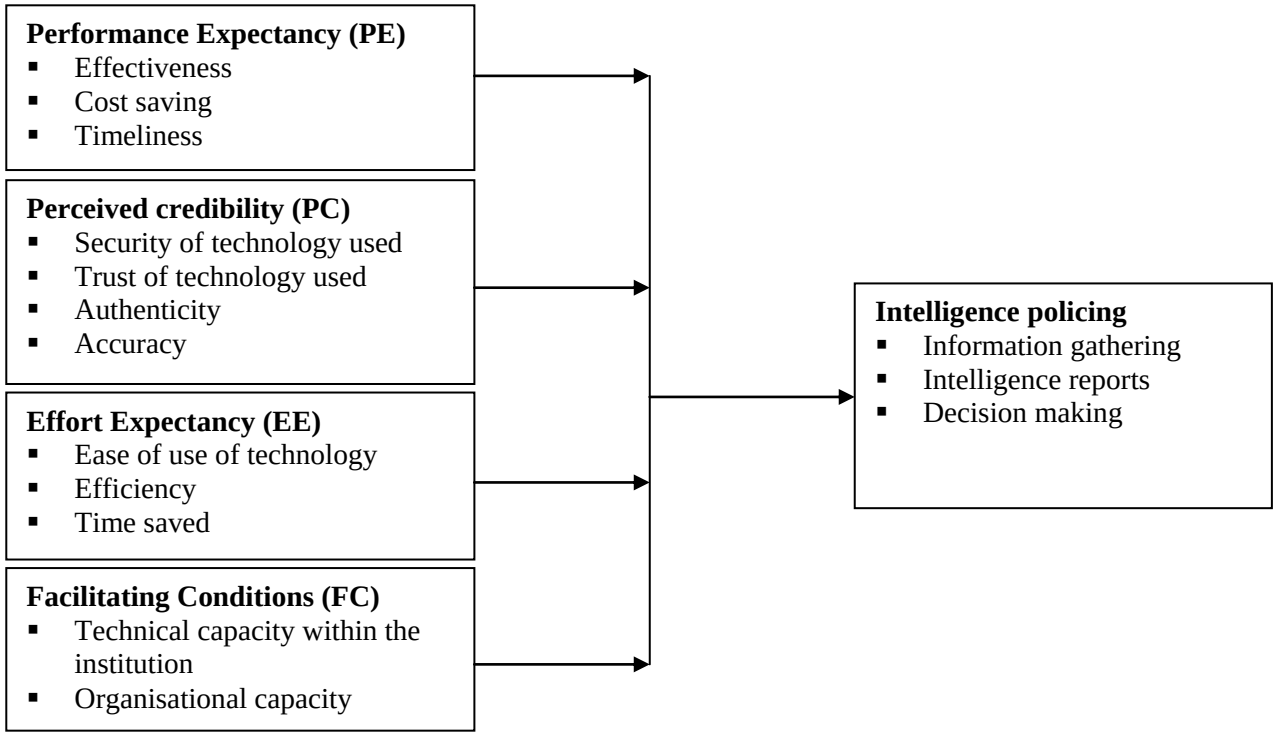

Figure 2: Conceptual Framework
Source:Adopted from UTAUT Model (Venkatesh et al, 2003)

METHODOLOGY

The study utilized a correlational research design. The Site of the study was the DCI headquarters located at Kiambu road next to Karura forest in Nairobi City County. The DCI headquarters is 6.6 kilometres away from the Nairobi Central Business District through Ring Road Ngara, 8.8 kilometres through the Muranga road and 8.6 kilometres through the Muratina Street. The site was chosen by the researcher due to proximity and accessibility by the researcher. The target population, was the investigators that were within the Directorate of Criminal Investigation Department in Nairobi. The investigators were drawn from the 13 sub departments within the DCI Department; Administration directorate, operations, investigations, forensic, crime research, National central bureau, Counter-terrorism, criminal intelligence, public complaints, inspections, logistics, reforms and legal and crime affairs. The units had a total of 175 investigators hence the target population was 175 investigators. A stratified random sampling was employed.

Data collection method entailed the process that was used in collecting raw and untreated information from the field to be used in the analysis process to provide solutions to the research objectives (Kothari, 2014). To draw conclusions to the study objectives, both primary and secondary data were utilised. The primary data was collected from the field through the use of self-administered questionnaires which were structured with close-ended questions to ensure precise responses (Punch ,2013).

The use of questionnaires in data collection was considered suitable since it enabled the researcher to reach a large section of the population or subjects who have the ability to read and write independently. Sekaran (2003) notes that where a researcher comprehends how to measure variables and what is required questionnaires are efficient to utilize. In the present study, questionnaires were issued to participants then they collected within a period of One week. The collected data was then be verified to ensure they are properly filled; incomplete questionnaires were not be used in the analysis. Upon collection of data from the questionnaires and the secondary sources, the information was cleaned and coded by the researcher for interpretation. The study also utilised Statistical Package for the Social Sciences (SPSS) version 24 to obtain inferential and descriptive statistics. Whereas inferential statistics used regression to analyze the effect of technology on ILP, descriptive statistics computed the percentages obtained from multiple responses. likert scale was employed where 1=strongly disagree,2=disagree,3=neutral,4=agree, and5=strongly agree. The data from the likert scale was converted to percentages where the average percentages were done. The results were displayed in tabular form and charts. The regression model took following form:

$$Y=\beta_0 + \beta_1 PE_1 + \beta_2 PC_2 + \beta_3 EE_3 + \beta_4 FC_4$$

Y = Intelligence led policing
PE_1= Performance expectancy of using technology in intelligence policing
PC_2 = Perceived credibility of using technology in intelligence policing
EE_3 = Effort expectancy of using technology in intelligence policing.
FC_4 = Facilitating Conditions of using technology in intelligence policing.

95 percent confidence level was used in the analysis of the link between the independent and dependent variables.

FINDINGS

Response Rate

The response rate is illustrated as a percentage of the total respondents that were targeted in a research. A total of 91 questionnaires were distributed through drop and pick and participants were required to fill them within the stipulated period of 2 weeks. There was an eighty six percent response rate which represented 78 respondents. Thirteen of the targeted respondents did not however gave their response hence the non response

was 14 percent. According to Kothari (2014) a good rate of response should be above 50 percent hence from the findings it is apparent that the response was ample for analysis.

Descriptive Statistics

The study considered descriptive statistics based on the various aspects of technology in intelligence policing; PE, PC, EE and FC. The fidings were shown in Tables below. likert scale was utilised where 1=strongly disagree,2=disagree,3=neutral,4=agree, and 5=strongly agree.

Performance Expectancy

The descriptive statistcs on performance expectancy is presented in Table 1.

Table 1: Performance Expectancy of Technology

Statement	1	2	3	4	5
The Criminal Investigation Department takes into consideration the performance expectancy of investigative technologies prior to using them	11.0%	10.0%	9.0%	39.0%	31.0%
Our investigative tools are able to give the details of the crime patterns and ensures faster response	17.0%	13.0%	5.0%	35.0%	30.0%
The surveillance systems that we use are effective in geographical assessments of where the crimes are commited and in crime investigations	9.0%	23.0%	3.0%	37.0%	28.0%
There is a reasonable amount of time saved through use of the existing technology in intelligence policing and crime investigations	5.0%	10.0%	4.0%	44.0%	37.0%
The technology used in intelligence policing has helped in reducing the personnel costs and operational costs incurred during crime investigations	12.0%	13.0%	3.0%	38.0%	34.0%
The analytical tools used are effective in analyzing the information gathered in the crime scene	8.0%	11.0%	8.0%	40.0%	33.0%
Information obtained from the social media platforms is effective, timely and convenient in crime investigations.	21.0%	31.0%	7.0%	20.0%	21.0%
The technologies used in intelligence policing are effective in the Sharing of and analysis of the crime trends	7.0%	20.0%	8.0%	36.0%	29.0%

Source: Research Data (2022)

The findings in Table 1, shows that 39% of the respondents agreed and 31 percent strongly agreed agreed that the Criminal Investigation Department takes into consideration the performance expectancy of investigative technologies prior to using them while 21% disagreed (10% disagreed and 11% strongly disagreed). Considering those who agreed and strongly agreed it can be inferred that 70% of the respondents who are the majority were of the view that DCI takes into consideration the performance expectancy of investigative technologies prior to using them. As noted by La Vigne, Lowry, Markman and Dwyer (2011) most states in the USA have embraced the use of public surveillance systems with an expectation of improving criminal investigations hence it can be inferred that performance expectancy of public surveillance systems is to enhance information sharing in criminal investigations.

Most respondents also agreed that their investigative tools are able to give the details of the crime patterns and ensures faster response. From the findings 35% agreed and 30% strongly agreed hence majority (65%) were of the view that investigative tools are able to provide crime patterns details hence faster response. However 30% disagreed; 17% disagreed and 13% strongly disagreed. Based on the Ratclife Model (2003), understanding the criminal environment and especially the crime patterns are effective in intelligence led policing as it ensures that accurate information forms the basis of an investigation.

The respondents were further asked to state if they agreed that surveillance systems that used are effective in geographical assessments of where the crimes are commited and in crime investigations. Based on the findings in Table 1, sixty five percent agreed (37% agreed and 28% strongly agreed) while 32 percent disagreed (23% disagree and 9% strongly disagreed). Geographical assessment is therefore essential in an effective intelligence policing system which as found by Ratcliffe (2004) geographic profiling helps in crime mapping hence guides the intelligence analyst in decision making.

From the findings in Table 1, eight one percent of the participants (44% agreed and 37% strongly agreed) were of the view that there was a reasonable amount of time saved through use of the existing technology in intelligence policing and crime investigations. However fifteen percent of the respondents (10% who disagreed and 5% who strongly disagreed) were of the opinion that that there was no reasonable amount of time saved through use of the existing technology in intelligence policing and crime investigations. A study by Strom (2017) on how technology influence policing in the 21st century revealed that with technology, policing strategies have become efficient hence technology saves a lot of time that investigation process could have taken.

Furthermore, the respondents were asked to point out if the technology used in intelligence policing had helped in reducing the personnel costs and operational costs incurred during crime investigations. Based on the findings in Table 1, thirty eight percent agreed and thirty four percent strongly agreed which implies that seventy two percent (72%) of the respondents were of the view that a reduction in operational and personnel cost will be achieved if if the technology is used. This implies that technology usage in policing reduces the number of personnel that would have been deployed for an investigation hence reducing personnel costs and by extention the cost of operation.

From the results, 73% of the respondents (comprising 40% who agreed and 33% who strongly agreed) stated that the analytical tools used are effective in analyzing the information gathered in the crime scene. However 19% were of the contrary view (11% disagreed and 8% strongly disagreed). A study by Wang (2012) examined the need for geographic information systems in police departments. At the centre of criminal investigations is the need for accurate information hence proper systems should always be put in place to ensure that the criminal investigations are effective.

Finally the partcipants were asked to indicate if the technologies used in intelligence policing are effective in sharing of and analysis of crime trends. From the findings in Table 1, thirty six percent (36%) and twenty nine percent (29%) percent of the respondents agreed and strongly agreed respectively that technologies used in intelligence policing are effective in sharing of and analysis of crime trends. However, 20 percent disagreed and 7 percent strongly disagreed. It can be inferred that 65% were of the view that technologies used in intelligence policing are effective in sharing of and analysis of crime trends while 27% were of the contrary opinion. The findings are similar with the findings by Wang (2012), and Jia (2013) who established that computerization of crime mapping along with the use of geographical information systems have a positive correlation with information sharing in crime investigations.

Performance Credibility

The descriptive statistcs on performance credibility is exhibited in Table 2.

Table 2: Performance Credibility of Technology

Statement	1	2	3	4	5
Perceived credibility of technology is a key consideration by the DCI in intelligence policing and crime investigations	16.0%	22.0%	9.0%	32.0%	21.0%
There are adequate security features in the technology used in intelligence policng and crime investigations	22.0%	25.0%	2.0%	35.0%	16.0%
To ensure that technology used is always credible, a continuous assessment of its effectiveness is done continuously.	9.0%	20.0%	2.0%	41.0%	28.0%
The department has a lot of confidence and trust in the technology currently used in intelligence policing	9.0%	13.0%	3.0%	38.0%	37.0%
To build credibility of technology used, the intelligence information collected is subjected to verification by confidential informants	14.0%	16.0%	7.0%	38.0%	25.0%
Information collected from the CCTVs is considered credible	8.0%	12.0%	8.0%	39.0%	33.0%
Information collected from the social media platforms is considered credible	23.0%	31.0%	10.0%	20.0%	16.0%
The technologies used in intelligence policing are safe from unauthorized and premature access	7.0%	20.0%	8.0%	36.0%	29.0%
The perceived credibility of technologies used in intelligence policing has improved crime investigations	7.0%	10.0%	7.0%	40.0%	36.0%

Source: Field Data (2023)

The findings in Table 2, show that 53% of the respondents (32% who agreed and 21% who strongly agreed) were of the view that the perceived credibility of technology is a key consideration by the DCI in intelligence policing and crime investigations. On the other hand 38% of the respondents (22% who disagreed and 16% who strongly disagreed) did not believe that PC is a key consideration. As observed by Metscher and Gilbride (2005) while examining the role of intelligence in investigations in the United States (USA), the value of intelligence reports cannot be realized unless the information or the reports are credible and disseminated to the right people at the right time. This implies that perceived credibility influences the use of technology in crime investigations.

From the results in Table 2, there are adequate security features in the technology used in intelligence policing and crime investigations as indicated by 51% of respondents (35% who agreed and 16% who strongly agreed). However 47 percent of the respondents (25% disagreed and 22% strongly disagreed) were of the contrary view, and this could be dependent on their work stations and the available technologies used in these work stations. Burcher and Whelan (2018) examined some of the features that the technology should have and observed that quality and accuracy are key features and are indicative of security of a technology.

The findings in Table 2 also indicate that sixty nine percent (41% agree and 28% strongly agree) of the respondents indicated that to ensure that technology used is always credible, a continuous assessment of its effectiveness is done continuously. Twenty nine percent (20% who disagreed and 9% who strongly disagreed) indicated that there was no continuous assessment done to ensure credibility of technology used. Most studies done while they discuss the credibility of the technologies used do not discuss the aspect of continuous assessments and trainings. For instance, Metscher and Gilbride (2005) examined credibility of intelligence

reports and various assessments done like threat assessment, site assessments and vulnerability assessments but do not discuss the aspect of training hence the current findings are an improvement from previous studies.

Moreover, the findings in Table 2, show that 75% of the respondents (comprising 38% who agreed and 37% who strongy agreed) indicated that their departments had a lot of confidence in the technology used in intelligence policing while 22% of the respondents (comprising 13% who disagreed and 9% who strongly disagreed) did not believe that their departments had a lot of confidence in technology used. As observed by Mashiloane (2014), technology in intelligence policing specifically in information should be guided by reliability, timeliness and applicability. A system that gives confidence shouls possess these features in addition to providing credible and quality information.

The results in Table 2 also show that 63 percent of the study participants (constituting 38% who agreed and 25% who strongly agreed) stated that to build credibility of technology used, intelligence information collected is subjected to verification by confidential informants. However 30 percent (comprising 16% who disagreed and 14% who strongly disagreed) did not think that confidential informants should verify information collected to build credibility of technology used. The need for verification is to ensure accuracy of information which eventually lead to successful investigation of crimes. As noted by Burcher and Whelan (2018) technology and the nature of information was found to be the key element and determinant of a successful intelligence led police processes.

According to 72 percent of the respondents (39% who agreed and 33% who strongly aagreed), information collected from the CCTVs is considered credible while 20 percent (comprising 12% who disagreed and 8% who strongly disagreed) did not think that information collected from CCTVs is always credible. This was perharps driven by the condition of CCTVs in their respective stations. La Vige, Lowry, Makman and Dwyer (2011) evaluated the use of surveillance cameras in crime control in the United States. Five states were subjected to an examination. Among the issues examined was the use of public surveillance cameras in analysing the crime environment and transmission of data and it was found that the use of surveillance cameras helps in providing information that can be used as evidence in prosecuting a criminal offence; they aid in the arrest and supporting investigations, hence helping in crime control.

Regarding the information collected from the social media platforms, 54% of the respondents (constituting 31% who disagreed and 23% who strongly disagreed) indicated that Information collected from the social media platforms is considered incredible while 36% stated that the information collected was credible. The findings however contradicts the findings by Canaday (2017) which established that social media is an effective tool used in USA in intelligence based reporting. The study established that 80 percent of law enforcement officers in USA uses social media. The lack of credibility in social media in Kenya could be due to increased use of social media to spread fake information.

Sixty five (65) percent of participants (constituting 36% who agreed and 29% who strongly agreed) stated that the technologies used in intelligence policing are safe from unauthorized and premature access while twenty seven percent (20% who disagreed and 7% who strongly disagreed) were of the contrary view. Burcher and Whelan (2018) examined some of the features that the technology should have and observed that quality and accuracy are key features and are indicative of security of a technology.

Finally, the perceived credibility of technologies used in intelligence policing has improved crime investigations as indicated by 76 percent of the respondents (comprising 40% who agreed and 36% who strongly agreed). This means that the outcome of a criminal investigation is as good as the credibility of the technology used. According to Mashiloane (2014), the sources of intelligence information are many with varied quality. Consequently, the value of information is dependent on applicability, timeline and reliability.

Effort Expectancy

The descriptive statistcs on effort expectancy of technology is presented in Table 3.

Table 3: Effort Expectancy of Technology

Statement	1	2	3	4	5
The ease of use of technology is considered prior to using it in intelligence policing and crime investigations	19.0%	12.0%	5.0%	40.0%	24.0%
The existing technologies are convenient and easy to use	14.0%	19.0%	5.0%	32.0%	30.0%
To ensure the ease of use of the existing technologies, the investigators are continuously subjected to trainings	13.0%	14.0%	3.0%	41.0%	29.0%
The DCI has invested in the upgrading of its investigative systems and technologies to simplify investigation processes.	22.0%	17.0%	6.0%	28.0%	27.0%
The DCI has increased the geographical coverage of CCTVs to ensure that the investigative processes are easy and simplified	20.0%	20.0%	5.0%	29.0%	26.0%
Every kind of report gives clear recommendations that have aided the department in investigation processes	11.0%	13.0%	4.0%	38.0%	34.0%
The existing technologies have eased the sharing of intelligence information and reports hence improving the investigation of crimes	10.0%	15.0%	2.0%	42.0%	31.0%

Source: Field Data (2023)

The findings in Table 3 show that 64 percent of the participants (40% who agreed and 24% who strongly agreed) indicated that the ease of use of technology is considered prior to using it in intelligence policing and crime investigations. Nevertheless 31 percent of the respondents (comprising of 12% who disagreed and 19% who strongly disagreed) indicated that the ease of use of technology was being given less consideration. As observed under the Ratcliffe Model (2003), the ability to make effective decisions is dependent on information which is is availed through technology. Under the Utility Theory of Acceptance and Use of Technology, the ease of use of technology determines whether a particular technology will be employed.

The respondents were also asked to state whether the existing technologies were convenient and easy to use to which 62 percent of partcipants (32% who agreed and 30% who strongly agreed) indicated that existing technologies were convenient and easy to use while 33 percent (19% who disagreed and 14% who strongly disagreed) did not think that existing technologies were convenient and easy to use. Some of the technologies employed include the use of CCTV cameras which are mostly convenient with accurate information. A report by the US Justice Department (2015) on use of technology in intelligence policing notes that intelligence policing technologies used brings a lot of convenience.

On the aspect of trainings on technology to increase the ease of use, 70 percent of participants (41% who agreed and 29% who strongly agreed) stated that to ensure the ease of use of existing technologies, the investigators are continuously subjected to trainings. On the contrary, 27 percent of the respondents(comprising 14% who disagreed and 13% who strongly disagreed) indicated that the investigators were not subjected to trainings. The effort expectancy as explained under the UTAUT Model helps in indicating the ease of use of technology hence the ease of ease can be enhanced through continuous trainings as it enables the investigative teams to fully understand the technology hence making usage easy.

Fifty five percent of the respondents (28% who agreed and 27% who strongly agreed) also indicated that the DCI had invested in the upgrading of its investigative systems and technologies to simplify the investigation processes. However 39 percent of the respondents (comprising 17% who disagreed and 22% who strongly

disagreed) felt that the DCI had not done enough in its technology upgrade. The DCI in July 2022, established a modern forensic investigation lab to enhance its investigative capacity. Sigilai (2018) observed that the use of technology can enhance investigative processes by facilitating a wider and reliable information.

Additionally, fifty five percent of the respondents (comprising 29% who agreed and 26% who strongly agreed) stated that the DCI had increased the geographical coverage of CCTVs to ensure that the investigative processes are easy and simplified. On the other hand, 40 percent of the respondents (comprising 20% who disagreed and 20% who strongly disagreed) felt that the DCI had not fully increased geographical coverage of CCTVs. However based on the findings, there has been increased usage of CCTVs in Kenya as one of the modern ways of collecting information. A US report by the College of Policing (2015) observed that with the use of CCTVs crime reduction had reduced in Chicago.

Further the participants were asked to state if every kind of intelligence report gives clear recommendations that aid the DCI in investigation based on technology used to which 72% of the participants (comprising 38% who agreed and 34% who strongly agreed). Further, 24 percent of the respondents (comprising 13% who disagreed and 11% who strongly disagreed) did not believe that every kind of report gives clear recommendations. Metscher and Gilbride (2005) examined intelligence policing and observed that intelligence reporting is an integral part of intelligence led policing as they form the basis of investigation of crimes.

Finally, 73% of the respondents (comprising 42% who agreed and 31% who strongly agreed) indicated that the existing technologies had eased the sharing of information and reports hence improving crime investigations. The US Justice Department Report (2015) revealed the importance of using appropriate technology in collecting information in intelligence policing. According to the report the ease of use of technology facilitates information sharing among the respective departments within the law enforcement bodies.

Facilitating Conditions

The descriptive statistcs on facilitating conditions of technology is presented in Table 4.

Table 4: Facilitating Conditions of Technology

Statement	1	2	3	4	5
The facilitating conditions of using technology in intelligence policing is considered in crime investigations	9.0%	12.0%	4.0%	38.0%	37.0%
The department is well facilitated with the physical surveillance tools like the CCTV cameras.	11.0%	19.0%	5.0%	35.0%	30.0%
The are adequate crime mapping systems used in intelligence policing	18.0%	21.0%	4.0%	30.0%	27.0%
There is enough technical infrastructure to facilitate intelligence policing and crime investigations	22.0%	13.0%	6.0%	32.0%	27.0%
In addition to the investigators, the department has confidential informants who provide information on potential crimes on regular basis hence there are adequate personnel	10.0%	7.0%	1.0%	42.0%	40.0%
There are enough experts on the various technologies used by the department in intelligence policing and investigation of crimes	14.0%	12.0%	3.0%	38.0%	33.0%
There is adequate organizational infrastructure to facilitate the use of technology in crime investigations	23.0%	19.0%	7.0%	30.0%	21.0%
The facilitating technical and organizational infrastructure has helped improving intelligence policing hence making crime investigations effective	7.0%	10.0%	3.0%	43.0%	37.0%

Source: Field Data (2022).

From the outcome in Table 4, seventy five percent of the respondents (comprising 38% who agreed and 37% who strongly agreed) stated that the facilitating conditions of using technology in intelligence policing is considered in crime investigations. On the contrary, 21 percent of the respondents (comprising 12% who disagreed and 9% who strongly disagreed) were of the contrary opinion. Ostering and Ward (2007) observes that in an effort to fight crime, electronic methods are very instrumental in recording, as well as analysis of information in the United States. He observes that it facilitates the creation, storing, retrieving and applying the information while helping in combating crime.

Sixty five percent of the respondents (comprising 35% who agreed and 30% who strongly agreed) stated that the DCI is well facilitated with physical surveillance tools like the CCTV. A US report by the College of Policing (2015) observed that with the use of CCTVs crime reduction had reduced in Chicago. La Vige, Lowry, Makman and Dwyer (2011) evaluated the application of surveillance cameras in crime control in USA. Among the key findings was that the use of public surveillance cameras helps in facilitating the provision of information that can be used as evidence in prosecuting a criminal offence; they facilitate the arrest and supporting investigations, hence helping in crime control.

Another aspect of facilitating conditions examined was the use of crime mapping systems. From the outcome in Table 4, fifty seven percent of the respondents agreed (these are 30% who agreed and 27% who strongly agreed) that there were adequate crime mapping systems used in intelligence policing. However, 39 percent of the respondents (comprising 21% who disagreed and 18% who strongly disagreed) felt that the crime mapping systems were not adequate in intelligence policing. Harris (2007) notes that a number of gadgets that are high-tech have been put in place and they aid in the collection of data in crime hence crime combating in United States. For instance it was identified that in the United States computer crime analysis and crime mapping software were highly valuable in data recording hence crime prevention.

Fifty nine percent of the respondents (comprising 32% who agreed and 27% who strongly agreed) also stated that there was enough technical infrastructure to facilitate intelligence policing and crime investigations while 35 percent of the respondents (comprising 13% who disagreed and 22% who strongly disagreed) indicated that the technical infrastructure was not adequate. Ostering and Ward (2007) observes that in an effort to fight crime, there has to be adequate infrastructure and equipments for instance electronic methods are very instrumental in recording, as well as analysis of information in the United States. He observes that it facilitates the creation, storing, retrieving and applying the information while helping in combating crime.

In addition to the investigators, the department has confidential informants who provide information on potential crimes on regular basis hence there are adequate personnel as indicated by 82 percent of the respondents (42% who agreed and 40% who strongly agreed). As stated by Warner (2013), confidential informants are very vital in intelligence policing as they facilitate information sharing which ensures that intelligence policing is effective. Further, 71 percent of the respondents (comprising 38% who agreed and 33% who strongly agreed) stated that there were enough experts on the various technologies used by the department in intelligence policing and investigation of crimes. Experts can work hand in hand with confidential informants to produce credible and reliable intelligence information and reports.

There is also adequate organizational infrastructure to facilitate the use of technology in crime investigations as noted by 51% of the respondents (30% who agreed and 21% who strongly agreed) while 42% of the respondents (19% who disagreed and 23% who strongly disagreed) felt that the organizational infrastructure was inadequate. The variances in opinions could be dependent on the nature of infrastratcure within their respective departments. Kumbuti (2013) examined on the adoption of technology by the police in Kenya as a strategy towards the detection of crimes in Nairobi City County and was ascertained from the study that a lot remains to be done in as far as the adoption of technology by the police through facilitation and enhancement of the technical capacities so that they can effectively detect crimes hence preventing their occurrence. Finally 80 percent of the respondents (comprising 43% who agreed and 37% who strongly agreed) stated that

facilitating technical and organizational infrastructure has helped in improving intelligence policing hence making crime investigations effective.

Inferential Statistics

The study also used inferential statistics based on the various aspects of technology in intelligence policing; PE, PC, EE and FC. The fidings are shown in Tables below.

Model Summary

The model helps in showing the coefficient of determination (R2). Table 5 exhibits the model summary.

Table 5: Model Summary

Model	R	R-Square	Adjusted R-Square	S.E of the Estimate	Sig. F Change
1	.840[a]	.706	.689	.54995	.000

a. Predictors: (Constant), Faciliating Conditions, Effort expectancy, Performance credibility, Performance expectancy

Source: Research Findings (2022).

The outcomes in Table 5 shows that the coefficient of determination (R^2) is 0.706 which becomes 0.689. when adjusted. Coefficient of determination (R^2) overestimates variations if not adjusted hence adjusted R^2 after adjustment is used. The R^2 adjusted (0.689) which is 68.9% implies that 68.9% of the changes in intelligence policing is influenced by use of technology on the basis of four aspects; perceived credibility, effort expectancy, performance expectancy and facilitating conditions.

Regression Analysis

The regression analysis showed the link between technology use and ILP and the results are herein.

Table 6: Regression Output

	Unstandardised Coefficients		Standardised Coefficients			95.0% Confidence Interval for B	
	B	Std Error	Beta	t	Sig.	Lower Bound	Upper Bound
(Constant)	-1.900	1.101		-1.726	.089	-4.093	.294
X1	.807	.260	.357	3.107	.003	.289	1.325
X2	1.025	.246	.455	4.160	.000	.534	1.516
X3	.318	.154	.200	2.058	.043	.010	.625
X4	.616	.259	.280	2.373	.020	-1.133	.099

Source: Research Findings (2022)

The test significance level was .05.From the outcome in Table. 6, the regression output is presented in the model below;

$Y = -1.900 + 0.807_1X_1 + 1.025_2X_2 + 0.318_3X_3 + 0.616_4X_4 + \sum i$

Where: Y is the Intelligence policing.

X_1 is the Performance expectancy of technology (PE)

X_2 is the Performance credibility of technology (PC)

X_3 is the Effort expectancy of technology (EE)

X_4 is the Facilitating conditions of technology (FC)

Based on outcome in Table 6, without the application of the technology in intelligence policing crime investigations drop by 1.9 times. The theory advanced of UTAUT advanced by Venkates et al, (2003) explains the importance of technology on the basis of six components; PE, PC, EE, FC, SI and TT. This show that technology usage is significant in intelligence policing.

The first objective was aimed at analyzing the effect of performance expectancy of technology in intelligence policing in Nairobi City County. This objective aimed at answering the question "What is the effect of performance expectancy of technology in intelligence policing in Nairobi City County?" Based on the regression output in Table 6, performance expectancy has a positive and significant effect on intelligence policing and crime investigations in Nairobi City County. The regression coefficient is 0.807 while the p value is .003 which indicate significance since it is less than .05 significance level. Past studies have shown that the benefits expected to accrue from using a technology influence its usage and level of success. La Vige, Lowry, Makman and Dwyer (2011) for instance evaluated the use of surveillance cameras in crime control in the United States and established that the utilization of public surveillance cameras helps in providing information that can be used as evidence in prosecuting a criminal offence; they aid in the arrest and supporting investigations, hence helping in crime control. Similar findings were also established by Mburu (2015) in relation to mapping technologies.

The second objective was aimed at analyzing the effect of perceived credibility of technology in intelligence policing in Nairobi City County. The objective aimed at answering the question "What is the effect of perceived credibility in intelligence policing in Nairobi City County?" Based on the regression output in Table 6, perceived credibility has a positive and significant effect on intelligence policing and crime investigations in Nairobi City County. The regression coefficient is 1.025 while the p value is .000 which indicate significance since it is less than .05 significance level. The findings are consistent with that of past studies. Metscher and Gilbride (2005) examined the role of intelligence in investigations in the United States and found that the value of intelligence reports reports cannot be realized unless the information or the reports are credible and disseminated to the right people at the right time. It was observed that the credibility, completeness and timeliness of the intelligence report is vital if it is to achieve the intended purposes hence technology helps in building the credibility.

The third objective analyzed the effect of effort expectancy of technology in intelligence policing in Nairobi City County. The research question was "what is the effect of effort expectancy of technology on intelligence policing in Nairobi City County?" Based on the regression output in Table 6, effort expectancy has a positive and significant effect on intelligence policing and crime investigations in Nairobi City County. The regression coefficient is 0.318 while the p value is .043 which is less than .05 significance level hence indicate significance. Sigilai (2018) while assessing on the intelligence policing observes that the right technology is determined by its ease of use and effectiveness. Further it was observed that not only does technology help in facilitating the accuracy and veracity of information but it also facilitate the sharing of the same among the police departments.

The fourth objective was aimed at analyzing the effect of facilitating conditions of technology in intelligence policing in Nairobi City County. Based on the regression output in Table 6, facilitating conditions has a positive and significant effect on intelligence policing and crime investigations in Nairobi City County. The regression coefficient is 0.616 while the p value is .020 which indicate that facilitating conditions has significant effect on intelligence policing based on the .05 significance level. Previous studies have observed that technology should be able to facilitate crime investigations. For instance a study by Kumbuti (2013) on the adoption of technology by the police in Kenya as a strategy towards the detection of crimes in Nairobi City County ascertained that a lot remains to be done in as far as the adoption of technology by the police through facilitation and enhancement of the technical capacities so that they can effectively.

SUMMARY

The study's general objective was to determine the role of technology in intelligence policing in Nairobi City County.

The first objective was aimed at analyzing the effect of performance expectancy of technology in intelligence policing in Nairobi City County. Based on the regression output in performance expectancy has a positive and significant effect on intelligence policing and crime investigations in Nairobi City County. The regression coefficient is 0.807 while the p value is .003 which indicate significance.

The second objective was aimed at analyzing the effect of perceived credibility of technology in intelligence policing in Nairobi City County. Based on the regression output perceived credibility has a positive and significant effect on intelligence policing and crime investigations in Nairobi City County. The regression coefficient is 1.025 while the p value is .000 which indicate significance.

The third objective was aimed at analyzing the effect of effort expectancy of technology in intelligence policing in Nairobi City County. Based on the regression output in Table 6, effort expectancy has a positive and significant effect on intelligence policing and crime investigations in Nairobi City County. The regression coefficient is 0.318 while the p value is .043 which indicate significance.

The fourth objective was aimed at analyzing the effect of facilitating conditions of technology in intelligence policing in Nairobi City County. Based on the regression output in Table 6, facilitating conditions has a positive and significant effect on intelligence policing and crime investigations in Nairobi City County. The regression coefficient is 0.616 while the p value is .020 which indicate significance.

CONCLUSION

From the descriptive statistics, the study concludes that the Criminal Investigation Department takes into consideration the performance expectancy of investigative technologies prior to using them as agreed by (70%) of the respondents. The study also concludes that investigative tools have been able to give the details of the crime patterns and ensures faster response as agreed by 65% of the respondents. From the findings it can be concluded that that there was a reasonable amount of time saved through use of the existing technology in intelligence policing and crime investigations as stated by 81 percent of the respondents. The study concludes that with technology, policing strategies have become efficient hence technology saves a lot of time that investigation process could have taken.

Furthermore, the study concludes that the technology used in intelligence policing had helped in reducing the personnel costs and operational costs incurred during crime investigations as agreed by 72% of the respondents. This implies that technology usage in policing reduces the number of personnel that would have been deployed for an investigation hence reducing personnel costs and by extension the cost of operation. The study also concludes based on the findings that analytical tools used are effective in analyzing the information gathered in the crime scene. Finally, the study concludes that the technologies used in intelligence policing are effective in sharing of and analysis of crime trends. From the findings sixty five percent of the respondents agreed. This implies that computerization of crime mapping along with the use of geographical information systems have a positive correlation with information sharing in crime investigations. Based on the regression output performance expectancy has a positive and significant effect on intelligence policing and crime investigations in Nairobi City County.

The study concludes that perceived credibility of technology is a key consideration by the DCI in intelligence policing and crime investigations as agreed by 53% of respondents. This implies that perceived credibility influences the utilization of technology in crime investigations. In terms of the adequacy of security features used the study concludes that, there are adequate security features in the technology used in intelligence policing and crime investigations as indicated by the majority (51%) of respondents. Based on the findings,

the study also concludes that the technology used is always credible; a continuous assessment of its effectiveness is done continuously as agreed by 69% of the respondents. The study also concludes that there was confidence in technology used by departments in intelligence policing based on reliability, timeliness and applicability.

The study further concludes that to build credibility of technology used, intelligence information collected is subjected to verification by confidential informants. The study also concludes that information collected from the CCTVs is considered credible as 72 percent of the respondents agreed. Regarding the information collected from the social media platforms, the study concludes that information collected from the social media platforms was not considered credible as stated by 54% of the respondents. Finally, the study concludes that perceived credibility of technologies used in intelligence policing has improved crime investigations as indicated by 76 percent of the respondents. Based on the regression output perceived credibility has a positive and significant effect on intelligence policing and crime investigations in Nairobi City County.

The study concludes that the ease of use of technology is considered prior to using it in intelligence policing and crime investigations as stated by 64% of respondents which implies that the ability to make effective decisions is dependent on information which is availed through technology. Secondly, the study concludes that the existing technologies were convenient and easy to use as agreed by 62 percent of the respondents. On the aspect of trainings on technology to increase the ease of use, the study concludes that to ensure the ease of use of existing technologies, the investigators are continuously subjected to trainings. The study also concludes that DCI had invested in the upgrading of its investigative systems and technologies to simplify the investigation processes as stated by 55% of respondents. The study also concludes that DCI had increased the geographical coverage of CCTVs to ensure that the investigative processes are easy and simplified.

Finally, as agreed by 73% of the respondents, the study concludes that the existing technologies had eased the sharing of information and reports hence improving crime investigations. Based on the regression output, effort expectancy has a positive and significant effect on intelligence policing and crime investigations in Nairobi City County.

The study concludes based on the findings that the facilitating conditions of using technology in intelligence policing are considered in crime investigations in Nairobi. The study also concludes that there were adequate crimes mapping systems used in intelligence policing. The study also concludes that there was enough technical infrastructure to facilitate intelligence policing and crime investigations The study also concludes that in addition to the investigators, the department has confidential informants who provide information on potential crimes on regular basis hence there are adequate personnel as indicated by 82 percent of the respondents. Further, the study concludes that there were enough experts on the various technologies used by the department in intelligence policing and investigation of crimes. Experts can work hand in hand with confidential informants to produce credible and reliable intelligence information and reports.

Finally, the study concludes that there is adequate organizational infrastructure to facilitate the use of technology in crime investigations as noted by 51% of the respondents. Further, the study concludes that facilitating technical and organizational infrastructure has helped in improving intelligence policing hence making crime investigations effective. Based on the regression output the study concludes that facilitating conditions has a positive and significant effect on intelligence policing and crime investigations in Nairobi City County.

RECOMMEDATIONS

Based on the findings, the study recommends that there should be adequate security features in the technology used in intelligence policing and crime investigations. Secondly the study recommends that DCI should invest more in the upgrading of its investigative systems and technologies to simplify investigation processes. The study recommends that the investigative departments should improve on trainings on technology to increase

the ease of use to ensure that there is the ease of use of existing technologies by all investigators. The study also recommends that in an effort to fight crime, electronic methods should be widely employed in recording, analyzing, storing, retrieving and applying the information while helping in combating crime.

The study also recommends the improvement of computer crime mapping systems to help in intelligence policing. Computer crime analysis and crime mapping software are highly valuable in data recording hence crime prevention. Finally the study recommends that the investigative agencies should recruit more confidential informants as they are very vital in intelligence policing by way of facilitating information sharing which ensures that intelligence policing is effective. Finally, there is need to have enough technical infrastructures to facilitate intelligence policing and crime investigations.

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