

**DIGITIZATION OF POLICE REPORTING SYSTEMS ON CRIME
DETECTION AND RESPONSE IN KASARANI SUB-COUNTY, NAIROBI-
KENYA.**

LAVENDER ATIENO AGWA

ADM. NO: 110062334

**A Thesis Submitted in Partial Fulfillment of the Requirements for the
Award of the Degree of Master of Science in Governance, Peace and
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School of Humanities and Social Sciences of Africa Nazarene University**

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DECLARATION

I declare that this document and the research is my own original work and has never been presented in any institution for any academic award.

Name: Lavender Atieno Agwa

Admission Number: 110062334

Signature: 

Date: 01/07/2026

This research was conducted under our supervision and is submitted with our approval as university supervisors.

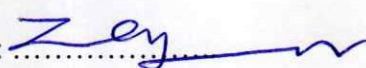
Supervisor Name: DR. EMILY ROCHE

Date: 01/07/2026

University supervisor signature: 

Supervisors Name: DR. CHRIS ZAKAYO NDUNDA

Date: 01/07/2026

University Supervisor Signature: 

DEDICATION

I dedicate this work to my lovely family who have been understanding of the time pressure and constantly encouraging me to complete the study. To my supervisors, I learnt the best from you, and your unwavering sacrifices, patience and belief in my ability to succeed gave me the strength and determination to complete this study.

I also dedicate this work to all law enforcement personnel who are committed to improving crime detection and response through innovation and digital transformation in policing systems.

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ABSTRACT

The proliferation of urbanization and globalization has precipitated significant increases in crime rates in densely populated urban areas. Criminals have also leveraged technology as both a tool and facilitator for perpetrating crime and this necessitate the need for leveraging technology in crime detection and response by law enforcement agencies. Kasarani reported 3,847 crime incidents in 2023 alone. This study examined digitization of police reporting systems on crime detection and response in Kasarani Sub-county, Kenya. Despite the introduction of digital police systems, there exists a gap as to whether the expected improvement outcomes of these systems on crime detection and response are being achieved. The specific objectives were to examine the role of mobile reporting systems on crime detection and response, the impacts of digital police occurrence books on crime detection and response and the and the contribution of real-time surveillance systems on crime detection and response. This study integrated two complimentary theories: The Diffusion of Innovation Theory (Rogers, 2003) and the Routine Activity Theory (Cohen & Felson, 1979). The study employed a mixed-methods approach involving descriptive and cross-sectional research designs where Questionnaires, focus group discussion guides and interview guides were the main instruments of data collection administered both manually and electronically to a target population of 384 respondents and informants: comprising of 40 police officers, 20 crime analysts, 30 DCI officers and 294 Kasarani residents. A total of 308 valid responses were achieved (271 questionnaires at a 79.94% response rate; 23 interviews at 92%; 14 focus group participants at 70%). Reliability was assessed using the test-retest method, while validity was established through content, face, and construct validity from crime experts, policing specialists, and supervisors' opinions. Qualitative data were analysed thematically; quantitative data were analysed descriptively and presented in tables and figures. Findings on digital OBs revealed significantly low awareness (24.7%), against 59.4% who had never heard of them, despite Kasarani hosting Kenya's pilot digital OB project, a deficit attributed to inadequate civic education, uneven infrastructural distribution, and a change-resistant police culture. No station reported exclusive digital OB use, though 70% of respondents rated digital OBs as often or always effective in improving report accuracy and completeness. Real-time surveillance systems, the second objective, showed the highest penetration: 79.9% of respondents had interacted with such systems, 91.9% perceived clear benefits, chiefly faster detection and response and higher resolution rates, and 82% strongly agreed the systems were effective, though deployment remained skewed toward high-profile and traffic incidents, with connectivity, power reliability, and data privacy cited as key constraints. Mobile reporting apps showed moderate adoption: only 50% of respondents had interacted with them, and inadequate training (66.7%), poor connectivity (20%), and difficulty filtering AI-generated or fabricated content (12%) were the leading barriers to their utilization as credible crime-reporting sources. The study contributes evidence-based policy insights for law enforcement agencies and government on building digital institutions and police digital competencies for OB entry practices. It offers pathways for optimizing real-time surveillance deployment to enhance crime detection, response effectiveness, and resource allocation, and serves as a benchmark for future research tracking the evolutionary trajectory of digital policing in Kenya.

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I would like to thank the almighty God for His grace towards the knowledge learnt, the health and persistence that saw me complete this study. My colleagues who helped with questionnaire administration, my employer who gave me the time to dedicate my mind to the study. To my supervisors, Dr. Roche and Dr. Chris Zakayo, for their invaluable guidance, constructive criticisms, encouragement and continuous support throughout the research process. These insights not only helped me in the study but also expanded my knowledge and understanding beyond research conclusion. Special appreciation to all the respondents who were willing to participate in this study. To my dear family and friends, I acknowledge your support throughout this journey.

ABBREVIATIONS/ACRONYMS

AI:	Artificial Intelligence
ANPR:	Automatic Number Plate Recognition
C2C:	Consumer to Consumer
CCTV:	Closed Circuit Television
DCI:	Department of Criminal Investigation
DDMS:	Digital Data Management Systems
DFT:	Digital Frontier Technology
DOI:	Diffusion of Innovation Theory
IC3:	Integrated Command, Control and Communication Center
ICT:	Information and Communication Technology
IOT:	Internet of Things
KNBS:	Kenya National Bureau of Statistics
KPS:	Kenya Police Service
NCRC:	National Crime Research Centre
NPS:	National Police Service
OB:	Occurrence Book
RAT:	Routine Activity Theory
SCPCs:	Sub County Police Command Centre
U.K:	United Kingdom
UNODC:	United Nations Office on Drugs and Crime
USA:	United states of America

OPERATIONALIZATION OF KEY TERMS

Automatic Number Plate Recognition: An automated surveillance software system that typically reads vehicle registration plates, retrieves real-time information about a vehicle and cross references this data with police data base to support traffic enforcement and criminal investigation. In this study, ANPR is operationalized as a digital crime detection tool within the real-time surveillance systems variable.

Crime Analyst: A specialist who applies systematic analytical techniques to collect, assess and synthesize crime data to identify patterns, trends, and vulnerabilities. In this study, they include informants stationed at the IC3 whose professional judgment informs police resource deployments and crime response strategies.

Crime Detection: The process of identifying, discovering, and confirming criminal activity through intelligence gathering, surveillance, community reporting, or forensic analysis. In this study, the indicators include detection timeline, data retrievability, and anonymity of reporting.

Crime Response: Coordinated action by law enforcement to react to and detect criminal activity. It also includes officer deployment to crime incidents, emergency communication, and case resolution processes.

Digital Frontier Technologies (DFTs): Emerging and advanced technologies including artificial intelligence, blockchain forensics, internet of things (IoT), big data analytics, and facial recognition software. They are treated as next generation of digital systems in policing that have been excluded from this study but forms area for future research.

Digital Occurrence Book: Operationally used to imply a centralized digital system that contains information and statistics of crime events as they are reported and booked in police command centres. They ensure database completeness, easy retrieval, and inter-agency coordination.

Digitization of Police Operations: The systemic integration of digital technologies, data-driven systems, and advanced ICT tools into routine law enforcement functions including crime reporting, data management, surveillance, and communication.

Mobile Reporting Applications: Digital platforms and applications through which the public and law enforcement personnel communicate crime-related information through using smartphones, USSD codes, social media networks, hotlines, and other mobile communication channels.

Police officer: Warranted law enforcer who is an employee of the Kenya National Police Service tasked with maintaining law and order, preventing and detection of crime and law enforcement.

Real-time Surveillance Systems: defined in this study as digital systems and tools that monitor activities, behaviour, and information to give a picture of activities as they happen in each environment for purposes of security and crime management. They ensure deterrence, response time improvement, and crime hotspot mapping capabilities.

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CHAPTER ONE

INTRODUCTION

1.1 Introduction

This chapter examines the background of digitized police reporting systems and contextual framework for understanding how they influence detection and response in Kasarani Sub-County. The chapter articulates the significance of the study in addressing the limitations of traditional police reporting systems and establishing the justification and scope of the study. It delineates the research objectives, presents the research questions and identifies both the limitations and delimitations of the study. This introductory chapter lays the foundation for understanding how mobile reporting applications, digital OBs and real time surveillance systems influence crime detection and response efficacy in Kasarani Sub-County.

1.2 Background of Study

As societies undergo accelerated transformation characterized by urbanization, globalization and digital proliferation, criminal enterprises and their methodologies evolve commensurately. Crime poses a significant threat to public peace, order, businesses, and governments across the globe (UNODC, 2021), compelling law enforcement agencies to adopt innovative digital approach to crime detection and response. Andrew (2017) conceptualized digitalized law enforcement context as the realignment of and new investment in technology, innovation and practices to more effectively execute an agency's department's mission, while Afzal and Panagiotopoulos (2024) define it more specifically as the integration of digital technologies, data-driven systems, and advanced communication tools into daily police functions. Within the context of this study, digitalization in crime detection and response encompasses all innovative digital practices-including real-time digital surveillance, digital occurrences book (OBs), and mobile reporting applications-aimed at either detecting criminal activities or facilitating rapid response to them. Both developing and highly developed nations must keep their citizens safe by finding responsive strategies to the perpetually evolving landscape of crime and criminality. (UNODC, 2023)

Nations in Europe, North America and Asia have demonstrated considerable technological sophistication in law enforcement digitalization. In the United States, digital law enforcement can be traced to the 1840's, progressing through successive technological generations to contemporary tools such as artificial intelligence (AI), body worn cameras, and cloud-based evidence management systems (Jacobson 2023). By 2023, 23% of US States had adopted cloud-based digital evidence management systems, yielding a 27% reduction in evidence processing time and a 43% improvement in case resolution rates (Kin 2025). The September 11, 2001 attacks accelerated a strategic shift from reactive to proactive digital crime response, embedding data analytics, facial recognition, surveillance integration, and workforce automation into mainstream policing (The Elite House n.d.; Jacobson, 2023).

In the United Kingdom, the policing Online Reporting Toll (PORT) has streamlined documentation and reduced station congestion, while the European Union has established advantage inter-agency and cross-border digital reporting mechanism that have aided in curbing transnational organized crime and terrorism (Bellanova 2016; Jefferson, 2020). Milojevic (2021) examined the broader role of digital frontier technologies—including the internet of things, blockchain, AI, and autonomous systems—on offending, crime control, and victimization, concluding that while digitalization meaningfully transforms crime management in the twenty-first century, significant uncertainty surrounds its long-term trajectory. Goodison et al (2021) similarly identified a conspicuous absence of cross-platform integration for AI tools across several dimensions of crime management in advanced jurisdictions, indicating that even the most resourced policing system face implementation gaps. Despite promising outcomes, scholars including Mugari and Obioha (2021) contend that limited predictive accuracy, biased datasets, and unresolved privacy regulations tensions continue to constrain the full potential of data-driven policing globally.

African nations present a marked different digitalization landscape, characterized by resources constraints, infrastructural deficits and governance challenges that complicate technology adoption in law enforcement. Although limited empirical studies exist on digitalization of police reporting system in Africa, available evidence suggests that several nations have begun incorporating technology into their law enforcement operations, albeit unevenly. South Africa Olice service, despite confronting resources constraint and bureaucratic inefficiencies, has acknowledged the

positive impact of technology integration on police reporting capabilities (Alberus 2019). Nigeria has leveraged big data analytics for urban policing, demonstrating measurable improvement in crime hotspot identification and resource deployment (Ikuesan et al. 2020). Across the continent, rapid globalization and spillover effects of transnational crime and insurgency (Rufus 2022) has motivated African government to pursue digitalization law enforcement, even as civil instability, corruption and uneven infrastructure continue to impede consistent implementation. The African experience thus reflects a tension between the aspiration adoption of global best practices and the structural realities that limit their operationalization—a tension directly relevant to the Kenyan context.

Kenya's journey toward digitalized police reporting has been gradual and uneven. The integrated communication, command and Control System (IC3) was launched in 2014 as a centralized hub for aggregating real-time surveillance feeds, coordinating crime reports and transmitting intelligence to relevant police jurisdictions (Mwangi & Omboto 2021). Until November 2019, however Kenya relied exclusively on manual, paper-based crime reporting systems. The first digital occurrence book was launched on 22 November 2019. Piloted across 12 Stations nationwide by 2020, yet achieving only 8% nation coverage by (2024). According to Mangi and Kandiri (2024), the integration of digital police reporting systems has yielded measurable benefits including improved inter-agency coordination, evidence based resources allocation, streamlined workflows and enhanced real time crime responses.

Nevertheless, persistent challenges including inconsistent technology adoption across regions, data security concerns, infrastructural limitations and resistance to challenge among officers and the public continue to undermine the realization of full potential (Kariuki & Mutuku 2020). The National Crime Research Centre (NCRC) maintain a national crime database to facilitate the intelligence sharing among law enforcement agencies and stakeholders (N.CRC n.d.), while the National Police Service Commission (NPSC) annual reports provide oversight data on policing performance nationwide (NPSC 2025). Kenya experience thus mirrors the broader African pattern: significant policy commitment to digitization coexisting with profound operation and institutional implementation.

Kasarani Sub-County in Nairobi presents a particularly instructive site for examining these dynamics. As the location of Kenya's first digital OB pilot in 2019, Kasarani occupies a symbolic and operational position at the frontier of the county's police digitalization agenda. Its heterogeneous socio-economic landscape, high population density, and evolving technological environment create a complex environment in which the impact of digital crime reporting tools on detection and response can be meaningfully examined. Significantly, despite being the pilot site for digital OBs, Kasarani recorded 4,234 crime reports in 2019, a figure that had reduced to 3,847 by 2023 (National Police Service 2024), a decline that raises important questions about whether this reduction reflects improved crime deterrence through digitalization, improved efficiency in reporting or other structural factors. It is within this context of global technological advancement, uneven African adoption, Kenya's nascent digitization agenda and Kasarani specific experience as both as pilot site and a high-density urban sub-county that this study situates its examination of how digitization of police reporting systems impacts crime detection and response.

1.3 Statement of the Problem

The government of Kenya invested in digital policing solutions and systems like the launch of digital Occurrence Book (OB) in Kasarani police station in 2019, Integrated Command Control and Communication system, digital forensics and cybercrime Laboratory (Mwangi & Omboto, 2021). Crime rates in Nairobi have increased by 8.38% (KNBS, 2022) between 2021 and 2022, long after the inception of these systems. These systems are expected to revolutionize crime detection and response by enabling real-time data sharing, predictive analytics, and improved surveillance. However, these expected improvements remain largely unrealized with digital OBs achieving only 8% national coverage by 2024 (National Police Service Annual Report, 2024) and no single station in Kasarani adopting a full digital reporting system.

The absence of empirical evidence evaluating the extent to which digitization of police reporting systems is effectively translating into measurable improvements in crime detection and response within Kasarani Sub-County. Without a systemic empirical evaluation, it remains difficult to evaluate the degree to which these systems are being effectively implemented and why a crime surge exists in a sub-county with a comparatively advanced digital policing infrastructure.

This research is crucial for enhancing public safety by offering insights into how integrating digital tools into law enforcement can help in early crime detection and response, optimizing police resources, and shaping future evidence-based policies on digitized reporting systems in other parts of Kenya. By systematically evaluating whether digital police reporting strategies and systems have a significant influence on crime detection, police response times and resolution rates, this study offers empirical evidence in an urban African context addressing a critical knowledge gap. The findings from this study also provide insights for policy formulation by providing empirical evidence on what works and where in matters digital policing thereby ensuring proper resource allocation.

1.4 Objectives of the Study

1.4.1 General Objectives

To examine digitization of police reporting systems on crime detection and response in Kasarani Sub-County, Nairobi City County- Kenya.

1.4.2 Specific Objectives

- i) To investigate the role of Mobile Reporting Applications on crime detection and response in Kasarani Sub-County.
- ii) To determine the impacts of real-time digital surveillance systems on crime detection and response in Kasarani Sub-County.
- iii) To evaluate the effect of digital occurrence books on crime detection and response in Kasarani Sub-County.

1.5 Research Questions

- i) What is the role of mobile reporting Apps on crime detection and response in Kasarani Sub-County?
- ii) What are the impacts of real-time digital surveillance systems on crime detection and response in Kasarani Sub-County?
- iii) What is the effect of digital occurrence books on crime detection and response in Kasarani Sub-County?

1.6 Justifications of the Study

This study is justified for several reasons. First, the study offers a unique opportunity for a comprehensive exploration of gaps on how the use of digital reporting tools in policing have affected the ability of the police to detect crime and respond to

them and actionable insights to policymakers and other stakeholders by providing data-driven recommendations for enhancing the efficiency and effect of digital police reporting operations. Additionally, despite the adoption of digital initiatives in Kenya, crime rates in urban areas such as Kasarani remain relatively high. There is limited empirical evidence on whether digital policing systems have improved crime detection and response. The study provides empirical data to researchers in criminology, digital transformation and public safety who want to comprehensively explore digitization practices in policing, especially in Africa where such research remains limited by providing evidence-based findings that can guide policy formulation and contribute to the development of targeted training and capacity-building initiatives that empower law enforcement personnel to embrace technological innovations effectively thereby foster public trust in the ability of the police to provide safety and security through improved crime detection and response.

1.7 Significance of the Study

The study offers substantial benefits to the Kenya Police Service and administrators seeking to enhance operational efficiency, crime prevention capabilities and improved detection and response time through a better understanding of how digital records and real-time surveillance can prevent criminal activities or enhance apprehension. The significance of the study lies in the capacity of the findings to inform policy decisions in designing solutions that exploit the benefits of digitization while mitigating its challenges, budgeting for secure and reliable digital solutions in other counties and in designing capacity-building initiatives for consumers of such technology. Policy makers, law enforcement agencies and stakeholders will derive valuable insights into improving security measures and optimal ways of achieving comprehensive digitization of policing in Kenya.

Developers of technology and security service providers also derive benefits by understanding the specific needs of law enforcers and tailor-making digital tools to match those needs. The findings from this study also offer insights on how digital information is consumed by the police thus fostering transparency by the public and improving public participation in policing.

1.8 Scope of the Study

The primary focus of the study is on digital reporting strategies and systems employed by the KPS in law enforcement, specifically mobile reporting applications, digital OBs and real-time surveillance systems and how they influence crime detection and response along with the implementation challenges and possible strategies for improvement. The study excluded other Sub-Counties because Kasarani Sub-County is a metropolitan area with diverse socio-economic dynamics and a significant crime rate with significant implementations of digital police systems, offering rich practical data for analysis. It is also where the benchmark of digital OB in Kenya was carried out. Time constraints also limited the feasibility of covering all regions in Kenya. The study targeted police officers, detectives from the DCI, residents of Kasarani and crime analysts from the IC3. This study was conducted between August 2025 to December 2025 within Kasarani and IC3.

1.9 Limitations of the Study

The study encountered several limitations during the research process. First, gaining access to certain police databases and operational systems was challenging as they are subject to privacy and operational security restrictions in addition to the confidential nature of police operations. This was addressed by obtaining authorization and assuring the respondents that the researcher had maintained confidentiality of information and that the study was academic-oriented. Second, geographically limiting the study to Kasarani Sub-County and the Integrated Control, Communication and Command Centre may limit the generalizability of the results to other regions, especially rural areas where digitization operations might be affected by infrastructure challenges. Third, some respondents particularly police officers were reluctant to provide detailed information due to organizational restrictions or concerns about exposing the weaknesses within digital policing systems. The researcher minimized this limitation by assuring participants of anonymity and voluntary participation.

Fourth, the study is susceptible to social bias particularly among police officer respondents. Given the institutional and hierarchical culture of law enforcement organizations, officers may have responded in ways that reflect favorably on their station's adoption of digital tools or that align with official policy narratives, rather than accurately representing operational realities on the ground. While anonymity assurances were provided to reduce this effect, social desirability bias cannot be

eliminated in self-report research involving institutional respondents. The use of cross-sectional research design in predicting long term effects of digital police operations and causal relationships was not easy to capture in the study due to inconsistencies and inaccuracies of crime data especially since there was scarcity of empirical data regarding this area of study in Kenya, available data was of a population census conducted in 2019, limiting the generalizability for the study in a rapidly growing urban area. This necessitated the review of complimentary international literature and limited local studies to support the analytical framework. Finally, residents and youth participants are subject to self-selection bias that may have introduced an optimistic bias into the findings on public awareness and perceived effectiveness of digital policing tools. The use of trained research assistants and multiple community entry points was employed to reduce this bias.

1.10 Delimitations of the Study

The study was geographically confined to Kasarani Sub-County and the IC3 and not any other region of Kenya not because digitization is absent elsewhere but because no other sub-county simultaneously hosts all three digital reporting mechanisms examined, making cross sub-county comparison methodologically inappropriate for the specific objectives pursued. Kasarani has a unique socio-economic nature and ongoing police digitization activities making it also suitable for the study. The analysis time frame being the years from when initial digital police reporting activities were introduced to when data collection concluded in December 2025. It excluded emerging digital tools and Digital Frontier Technologies as this formed part of the knowledge gaps. It also focused only on stakeholders who interact primarily with crime detection and response activities without studying other criminal justice agents like judiciary and corrections as they are not directly relevant to this study. The specific aspects affected by digitization that the study was interested in included crime detection and response.

1.11 Assumptions of the study

The study assumed that all respondents would provide honest, reliable, truthful and accurate answers regarding digitized police reporting systems and crime detection and response. The second assumption was that the respondents had sufficient understanding and experience with digitized police reporting systems and that these systems were present and operational within Kasarani sub-county within the period of data collection. It was also assumed that the views and experiences of the sample size

selected represented those of the broader population of the study area and that that external factors such as fear and organizational restrictions did not affect or influence the responses provided by the participants.

1.12 Theoretical Framework

The study integrated two theories to better understand the interaction between digitization of police reporting systems and crime detection and response: Diffusion of Innovation Theory (DOI) by Everett Rogers (1962) and Routine Activity Theory (RAT) by Marcus Felson and Lawrence Cohen (1979). The two theories were considered appropriate because collectively they explain both adoption of digital technologies within police institutions and the role of technology in crime detection and response.

The two theories lay a foundation for understanding how digital reporting systems influence crime detection and response outcomes. DOI explains how different organizations including the police force accept and adopt technology and the factors that influence such adoption (Rogers, Singhal & Quinlan, 2014). It focuses on digital reporting systems and tools including digital OBs and Mobile Reporting Apps and how they influence crime detection and response outcomes, their compatibility with other existing systems, ease of access and awareness. DOI is focused on adoption process and does not focus on adoption outcomes neither does it focus extensively on digital surveillance technology, which is an objective of this study, prompting the introduction of a second theory, RAT and together they provide a holistic framework for this study.

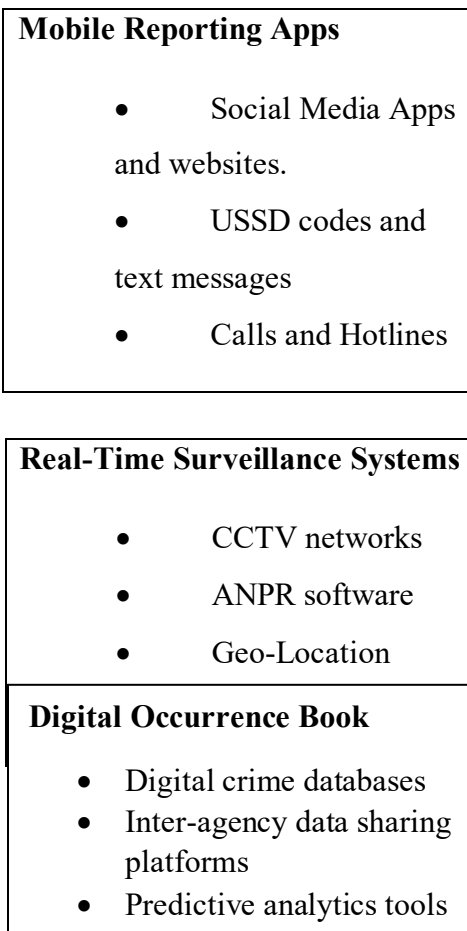
RAT is based on the core ideas of what causes crime; the convergence of three elements: a suitable target, a motivated offender and lack of a capable guardian (Cohen & Felson, 2010). The theory helps to explain the expected outcomes of digital systems as capable guardians. It argues that digital surveillance systems act as capable guardians in detection and prevention of crime and it also offers faster response through police deployment as crimes are detected in real time, enhanced monitoring and intelligence gathering.

The integration of these two theoretical frameworks enables a holistic examination of the aspect of technological adoption and its impacts and use in practical crime detection and prevention outcomes alongside organizational readiness for such innovation. DOI explains the adoption process and RAT explains the impacts of these technologies on actual crime events.

1.13 Conceptual Framework

Figure 1.1: Conceptual Framework

Independent Variables



Dependent Variables

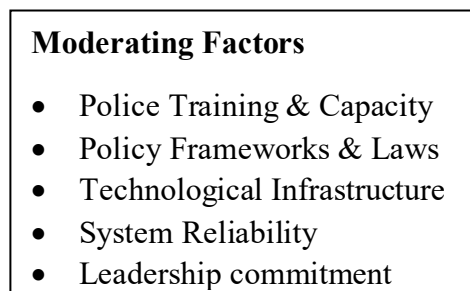
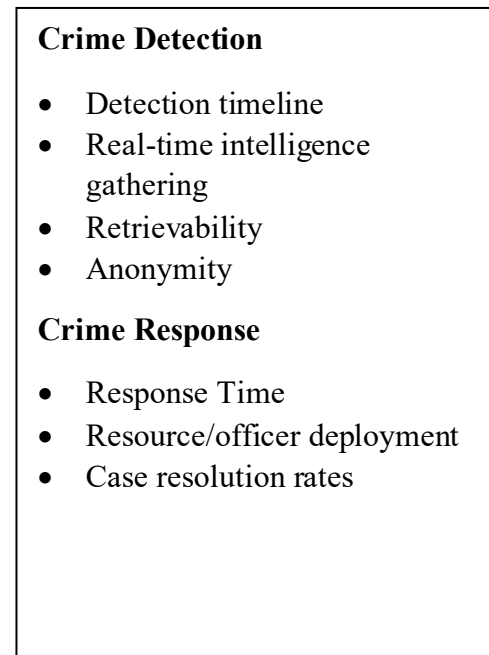


Figure 1.1: Influence of Police Digitization operations on crime Detection and Response

Source: (Researcher, 2025)

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The overall relationship between digitization of police reporting systems and crime detection and response in Kasarani Sub-County is an area that has not been exclusively researched on, a gap that this research purposes to fill. This chapter covered a review of two theories and empirical studies relevant to the study. It began with the theoretical review of diffusion of innovation theory by Everett Rogers (1962) who argued that new ideas, technologies, or practices spread through a population over time. The second theory discussed was the routine activity theory by Lawrence Cohen and Marcus Felson (1979) who argued that three factors must exist for a crime to take place: a suitable target, motivated offender and an absence of a capable guardian. The next section discussed is the analysis of past studies and research that have covered aspects of digital policing. Findings indicated that most nations have made great steps in integration of digitization in police reporting with some promising results expected. The chapter also pointed out knowledge gaps from an analysis of theories and empirical literature, which the study will aim to address. A summary of both literature is also given in this chapter.

2.2 Theoretical Review

Many theorists have tried to explain the concept of various aspects in digital police reporting. Since this study was focused on investigating digitization of police reporting systems on crime detection and response, an integration of two theories proved effective in doing so; diffusion of innovation theory and the routine activity theory.

2.2.1 Diffusion of Innovation Theory

The diffusion of innovations (DOI) theory was first proposed by Everett Rogers in 1962 because of agricultural research that began in 1928 and was later developed by Vankatesh et al (2003) who added factors such as performance expectancy, effort expectancy and social influence. Rogers, Singhal and Quinlan (2014) define diffusion as ‘the process by which an innovation is communicated through certain channels over time among the members of a social system. Innovation on the other hand, is ‘an idea, object or practice perceived as new by an individual or other unit of adoption (García-Avilés, 2020).’ DOI postulates that communication has a strong effect on social change

within a community (Rogers, Singhal & Quinlan, 2014) The theory consisted of components like innovation, communication, social system, time and adopters.

This theory argued that there exist some factors that influence how or whether an organization adopts a new technology. First, to some degree to which the innovation is perceived to be better than existing ones. Second, how well the innovation aligns with an organization's values, needs and practices. Third, the complexity of using innovation. Fourth, an organization's ability to experiment with the innovation on a limited basis(trialability) and finally the benefits of the innovation as seen by others (García-Avilés, 2020).

DOI was used to explain how new technology has been perceived by the public and analysts and whether the integration of such technology like real-time surveillance operations, digital OBs and the use of Mobile phones and Apps in reporting crime have been better at detecting and responding to crime than manual reporting methods. The police force of Kenya is organized and just like the theory suggested, new technology must go through channels of adoption. Increased efficiency in crime reporting and success in crime reduction were some of the driving forces for adoption of digital reporting systems in policing (Lum et al, 2019). The theory also noted that existing social systems and willingness to accept change by the police and the public were crucial for successful innovation (Rogers, 2003).

Several studies and scholars who were interested in understanding how innovation spread across an organization or system rooted for this theory. Hains and Hains (2020) cited the ability of the theory to be applied in broad contexts when discussing social innovation. DOI theory is also applicable in most social domains; agricultural, education, legal, healthcare and even political (Lyytinen & Damsgaard, 2021). Additionally, Rogers' theory offers some insights into the actionable aspects of digitization including its compatibility to an organization's framework, relative advantage, trialability and observability.

However, numerous critiques of the theory were found. Rogers, Singhal and Quinlan (2014) criticized the way other scholars had oversimplified the theory to reflect the successes of innovation adoption without studying implementation failures, radical changes in innovation, consequences of innovation and non-adoption. They also highlighted how the failure of an innovation is often attributed to an individual rather

than the whole system (individual-blamed bias). The theory also failed to recognize that other factors, beyond an individual or organization, like politics and culture affect the adoption of innovation (Lyytinen & Damsgaard, 2021).

This theory, despite the critiques, provided valuable insights into how technology can be applied across different policing operations and departments, including in reporting crime and the adoption process. It was used to point out how addressing implementation challenges in technology integration in policing can help in better crime detection and response outcomes within Kasarani Sub-County and beyond. Policymakers and governments, however, must first be able to demonstrate how new technology will be beneficial and practical to crime detection and response through pilot projects and by effectively communicating the changes.

However, while the Diffusion of Innovation (DOI) Theory explains the adoption and spread of digital police reporting technologies especially mobile reporting apps and digital occurrence books that are greatly influenced by acceptability, it does not sufficiently address real-time digital surveillance systems as an objective in crime response and detection nor the outcomes of implementing these digital tool of policing. To bridge this gap, Routine Activity Theory (RAT) is included in this study, as it explains how crime occurs when a motivated offender, a suitable target, and the absence of capable guardianship converge and how the presence of digital tools aid in reducing the convergence of these factors. Digital policing, particularly real-time surveillance, predictive analytics, and data-driven policing, functions as a capable guardian, thereby reducing crime opportunities. By integrating both DOI and RAT, this study provides a comprehensive framework that not only evaluates the adoption and effectiveness of digital tools but also analyzes their direct influence on crime prevention and law enforcement strategies

2.2.2 Routine Activity Theory

The Routine activity theory (RAT) was first introduced in 1979 by Lawrence Cohen and Marcus Felson (Cohen & Felson, 2010) to understand crime rate trends and cycles. The theory states that, for a crime to occur, three elements must be present at the same time and space; a motivated offender, a suitable target and the absence of a capable guardian (Jubaer & Hassan, 2021), and as such, crime rates can reduce if there is enhanced guardianship through real-time digital surveillance operations like CCTVs.

According to this theory, Crime is an event that is dependent on opportunity availability (Cohen & Felson, 2010).

Some criminologists argued that a higher crime rate in urban areas is because of the dispersion of activities away from households and families that increase opportunities for crime (Cohen & Felson, 2010). This theory focused on crime prevention through removal of opportunities and increased guardianship. Linking the absence of guardians to increased crimes show the practical validity of RAT, as well as its ability to be used in environmental designing in urban areas like Kasarani, technological interventions and policing activities (Cohen & Felson, 2018).

The theory, however, was much focused on the absence of guardianship and a motivated rational offender and failed to appreciate external motivations to commit crime or even what motivates the offenders (Wickert, 2019) and how technology can be used to address such crimes. Victims of crime were also seen as being responsible for the crimes committed against them by failing to be their own guardians, according to Wickert (2019).

RAT was helpful in explaining how digital reporting instruments like real-time surveillance systems, predictive analytics, and automated policing technologies act as capable guardians that minimize criminal opportunities while at the same time giving actual crime reports. In a densely populated and high crime area such as Kasarani, the use of digital policing approaches can bring about surveillance and fast response to incidences and discourage criminal activities. These technologies, however, are only as efficient as monitoring, compatibility with other policing technologies, and the use by law enforcement agencies.

Nonetheless, it can be argued that RAT gives a useful insight into the role of policing technologies of reporting, especially surveillance systems, in preventing and detecting crime. Although it does not offer a detailed analysis of the institutional and structural factors related to the implementation of technology in law enforcement agencies, when integrated with DOI theory, they provide an understanding of crime detection and response through digital reporting tools of policing.

2.3 Empirical Review

2.3.1 The Role of Mobile Reporting Applications on Crime detection and response

Mobile Reporting Systems and Apps are a significant aspect of contemporary police operations since they offer better communication between the police and the public and even police to police, anonymity, faster suspect identification, and better organizational flow within the police force (Mwangi & Omboto, 2021; Simlai & Sandbrook, 2021). They have been implemented in various parts of the world, and their efficiency differs with technological advancement, trust in the system and capacity of the police force. Thus, although there is hope for using mobile phones in crime reporting, issues like possible bias, low utilization in some areas, disinformation and gaps in availability are still noted.

In many developed countries around the world, the use of mobile reporting apps in police operations has been observed (Simlai & Sandbrook, 2021), like in the United States, Real-Time Crime Centers (RTCCs) have changed the ways in which police respond to incidents. Citizens can call or text and the police can track their locations by using technological features like closed-circuit television, geographical information system, and predictive analytics to track crime as it happens (Simlai & Sandbrook, 2021). These systems have helped the police to give alerts, mobilize their personnel, and act quickly on the field, hence reducing the rate of crimes in sensitive areas. In the United Kingdom, PORT (Police Online Reporting Tool) is a digital reporting website that enables citizens to report cases of crimes that are not emergencies, thus making the process of documentation easier and minimizing crowding in the police stations (Jefferson, 2020). However, some scholars have expressed concerns about the possibility of these systems being abused, especially in the developed countries where reporting tools may lead to racial bias and over policed of the minority groups, perpetuating the prejudice in handling crimes (Jefferson, 2020).

In the African region, the reporting of crime digitally has started receiving traction in African countries albeit at a slower pace and with a difference in how it is practiced. Currently, Nigeria, which is one of the African countries that has embraced the use of technology across the various facets of its society, has not adopted digital reporting systems in its law enforcement agencies. Despite digital solutions having been developed, the infrastructure is still lacking with little government investment and people's distrust in the police discouraging usage (Nte *et al.*, 2020). In Ghana, there is

low confidence in the ability of security agencies to respond to public reports through the online and mobile crime reporting platforms (Amagnya, 2024). South Africa, by contrast, has advanced in the digital platform in crime reporting through My SAPS-App, which is an application that allows people to report crimes anonymously through their phones and follow the progression of the case at the comfort of their homes (Moyo & Sibanda, 2023). However, some scholars have posited that while these tools have enhanced reporting efficiency, challenges like under reporting because of fear of reprisals and imbalance access and usage of internet among different groups in the society persist (Moyo & Sibanda, 2023).

In East Africa, Kenya has taken the lead in digital crime reporting through its Integrated Command, Control, and Communication Center (IC3) where all the crimes reported are compiled into a database and real time communication between the police and the public is facilitated (Mwangi & Omboto, 2021). Nhan (2024) also noted a similar Real Time Crime Centers that act as a space to monitor, review and process real-time inputs from external sources. It has also been made clear that the use of online complaint websites, social media, police hotlines and different network providers, particularly in has significantly enhanced crime detection and response through the implementation of IC3 whereby the police officers are deployed to the most affected areas (Mwangi & Omboto, 2021). The police can detect the likelihood of crime before it happens from different social media posts and can analyze crime hotspots especially for public order crimes. Also, the NCRC developed a mobile application for citizens to report crime cases to improve real-time crime information (Mwangi & Omboto, 2021).

However, there are challenges in the consistent use of mobile reporting channels and apps; unequal access to the internet, safety of reporters, information adulteration and disinformation and variation in computer literacy, which has limited the effectiveness of the implementation of mobile phones as reporting tools and as reliable sources of crime information (*Gichohi et al., 2023*). Barasa and Muhindi (2024) noted that despite the enhancement of digital mechanisms in crime detection, reaction, and management, their effectiveness has been reduced by regional inconsistency. Furthermore, there is still a fear that the police forces use the information by acting only in specific cases, extrajudicial killings as a result of social media activism, unavailable websites and the fact that local service providers have allegiance to the government and

can freely give user information upon request thereby negating the whole aspect of anonymity of respondents (Barasa and Muhindi, 2024).

Although mobile reporting apps present a range of benefits over conventional reporting procedures such as anonymity, swifter reporting, and tracking, their full potential in crime detection and response is still untapped. These systems are not risk-free; they harbor sensitive information creating a hacking vulnerability, can be misused by power-hungry authorities, and are ineffective for communities with no internet connection. There is also still a lack of studies that address the effectiveness of mobile reporting systems on crime response and detection in the long run, especially in developing countries where the level of technological development is comparatively low. Further research is needed to identify ways of improving mobile reporting technologies and making them more effective with a focus on guaranteeing public safety and anonymity while at the same time minimizing the key ethical issues of surveillance and data privacy.

2.3.2 Impact of Real-Time Digital Surveillance Systems and Reports on Crime Detection and Response

Digital surveillance technology, according to Simlai and Sandbrook (2021), can be defined as the use of technological systems that are employed to monitor or gather real-time information regarding people's activities for security and managerial measures. They include CCTV cameras, biometric recognition systems, AI surveillance, Automatic Number Plate Recognition (ANPR) systems, geo-location tracking and digital forensics. Real-time Surveillance technology has found its way into people's everyday existence through governments and corporations to improve security, decision making and effectiveness of crime fighting measures (Simlai & Sandbrook, 2021). Surveillance tools place in the hands of authority real-time information, high-speed data processing, and complex visualization capabilities, which are crucial in today's crime detection and response (Brayne, 2021). However, some scholars argue that digital surveillance improves crime detection and response, but they should be used after thorough scrutiny because of their ethical issues, misuse, and infringement on the right to privacy (Simlai & Sandbrook, 2021).

Real-time digital surveillance has had different impacts on crime detection and response. In democratic states that have stringent laws protecting privacy of personal

data, real-time digital surveillance is mostly employed for prevention of crime and enhancement of efficiency in the policing process. CCTV implementation in America and the United Kingdom has been evidenced to have caused relatively small but positive impacts on crime reduction especially in areas with high crime rates (*Thomas et al., 2022*). In Texas, for example, studies showed that crimes that happened in the vicinity of surveillance cameras were solved faster especially in cases of theft and this shows how surveillance enhances police investigation and response capabilities (*Jung & Wheeler, 2023*). In China, the application of real-time digital surveillance in crime fighting has been taken to another level using artificial intelligence systems of facial recognition that can track individuals in real-time (*Brayne, 2021*). Although such systems are efficient in crime detection, they have social and ethical issues concerning the surveillance of the public and human rights violations (*Xu, 2021*).

Additionally, the efficiency of such systems does not depend only on their existence but on their compatibility with other technologies like facial recognition with the help of artificial intelligence, ANPR, and predictive analytics (*Khan et al., 2020*). In Bangladesh, *Khan et al. (2020)* showed that while the use of real-time surveillance reduced crime in areas that were under surveillance, it shifted crime to other areas that were not under surveillance.

In more authoritarian states, real-time digital surveillance use raises the question about human rights and freedoms violations. In his study of China, *Xu (2021)* discovered that the surveillance led to an increase in public security expenditure and arrests, but the citizens' safety was not improved because the targets were primarily political activists and anti-government protesters. Similar concerns have also been expressed in Africa where governments of Egypt, Senegal, South Africa, Nigeria and Sudan have been cited to have used real-time surveillance technology to monitor the political opponents more than detecting or responding to crime (*Roberts et al., 2021*). On the other hand, in rural areas within Southern Africa, the use of real-time digital surveillance has had more positive effects as it has been used as the supplement to the traditional approach in crime detection (*Aransiola & Ceccato, 2020*). This variability in the application of digital surveillance provides understanding into two aspects of digital surveillance, that is, as an instrument in real-time monitoring and reporting of crime events, though it can be misused for political and social management.

In the recent years, the use of real-time digital surveillance as a measure of reporting crime has been widely adopted in Kenya especially in urban centers. The Integrated Command, Control, and Communication Centre based in Nairobi permits the police to monitor incidences in real-time hence increasing the effectiveness of the police force in allocating its resources and responding to the crimes (Mwangi & Omboto, 2021). The system incorporates a video management system, a video wall management system as well as a critical incident management suite which offers an independent source of video evidence that assists police investigations and courts (Mwangi & Omboto, 2021). According to Kirui (2024), CCTV surveillance in Kasarani has helped to reduce crime, enhance road safety through ANPR where non-compliant motorists are tracked down and apprehended, and cut down on costs. This is because the installation of surveillance cameras has also elicited a psychological deterrent, where perpetrators are likely to be apprehended because of the cameras' existence (Kirui, 2024). However, cost of installation and maintenance has been a hindering factor in the full deployment of surveillance systems in the area. Relying on reports from the IC3 also limit swiftness of response.

However, the use of GIS in crime mapping goes hand in hand with real-time digital surveillance to improve on effectiveness (Owino, 2021). Research shows that there has been enhanced reporting systems that incorporate geospatial technology that have helped in identification, mapping of crime prone areas and proper provision of security in Kasarani (*Gichohi et al., 2023*). Through mapping of crime patterns, police can easily be able to predict where crime is likely to happen then proceed to post officers there hence reducing crime in society. The police are also able to locate individuals and suspects by tracking their locations and making apprehensions. However, there are still challenges to the application of the tools to make real-time digital surveillance more efficient across the different regions. These include issues to do with inconsistencies in application, privacy issues and the possibility of misusing digital surveillance for unethical purposes in crime management.

Nonetheless, there is a vast potential of real-time digital surveillance in policing despite it not being fully harnessed yet because of such limitations as financial, ethical, and legal. While conventional crime detection and response entail a reactive approach, digital surveillance entails a proactive approach to crime prevention as well as responding to them in real-time basis and with sound evidence. Nevertheless, some

concerns arise as to how it will stay effective in the long-term, especially in areas that are yet to adopt Information Technology or even electricity. More studies must be conducted to understand how advancement in real-time surveillance technology can be utilized to enhance security without infringing on the rights of the citizens.

2.3.3 Influence of Digital Occurrence Books on Crime Detection and Response

DDMS stands for digital data management systems; they are the procedures and technologies involved in the collection, storage, processing, and analysis of data for various fields including police and crime administration (*Atlam, et al., 2024*). Digital OBs are examples and part of DDMS. They are important in the modern police force as they facilitate proper recording of information, real-time access to that information, and integration between different law enforcement agencies. Through capturing crime records, evidence logs and investigative case files, digital OBs minimize on errors, loss of data and increase on the transparency of police officers. Advanced technologies like block chain forensics, cloud computing, and AI-assisted analytics have been used by developed nations to enhance the credibility of digital evidence, avoid any meddling, and fast-track the certification of criminal records (*Atlam et al., 2024*). The enormous capacity to store and analyse crime data has aided crime detection and prevention and therefore makes digital OBs a vital asset to law enforcement in the modern world.

Research proves that the implementation of digital OB has a positive impact on crime detection as it addresses issues of effectiveness, measurability, loss of records, traceability, and the ability to predict crime. In Ukraine, Mynenko and Liulov's (2022) studies revealed that digitization of government records including crime-related messages, photos, and case files enhanced transparency in public authority and enhanced public confidence. This means that digital data systems are not only helpful in solving crimes but also improving the collaboration between the police and the society. In this regard, developed nations in North America and Europe have incorporated mobile data terminals and cloud databases in field operations. For example, North American patrol officers use these technologies to access real-time information which has been helpful in controlling crimes like car theft (*Nhan, 2024*).

In the EU, for instance, the Prüm framework enhances cooperation in policing by linking facial recognition databases and records of criminals across the member countries to arrest offenders and combat organized crime and terrorism (*Bellanova,*

2016; Binjummah, 2021). Likewise, the United Kingdom's National Data Analytics Solution (NDAS) compiles crime incident reports, suspect descriptions, and custody information to enhance predictive policing and identify crime trends, thus enabling the authorities to deploy forces based on crime maps and history (*Lee et al., 2024*). These examples show how the management of digital data contributes to crime detection and response through the ease of access to information and cooperation.

However, widespread use of digital data storage and management in policing operations around the world has not been followed by extensive empirical research, especially in Africa, in which some of the few studies are from South Africa and Nigeria only. South African police forces have adopted electronic Investigation Case Docket Management System (ICDMS) to ease access to records, minimize error and strengthen relations between police and judicial organs (Legodi & Dikotla, 2022). Besides, the use of Geographic Information System (GIS) has also been incorporated in policing to identify areas with high crime rates and direct the policing efforts towards these areas to prevent crime (Breetzke, 2020). In Nigeria, DDMS supports CCTV surveillance for intelligence and faster investigation purposes which enhances the performance of the security forces (*Nte et al., 2020*). However, in many other African nations, manual data management prevails leading to loss of data, data corruption, and inefficiencies in cases that are being managed.

Crime record management in Kenya has received progressive improvements in adopting the use of digital records. This was achieved on 22nd November 2019 when the country launched its first digital OB at Kasarani Police Station in Nairobi (Standard Media). The implementation of the digital OBs has resolved problems associated with loss, misplacement, and damage of manual records where crime reports and case files are secure (Standard Media). Digital OBs also improve information accessibility through case history which enhances investigations by eliminating delays and allowing the clearance of many cases at once (Kirui, 2024). Also, these systems enhance accountability and traceability because records created are electronic and user logins leave a record thereby minimizing chances of manipulation and embezzlement (Maina, 2020). Digital OB has been especially helpful in addressing serious crimes like terrorism and organized crime since they demand perfect coordination between police and emergency services and intelligence departments, something that electronic filing offer (Mwangi & Omboto, 2021).

In Kasarani, the use of digital data system as a crime reporting tool crime has enhanced the response time and proper distribution of resources although it has called for a continuous investment in technology infrastructure and personnel training. Commonly, the benefits of Digital OB in crime detection and response are clear; however, there are some limitations in its research and application. One of the main problems is that these systems are implemented randomly and unevenly, especially in the countries of the third world where Internet connection is not always stable (Kirui, 2024). Although research promotes the benefits of digitized records to enhance the transparency and effectiveness of the police force, there is little published evidence indicating their impact on crime trends. However, issues of data privacy, C2C, and abuse of digital records by police force also deserve research. As for the further research, one could consider the issues of scalability of digital data management, to make sure that both urban and rural settings would find the proposed technologies useful and citizens' rights protected. It is important to address these gaps to enhance the relevance of digital OB in the contemporary crime management and make this tool a justice enabler instead of a tool of control.

2.4 Summary of Literature Review

Developing nations in Africa like Kenya have come far and yet still have a long way to go in terms of digital reporting systems. DOI theory helped in explaining how innovation spread across and fit into different sectors of a system, how a pilot study is necessary to ensure feasibility of technology to existing social challenges and how individuals tend to adapt to such technological changes within an organization. This theory provided foundational knowledge of how technology is adopted by different organizations including the police and predicting adoption rates, although it fails to discuss how these technologies, especially real-time surveillance systems, can be tailor-made to fit given situations, prompting the use of an additional theory. RAT on the other hand explains what precipitates a crime and the need for tailor-making technology to fit a given situation or need. This theory was necessary to understand what causes crime and how digital reporting technology can be tailored into situational crime response and detection interventions, thereby addressing the shortcomings of the first theory.

Most nations globally have adopted digital reporting solutions in detecting and responding to crimes with studies showing promising positive impacts compared to

traditional policing methods. Digital police reporting systems are a new concept in developing nations of Africa, Kenya included. However, existing limited studies suggested that digitizing police reporting systems have substantial potential in enhancing crime detection and response across different settings including better data-driven decision-making (Barasa & Muhindi, 2024; Gichohi et al., 2023), improved monitoring and response capabilities (Kirui, 2024), and increased efficiency in police performance (Maina, 2020; Mangi & Kandiri, 2024). Insufficient training, limited infrastructure, and privacy concerns, however, are still prevalent challenges to full technology adoption and implementation in law enforcement across most nations.

2.5 Knowledge gap

Kenya police have integrated some digital reporting aspects into crime detection and response. Much focus is on how western countries have ongoing implementation of individual digital technologies like CCTVs, facial recognition and geospatial systems and policy news but failed to discuss how these systems integrate with each other across the whole spectrum of crime management aspects like reporting, response, case management, intelligence and resource allocation. While the operational effectiveness of the different technological systems is apparent, their long-term sustainability or adaptability in the face of evolving crime trends and advancing technologies is an area that is yet to be comprehensively investigated.

This study will go beyond policy announcements and conduct a contextual and methodologically advanced assessment of digitization of police reporting systems and crime detection and response outcomes as they are on the ground in a developing country's urban setting, Kasarani Sub-County, where digital systems differ from the commonly studied western countries. A focus will be selectively on operational outcomes rather than general policy narratives while targeting specific operational units, their effectiveness while also factoring in challenges to implementation and how the public perceive and interact with such technologies.

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

This chapter covers research design, research site and rationale, target population, sampling techniques and data collection and analysis tools that were used to achieve the research objectives. The chapter also identified ethical issues that would have compromised the study and identified measures to be taken by the researcher in addressing those ethical issues.

3.2 Research Design

This study employed a mixed-method descriptive research design with a cross-sectional approach to investigate the effects of digitization of police reporting systems on crime detection and response in Kasarani Sub-County. This research design was appropriate as it enabled the researcher to describe the current state of police reporting systems used in crime detection and response including patterns and levels in digital reporting, explains lived experiences and institutional realities and integrates perceptions of digital policing with current policies and theory

3.3 Research Site and Rationale

This study was conducted in Kasarani Sub-County, Kenya, a metropolitan area with the following demographic information: an estimated population of 780,656 residents covering an area of 152.5km² representing 5,112 persons per km², comprising 67% urban and 33% peri-urban, youth population (18-35 years) of 58.3%, literacy rate 87.4%, smartphone ownership 64.2% and 72.1% internet access (KNBS, 2019) and which is a hub for pilot projects of digital police reporting systems, including digital crime OBs, real-time digital surveillance technologies and mobile reporting Apps. These technologies were key in assessing the effectiveness, adoption challenges, and overall impact of digital police reporting systems on crime detection and response.

The rationale for selecting Kasarani Sub-County was based on several factors. First, Kasarani is a metropolitan area with a high population density and diverse socio-economic dynamics, making it a prime location for studying digitization of police reporting systems on crime detection and response. Second, it experiences a significant crime rate offering a rich data set for analysis. Third, it is near to critical police

institutions, including the Integrated Command, Control, and Communication Center (IC3), which plays a major role in digital policing.

The presence of 8 police stations (6 out of 8 having IC3 fiber connectivity), multiple administrative offices, and 156 digital-IC3-monitored surveillance cameras, 247 public CCTVs and 91 stand-alone cameras (KNBS, 2019) enhance the feasibility of data collection as there exists enough digital infrastructure for this study. Finally, as one of Nairobi's political and economic hubs, findings from this study provide valuable benchmark insights that can be used to guide the adoption of digital policing strategies in other Sub counties across Nairobi and the country at large.

3.4 Target Population

This study targeted individuals and institutions that were directly involved in crime reporting or crime detection and response operations in Kasarani or the IC3, specifically, DCI officers who use digital tools in crime detection, Police officers, the public and crime analysts (who included both officers and civilians in the technical department). Individuals who fell outside the above categories or those who were unwilling to participate were excluded from the study. Local authorities like nyumba Kumi were exempted due to the low social cohesion in an urban setting like Kasarani. Police agencies like IPOA were exempted as they interacted with crime at a different dimension, different from what the study intended to cover.

Table 3.1: Target Population

Category	Description
Police Officers	Included dispatch operators, response teams and field officers (implementers).
Crime Analysts	personnel involved in crime data management and system administration at the IC3 (technical experts)
Department of Criminal Investigation	Officers who rely on digital tools for crime detection and investigation (specialized investigators).

Adult residents	People residing in Kasarani area who were the consumers of digital reporting tools (system users).
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Source: (Author)

3.5 Study Sample

A study sample is a part of the target population that is selected to be included in the research (*Hossan et al., 2023*). The analysis of an entire population is not always feasible because of issues to do with time, cost and access to the population or target group, and this is why sampling was used as a method of choosing a subset of the population that is representative of the whole population (Obwatho, 2014).

3.5.1 Sampling Procedure

This study applied both stratified random sampling techniques to ensure adequate and meaningful representation of key stakeholder groups. Sampling was focused on police officers, CID officers and crime analysts who use digital reporting systems in policing operations and residents who were the main consumers of such systems and outcomes. The population was divided into strata to select respondents with practical and operational knowledge in different tools of digital reporting systems in police operations.

3.5.2 Sample Size

Available data shows that as of 2019, there were an estimated 780,656 residents of Kasarani Sub County (KNBS). Cochran's formula was used because of the large number of residents and unknown number of the other stakeholders in the population to determine the sample size from a population of the four groups at a confidence level of 95% (1.96 z-score) and an error margin of 5% (Chaokromthong & Sintao, 2021).

Formula: $n_0 = \frac{Z^2 \cdot p \cdot (1-p)}{e^2}$

n_0 = sample size

Z = Z-score (1.96 for a 95% confidence level)

p = estimated proportion of the population (0.5)

e = Margin of error (0.05)

$$n_o = \frac{(1.96)^2 \times 0.5 \times (1-0.5)}{0.05^2}$$

$$n_o = \frac{3.8416 \times 0.5 \times 0.5}{0.0025}$$

$$n_o = \frac{0.9604}{0.0025}$$

$$n_o = 384.16$$

Table 3.2: Sample Size

Category	Assumed Proportion	Proportional Sample Size
Police Officers	10.42%	40
Crime Analysts	5.21%	20
DCI	7.81%	30
Residents	76.56%	294
Total	100%	384

Source: (Author)

The distribution will be as below:

Table 3.3: Distribution of Data Collection Instruments

Group	Total Sample	Quantitative Tool (Questionnaires)	Qualitative Tool (Interviews / Focus Group Discussions)
Police Officers	40	30 (Questionnaires)	10 (Key Informant Interviews)
Crime Analysts	20	15 (Questionnaires)	5 (In-depth Interviews)
DCIs	30	20 (Questionnaires)	10 (Key informant interviews)
Residents	294	274 (Questionnaires)	20 (Focus group discussions)
TOTAL	384	339	45

Source: Author

This proportional sample size distribution ensured that all the stakeholders who are involved in digital police reporting systems were captured in the study. However, the study's breadth broadened with the inclusion of crime analysts, who are the personnel involved in the management of digital crime data at the IC3, including system administrators and technical experts. Focus group discussions were divided into 3 groups of 8, 6 and 6 informants. The sample selected was sufficient enabling the collection of meaningful data for generalization of the findings.

3.6 Data Collection

Data was collected systematically to ensure accuracy, reliability and ethical compliance. Prior to fieldwork, the researcher obtained an introduction letter from the university and then secured the necessary permit from the National Commission for Science, Technology and Innovation (NACOSTI). The study employed a combination of structured questionnaires, key informant interviews and focus group discussions to collect both quantitative and qualitative data. Quantitative data was collected from respondents through questionnaires administered virtually and face-to-face. Secondary sources were also used to supplement primary data.

3.6.1 Research Instruments

To gather field data, this study exploited several research tools for reliability and efficiency of data. Questionnaires and interview schedules/focus group discussions were the main data collection instruments from primary data sources which included police officers, crime analysts, residents of Kasarani Sub-county and DCI officers within NCC. These questionnaires included both closed questions and open-ended questions administered online and distributed physically to respondents, to obtain quantitative data regarding respondents' experience, perception, and attitude towards digital police reporting systems. The questions were grouped into sections. The first section aimed at collecting demographic information; this section involved gathering information on factors such as gender, age, years of service for police officers, DCI officers and analysts, rank for the police officers and the frequency of their interaction with digital policing tools.

The second section measured the level of adoption and utilization of digital police tools in reporting like digital crime files, real-time surveillance equipment, and

mobile reporting systems. The third section focused on the effects of digital policing on crime detection, response time, case solving, and efficiency of policing. The fourth section discussed the issues of concern with digital police reporting, in terms of operational, financial, and technological limitations that impact the effectiveness of digital policing tools. The last part looked for ways and suggestions that could be implemented to improve the detection and response to crimes through digital reporting systems.

Besides structured questionnaires, face-to-face and telephone semi-structured interviews and focus group discussions were conducted with key informants from the target population that included senior police officers and crime analysts involved in digital policing in Kasarani subcounty. These interviews gave more detailed information regarding the historical development, issues and prospects of digitization within the police force. The interview questions included questions related to; the use and application of digital surveillance and data management systems like digital OB in crime detection and response, the impact of the digital technologies on the police reporting operations and case handling, the challenges faced in the implementation and incorporation of the digital reporting solutions, and the future directions on how digital policing can be made even more effective.

To supplement the primary data, a literature reviews of secondary sources such as police reports, past research and crime statistics from the National Police Service, Kenya National Bureau of Statistics and Nairobi City County Integrated Command, Control and Communication Centre were also done. Policies, reports, and publications related to government strategies on digital policing were considered as well as research papers, articles, and media articles on digital crime reporting and policing outcomes to determine whether policy news matched the actual activities on the ground.

3.6.2 Pilot Study

To assess the clarity, relevance and accuracy of the research instruments, a pilot study was conducted in Embakasi Sub-County, the pilot study was conducted in a setting like study area but involving respondents who were not part of the final sample. The purpose was to identify ambiguities, assess the appropriateness of questions and estimate the time required for data collection. Embakasi offers comparable urban dynamics and diverse crime patterns with Kasarani having ongoing digital police

reporting initiatives making it a suitable area for a pilot study. Furthermore, Embakasi offers feasibility and cost-effectiveness to the researcher. Questionnaires and interviews were administered to the pilot respondents twice on separate occasions, 2 weeks apart and response correlated and the result was a strong positive correlation (0.82) indicating the stability of the research instruments over time.

Feedback obtained informed necessary revisions, including rephrasing unclear questions, improving the structure of the instruments and ensuring alignment with the objectives of the study. These adjustments enhanced the reliability and validity of research instruments.

3.6.3 Validity of Research Instruments

Validity is the degree to which research instruments assess the adequacy and appropriateness of inferences drawn from research data (Lim, 2024). For this study, content validity, face validity, and construct validity were used to determine the credibility of the data collected. Internal validity was maintained through a comprehensive literature review of literature on the digitization of police reporting operations and its impact on crime detection and response. This was to assist in the formulation of the questionnaires and interview schedules to capture all the key issues of the study including digital mobile reporting Apps, real-time digital surveillance, digital OBs and their effects on the efficiency of policing. Law enforcement officials, crime analysts, and academic supervisors were also consulted to ensure that the proposed research instruments accurately measure the concepts of interest.

Face validity was established by consulting with research supervisors, as well as other professionals in the field of law enforcement and criminology to determine the clarity of the questions and the logical sequence and absence of bias in the questions posed in the questionnaires and interviews to be administered. This feedback helped in the exclusion of any questions that were misleading, ambiguous or unrelated to the objective of the study. To assess the construct validity, which refers to the extent to which the research instruments measure the theoretical constructs, the responses from the questionnaires were compared with theoretical postulations from earlier studies. Analyzing the data collected through a questionnaire involved the use of factor analysis to assess the degree of fitness of the questionnaire items to the expected constructs.

3.6.4 Reliability of Research Instruments.

Reliability is a measure of the stability of the research instruments in terms of the consistency of results obtained through repeated trials (Lim, 2024). A pilot study was conducted to enhance the reliability of the research instruments. The test-retest reliability method was used in this study; the same questionnaire and interview guides were conducted on a pilot group of 10 police officers and 28 members of the public at two different time intervals. The responses were then compared to determine the level of consistency. Their answers were used to assess the extent to which the instruments collect data that is relevant to the objectives of the study. The internal consistency of the instruments was assessed using Pearson's correlation analysis and the level was at 0.82. Any discrepancies or variations that were observed were addressed before the actual data collection was conducted. The respondents in the pilot study were requested to provide feedback on the comprehensiveness and the suitability of the questions. Through these measures, the study was able to validate the research instruments as well as their ability to produce accurate data on digitization of police reporting systems on crime detection and response in Kasarani Sub County.

3.6.5 Data Collection Procedures

First, research authorization letter was obtained from Africa Nazarene University then a clearance was obtained from National Council for Science Technology and Innovation (NACOSTI). The study employed a combination of structured questionnaires, key informant interviews and focus group discussions to collect both quantitative and qualitative data. Quantitative data was collected from respondents through questionnaires administered virtually and face-to-face. The study also explored participants' experiences, perceptions, and challenges in implementing digital reporting technologies through interviews with police officers, DCI officials, crime analysts. An interview guide was used to maintain consistency while allowing flexibility for probing and in-depth exploration of emerging issues. Focus group discussions with residents and experts were conducted after purposive selection. Three focus groups consisting of 8, 6 and 6 participants each were moderated by the researcher using a semi-structured discussion guide virtually with each session lasting 60 minutes.

Finally, data from secondary sources such as crime records, journal, and government statistics before and after digitization were used to gather insight into changes in crime trends, resolution rates and response times. The data obtained helped

in drawing a conclusion to whether digital systems of police operations have had a visible impact on crime detection and response in as far as resolution rates, response time and change in crime trends are concerned. The data collection tools were tested for clarity and validity through a pilot study, and the collection process took an approximate 5 months, due to the large sample size, busy schedules of expert respondents and resource constraints.

3.7 Data processing and Analysis

In this research, both qualitative and quantitative methods of data collection were used to make inferences and deductions about digital police reporting operations and crime detection and response outcomes. Both quantitative and qualitative data were collected and analyzed separately then triangulated to strengthen the validity of the study's conclusions. The integration of findings involved comparing whether qualitative insights align with quantitative data, validating observed trends, and using qualitative responses to explain contextual factors influencing the effectiveness of digital police reporting systems. This study offered both statistical evidence and in-depth contextual understanding, leading to well-rounded conclusions and actionable recommendations for enhancing digital policing strategies in Kenya and beyond.

Quantitative data from questionnaires were analyzed using the Statistical Packages for Social Sciences (SPSS) version 26.0 in two stages: Descriptive statistics were used to summarize and present the characteristics of the data including demographic information, awareness levels and usage patterns of digital reporting tools after which the findings were presented in tables and charts to provide clear data visualization. Afterwards, Pearson's correlation coefficient was computed to determine whether the strength and direction of the relationship between digital reporting systems and crime detection and response with the statistical significance level set at 0.05.

Qualitative data from interviews, focus group discussions and open-ended questions were analyzed using thematic analysis with Excel and then coded for recurring trends which were further grouped into broader themes. This thematic analysis helped gain a better understanding of the views of the stakeholders and the in relation to digital policing.

3.8 Legal and Ethical Considerations

3.8.1 Voluntary Participation and Informed Consent

Each respondent was informed about the aim and objectives of the study, procedures involved and their role in the study and was allowed to decide whether they were willing to voluntarily participate in the study. They were also made aware that participation was entirely voluntary and that they could withdraw from the study at any stage without any consequences.

3.8.2 Confidentiality and privacy

This study ensured no records or information that could expose the identity of any respondent or organization was included in the report. Additionally, private personal questions were excluded from the questionnaires and interview schedules. Participants were not required to provide personally identifiable information, and any data collected was coded to ensure that individual responses could not be traced back to specific participants.

CHAPTER FOUR

DATA ANALYSIS AND FINDINGS

4.1 Introduction

The purpose of the study was to examine digitization of police reporting systems on crime detection and response. The guiding objectives of the study were to investigate the role of Mobile reporting Apps on crime detection and response, to determine the impact of real-time digital surveillance systems on crime detection and response and to evaluate the influence of digital occurrence books on crime detection and response. Key informant interview guides were used to collect information from police officers and officers from the DCI, in depth interviews conducted on crime analysts with focus group discussions held with members of the public (residents). A total of 339 structured questionnaires were also administered to key stakeholders. This chapter presents the analysis, interpretation and discussion of findings and results.

4.2 Response Rate

The study first established the response rate of the respondents. A total of 339 questionnaires were distributed both physically and some online. A total of 271 were returned representing 79.94%. Interview guides were also administered on 25 informants. A total of 23 responses were captured 'represented by 92% response rate. Of the 20 people targeted for focus group discussion, 14 turned up representing a 70% response rate. According to Kothari (2005), a response rate of above 60% is sufficient and reliable for data analysis. The established response rate for each target group was therefore established as sufficient to form meaningful analysis and conclusions.

Table 4.1: Response Rate

Category	Frequency	Percentage
Questionnaires	271	79.94%
Interview guides	23	92%
Focus group discussion guides	14	70%
Total	308	80.21%

Source: Field Data, 2025

4.3 Characteristics of the Respondents

The study sought to establish the background information of the respondents including age, gender, level of education and length of service. The information was crucial in respondent grouping and in structuring questions for focus group discussions. The findings were as follows:

4.3.1 Gender of the Respondents

The views from both male and female were incorporated in this study as illustrated in table 4.1 below. Out of the 308 respondents, 62.66% (193) of the respondents were male while 37.34% (115) were female. The gender distribution of the respondents indicated that the male gender dominates the security field due to the perceived masculine nature of this field of practice and therefore attracts minimal interest from the female gender, although the inclusion of both genders ensured diversity in opinions.

Table 4.2: Gender of the Respondents

Gender	Frequency	Percentages
Male	193	62.66%
Female	115	37.34%
Total	308	100%

Source: Field data (2025)

4.3.2 Education level of the respondents

In a bid to understand the level of knowledge of the respondents, the study established the education level of the respondents. The study results revealed, as illustrated in figure 4.1 below, that 47.40% (146) of the respondents had tertiary education, 27.87% (92) had degrees and postgraduate degrees, 12.66% (39) had secondary school education while the remaining 10.07% (31) had either primary or no education. The results indicated that most of the respondents were knowledgeable and hence able to give fair and objective views in relation to the study.

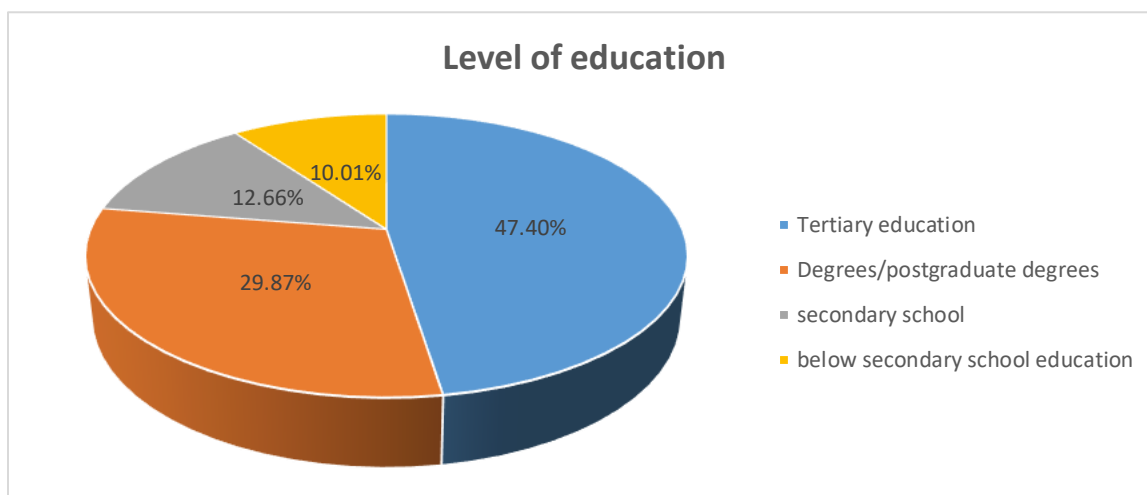


Figure 4.1: Education Level of the Respondents

Source: Field data (2025)

4.3.3 Age of the Respondents

The respondents comprised of different age brackets. 62.67% (193) of the respondents fell between the ages 25-35; 12.66% (39) between 36-45 years; 7.47% (23) between 46-55 years of age; 4.54% (14) were above 55 years while another 12.66% (39) were below 25 years of age. Age diversity was helpful in capturing the perception of different generations to achieve the objectives of the study. From the results, most of the respondents were below 45 years which indicates that young adults are more interested in digital systems compared to older people. For this study, this was crucial as this target group was considered to understand digitization tools in policing in depth and they are often the targeted consumers of digital tools. Figure 4.2 below illustrates the age of the respondents.

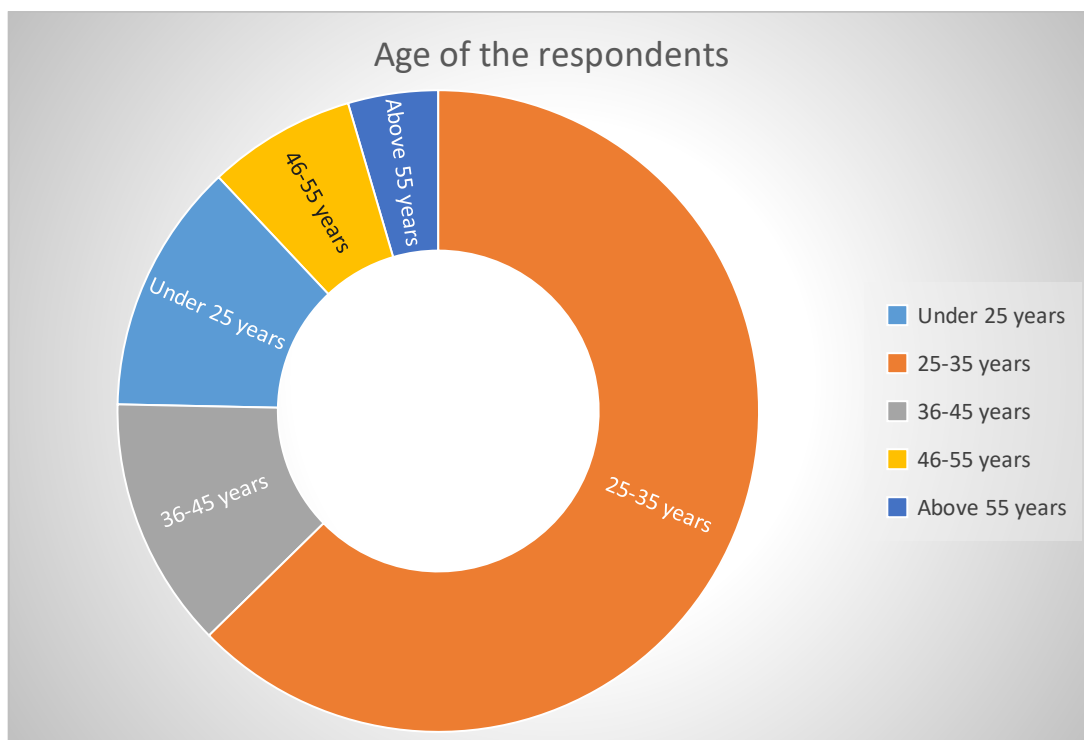


Figure 4.2: Age of the Respondents

Source: Field Data (2025)

4.3.4 Duration of Service

The study sought to establish how long the key stakeholders interviewed had served in their respective posts (this section applied to police officers, crime analysts in the IC3 (except technical staff who were not from NPS) and DCI officers. 20% of the respondents had served for less than 3 years, 51.7% had served for between 3-10 years while the remaining 27.1% had served for over 10 years. This data shows that most respondents had served for more than 3 years, meaning that they had enough knowledge and experience to give informed and expert information. This study needed expert knowledge in studying the objectives and having most officers who had served for long years meant that they had better insight as they had likely worked in more than one police jurisdiction and hence knowledgeable on how different jurisdictions applied digital tools in crime reporting. These figures also indicated that newer officers were also showing attention and interest in digital reporting systems in policing which was crucial in informing the future of such systems in law enforcement.

Table 4.3: Duration of Service of Police Officers

Duration of Service	Frequency	Percent
Less than 3 years	5	21.74%
Between 3-10 years	12	52.17%
Over 10 years	6	26.09%
Total	23	100%

Source: Field data (2025)

4.4 Presentation of Research Analysis, Findings and Interpretation

The aim of the study was to examine the specific objectives which included investigating the role of digital reporting apps on crime detection and response, to determine the impact of real-time digital surveillance systems on crime detection and response, and to evaluate the influence of digital occurrence books on crime detection and response.

4.4.1 Mobile Reporting Apps and Crime Detection and Response

4.4.1.1 Interaction with Mobile Reporting Apps

The study sought to investigate whether the respondents had interacted with mobile reporting apps used in crime detection and response. Results indicated that 50% of the respondents had interacted with mobile crime reporting apps, with only 25% not having interacted with such apps and a further 25% not being sure whether they have used such apps or not. Figure 4.3 illustrates these findings.

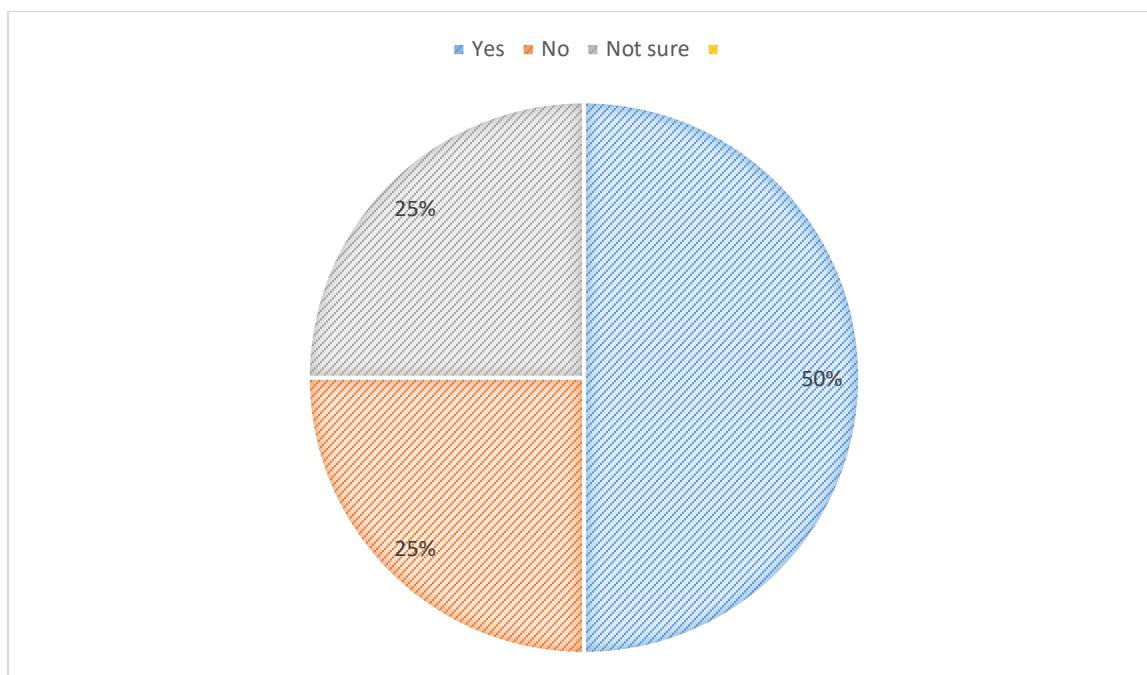


Figure 2.3: Awareness of Mobile Reporting Apps

Source: Field Data (2025)

Awareness of Mobile reporting apps was split with an equal combined number of respondents who were not aware or not sure of these tools of crime reporting. An average number had used mobile reporting apps. The findings were supported by participants in an interview where one of the key informants noted that:

‘Yes, I am aware there are digital apps and channels for crime reporting. What I am not sure of though is whether these channels are known to the members of the public and whether they trust the police force enough to use them. From the crime reports we have been getting; I don’t think the public use digital channels enough to report crime.’ (Key informant 1, 20th November 2025)

Another participant also noted that:

‘Most individuals still prefer walk-ins to the police station although there are digital platforms for reporting crimes. If you look at our crime log in to the manual OB, you will capture this. Partly because they feel they will get better service in a face-to-face interaction with the officers at the station. Some report crime online but also make walk-ins just to confirm whether the reports had been received (Key Informant 2, December 3rd, 2025).

These findings reveal that awareness of mobile reporting apps, although present among a segment of the population, are still limited in application, contradicting optimistic policy announcements narratives presented about digital crime reporting.

4.4.1.2 Perceived Role of Mobile Reporting Applications

The study sought to determine the perceived roles of mobile reporting applications on crime detection and response. The questions consisted of multiple-choice answers, and the percentages reflect respondents who selected each option. The findings indicated that 25% of the respondents who had been aware of the existence of these mobile reporting apps agreed that there had been better crime detection and response due to the use of mobile reporting apps, with some attributing this to the creation of the IC3. A further 50% cited higher resolution rates with another 50% agreeing that there had been better mapping of crime hotspots because of mobile reporting apps. 20% of the respondents cited better inter-agency coordination and information sharing with only 3% citing better data storage, accessibility and retrieval. Figure 4.4 below illustrates the findings.

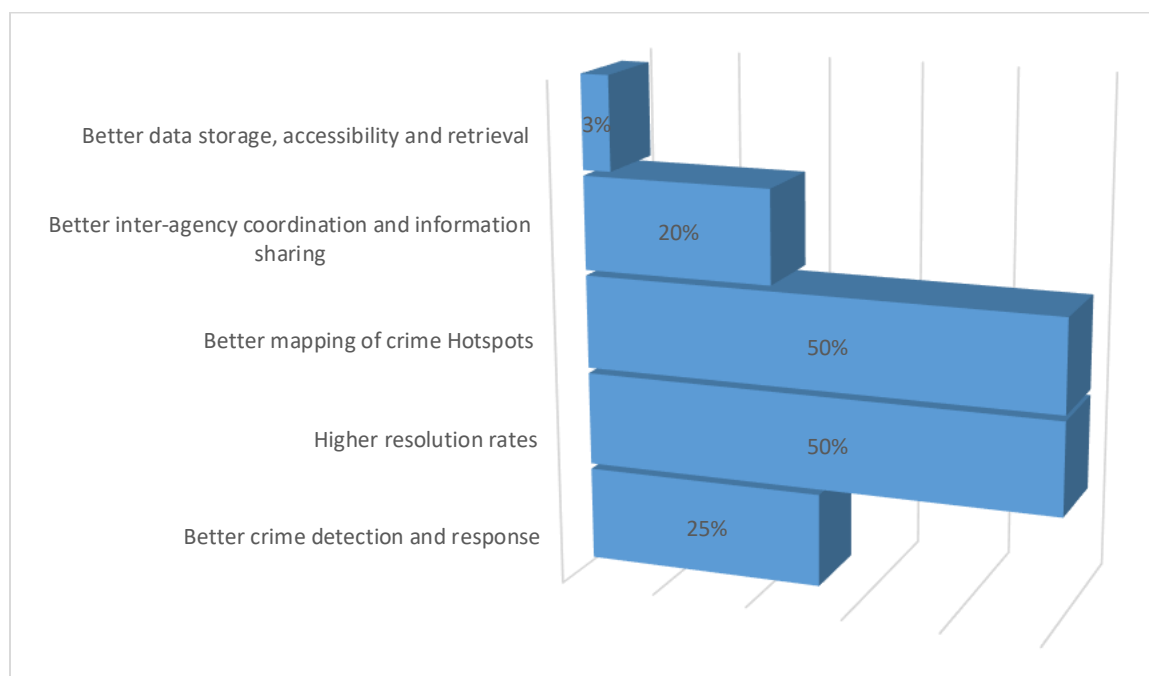


Figure 4.4: Perceived Role of Mobile Reporting Apps on Crime Detection and Response

Source: Field data (2025)

The split in opinions by the respondents reflect how unevenly the integration of digital reporting into mainstream police operations has been. Information from informants also proved that although IC3 has established channels for receiving crime reports and complaints through social media, police hotlines and web portals, there are still inconsistencies in the full utilization of these platforms. The perceived benefits cited by the respondents, however, highlight the promising benefits of these platforms although responses from informants indicate that these benefits are yet to be realized.

4.4.1.3 Implementation Challenges of Mobile Reporting Apps

Despite the positive prospects of mobile reporting apps, several implementation challenges were cited. Lack of and inadequate training emerged as the leading barrier (66.7%), poor internet connection (20%) and inadequate resources (14.3%). Proliferation of artificial intelligence was also cited by some respondents and informants (12%). An informant specifically stated that:

‘In this age and era of AI, it becomes difficult for us to determine content that is true from those that are AI generated. We cannot rely solely on social media reports as a tool for crime reporting because most of those things that are posted online are meant for content, monetization and entertainment. The bad news is that sometimes we ignore even true crime because of this, compounded by the large volumes of data often transmitted online. Data filtering from media sources is a hard and almost impossible task’ (Key Informant 3, December 3rd, 2025).

A key informant also noted that, *‘Kenyans had increasingly become assertive of their rights and using social media as an advocacy tool putting pressure on investigators who are expected to act.* These findings support the above findings that although digital reporting in police operations has taken root, there exist barriers to the realization of their full benefits.

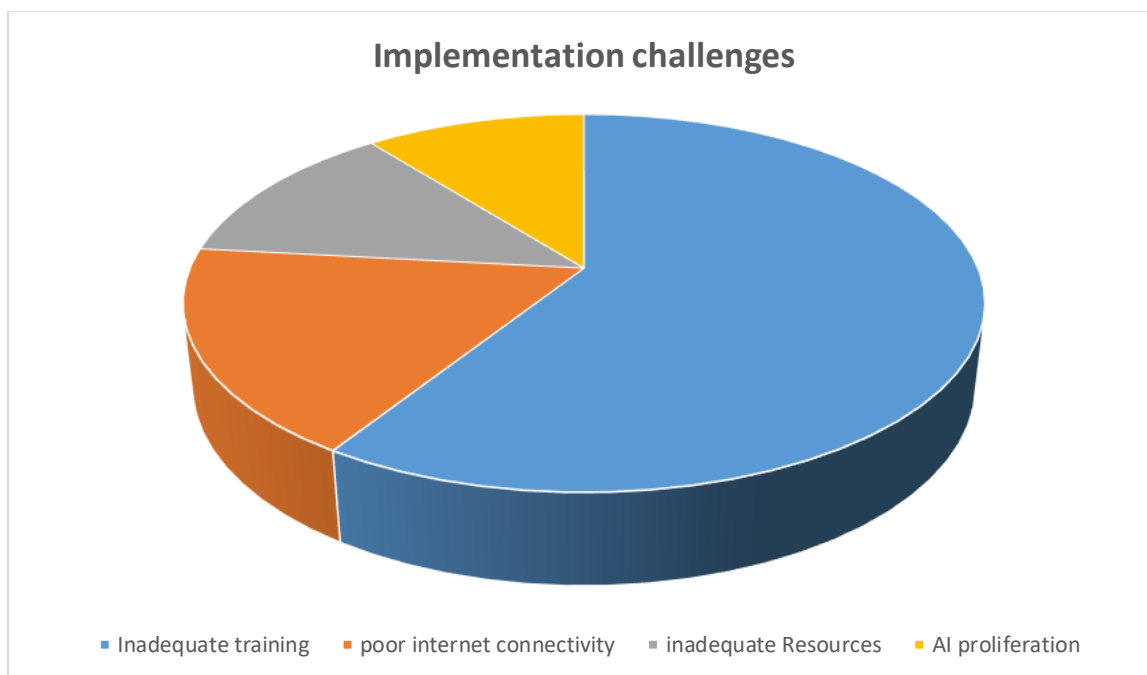


Figure 4.5: Implementation Challenges of Mobile Reporting Apps

Source (Field data, 2025)

4.4.2 Impact of Real-Time Digital Surveillance Systems on Crime Detection and Response

The second objective of the study was to determine the impacts of real-time digital surveillance systems on crime detection and response.

4.4.2.1 Interaction with Real-time surveillance systems

The study sought to determine interaction with real-time surveillance systems. Findings indicated that 79.87% of the respondents had either knowledge of or had used real-time surveillance systems, 14.94% had not interacted with such systems while a further 5% were not sure. This high level of engagement distinguishes this system from mobile reporting applications and digital OBs reflecting the extent to which such systems have penetrated law enforcement and daily civilian life.

Table 4.4: Interaction with Real-Time Surveillance Systems

Interacted	Frequency	Percentage
Yes	246	79.87%
No	46	14.94%
Not Sure	16	5.19%
Total	308	100%

Source: Field Data (2025)

A dominant response from focus group discussions indicated that, *out of every 10 households in an urban setting, at least 5 will have CCTV surveillance. Almost all urban office spaces also have incorporated some form of surveillance.* This strongly suggests a familiarity of digital surveillance systems among the civilians, strongly facilitated by the widespread incorporation into the daily lives of Kenyans in their workplaces and daily lives. This was crucial to this study as respondents who understood and had interacted with these systems were believed to be in a better position to provide valuable responses and insights into understanding this specific objective of the study.

4.4.2.2 Perceived Benefits of Real-Time Surveillance Systems

The study established the perceived benefits of real-time surveillance systems on crime detection and response. Findings showed that 91.88% of the respondents agreed that digital surveillance systems had significant benefits on crime detection and response, 5.84% of the respondents disagreed with the assertion while a further 2.28% were not sure, as shown in table 4.5 below. This high level of agreement among respondents indicates a strong convergence of opinion reflecting visibility and utility of these systems in day-to-day lives. This was crucial in bringing out most insights into the objectives of the study. One participant in an interview noted that,

“The presence of CCTV cameras and digital monitoring systems has helped reduce crime because criminals know they can be easily identified and tracked.” Another informant also noted that *“real-time surveillance enables officers to respond quickly to crime before situations escalate because information is transmitted instantly.”* These statements support the views of respondents and strengthen the

Routine Activity Theorists' view that the presence of surveillance deters crime and decreases opportunity for crime.

Table 4.5: Perception on Benefits of Real-Time Surveillance Systems

Any Benefit	Frequency	Percentage
Yes	283	91.88%
No	18	5.84%
Not Sure	7	2.28%
Total	308	100%

Source: Field Data (2025)

Of the 91.88% who agreed that there were some benefits of digital surveillance systems, there were divergent views on the specific benefits that these systems have on crime detection and response. Faster detection and response to crime by police officers was the most prominent one (272 responses) followed by higher resolution rates (241). Other benefits highlighted included improved mapping of crime hotspots (113), improved criminal tracking, identification and apprehension (102), better inter-agency coordination and information sharing (62) and better resource allocation (31).

An informant noted that, “*these surveillance systems had been adopted in both virtual and static weighbridges to deter trucks that overload or cars that destroy highway equipment.*” This indicates that there is a strong perception on the ability of these systems to revolutionize crime detection and response, even to other agencies. Wheeler and Jung (2023) agreed with these findings by asserting that resolution rates were higher in areas where crime occurred at the vicinity of surveillance systems. Figure 4.6 below illustrates these findings.

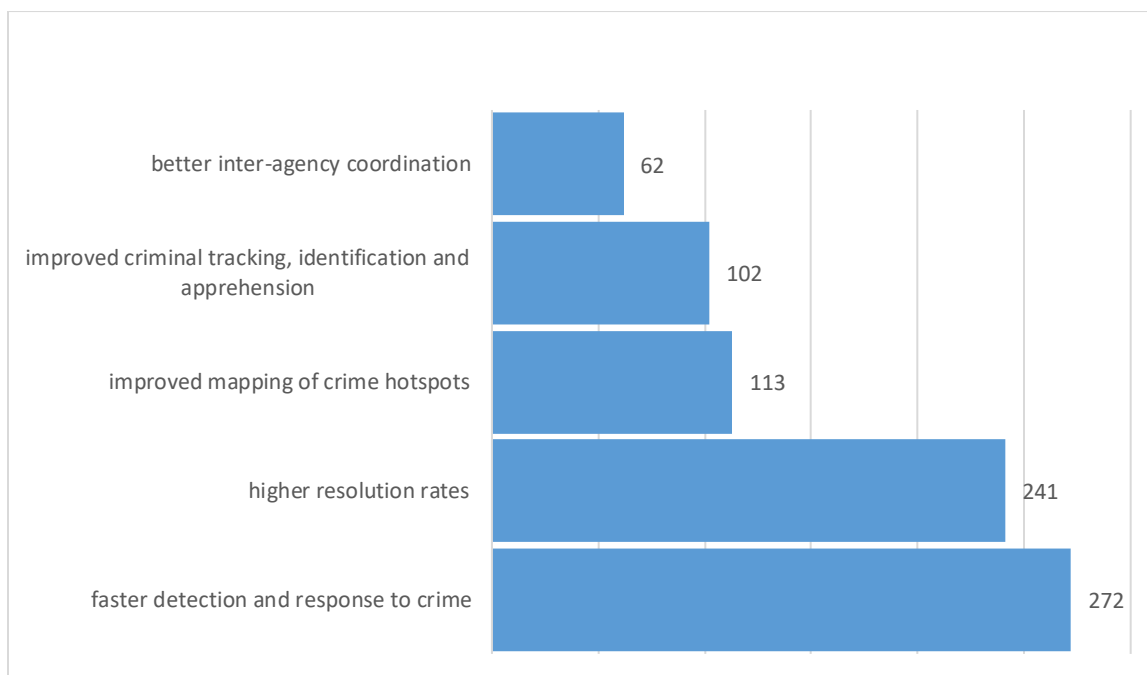


Figure 4.6: Perceived Benefits of Real-Time Surveillance Systems on Crime Detection and Response.

Source: Field Data (2025)

One respondent specifically said,

“Yes, we got surveillance cameras on our roads and major highways, offices and public spaces. But it is not often when a local citizen is likely to be served justice when involved in a hit and run by an unmarked government vehicle on some highway in Kenya. I think these systems are meant to support and protect the elite and powerful with footage being doctored at the interests of these elites. I also think personal data is being retained by police especially from ANPR.” This means that although the benefits of real-time surveillance systems are appreciated, the public still doubts the transparency and the ability of the police to carry out independent investigations, especially where public figures are involved. Another challenge highlighted in the study was the issue of privacy and the infringement of civil rights.

4.4.2.3: Effectiveness of Current Surveillance Systems in Crime Detection and Response

The study also sought to establish the respondent’s perception on the effectiveness of these systems in crime detection and response. Findings indicated that 82% of the respondents strongly agreed that surveillance systems were effective in facilitating crime detection and response. A further 10% agreed while 8% disagreed.

None of the respondents were neutral or strongly disagreed with this notion as illustrated in figure 4.7 below. This was helpful in supporting the study theory that presence of guardians acted as crime deterrents, a finding that was also noted from the views of most focus group discussion participants. One informant particularly noted that, *“real-time surveillance technology has enhanced how the police investigate, detect and respond to crime. Crucial time that could have included looking for human witnesses now gets one system to help in the construction of crime events as they occurred.”*

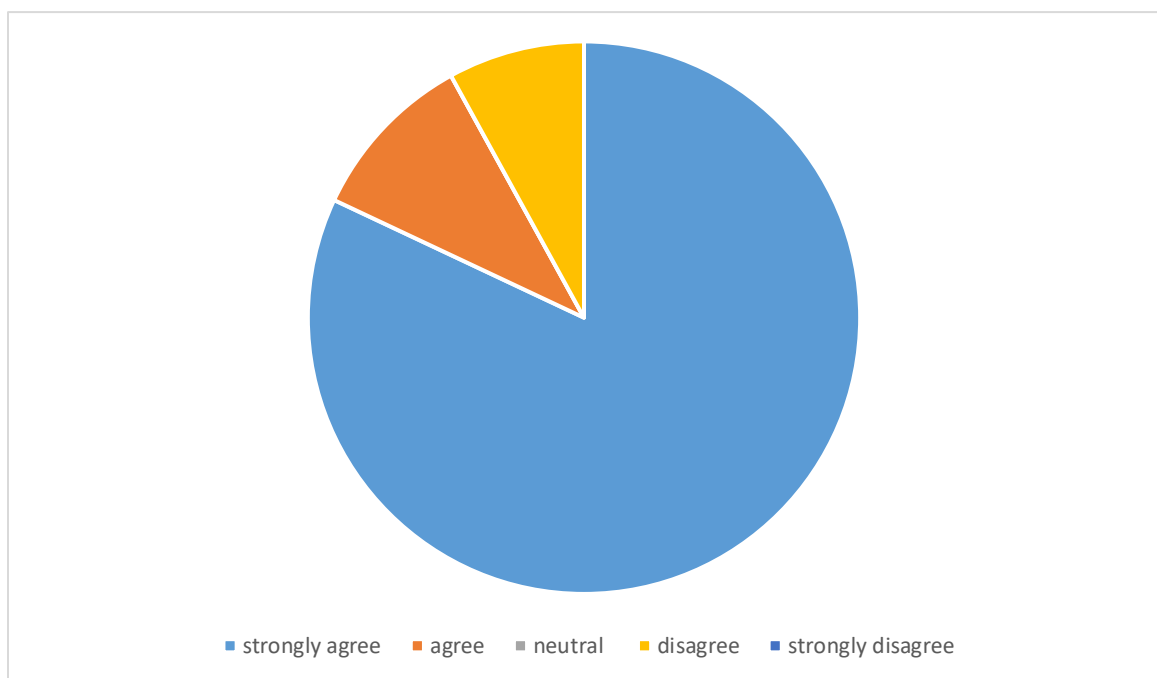


Figure 4.6: Perception on the effectiveness of real-time surveillance systems on crime detection and response

Source: Field Data (2025)

4.4.2.4 Challenges Affecting the Implementation of Real Time Surveillance Systems

Despite the high effectiveness ratings of surveillance systems, several challenges were highlighted by the respondents from the questionnaires and interviews conducted. The most prominent one was the dependence of these systems on reliable internet connectivity and stable electricity supply, which is not evenly distributed in the country. This implies that in areas where power outages are common, surveillance systems become non-functional creating temporal blind spots in crime monitoring and response. Another challenge noted was that data analysis for the big data volume received from these sources needed integration with other digital tools, without which

mapping repeat offenders and crime hotspots becomes hard. A further concern that was noted visibly was the issue of data privacy and civil liberty concerns particularly in relation to the collection, storage and potential misuse of personal data captured by surveillance systems, poor image and information quality and limited cooperation from witnesses. An informant noted that, *“it is never certain how personal data is consumed by the police. Sometimes personal information gets to the public domain and exposes an individual to online bullying and scamming.”*

4.4.3 Influence of Digital Occurrence Books on Crime Detection and Response

Another focus of the study was to evaluate how occurrence books were maintained at the stations or agencies and their influence on crime detection and response. Kasarani police station was notably the first station in Kenya to pilot the use of digital OB in policing. Data was collected to assess awareness, current maintenance practices, perceived benefits, user-friendliness and implementation challenges associated with digital OBs.

4.4.3.1 Awareness of Digital Occurrence Books

The findings indicated that only 24% of the respondents knew of the existence of digital occurrence books, another 16% were not sure while 60% had not heard of them as shown in table 4.6 below.

Table 4.6: Awareness of Digital Occurrence Books

Awareness of digital occurrence books	Frequency	Percentage
Yes	76	24.68%
Not aware	183	59.41%
Not sure	49	15.91%
Total	308	100%

Source: Field data (2025)

The strikingly low level of awareness of digital OBs stands in contrast with the media and policy hype that has accompanied their launch in Kasarani. Despite Kasarani being the pilot area for the launch, most of the people within Kasarani had not heard of them. These findings suggest that the rollout has been limited in scope and that civic education and awareness campaigns have not been fully conducted to inform the

stakeholders and the public about these systems. Several participants in focus group discussions noted that they had never interacted with digital OBs. One participant noted that,

“I have heard about online police systems on the news, but I have no idea how to access them.” Another participant also noted that, *“We still receive a high percentage of walk-in reports compared to electronic crime reports, partly due to the limited resources allocated for public sensitization.”*

4.4.3.2 Maintenance of Occurrence Books

Of the respondents who had interacted with occurrence books, the study sought to establish how occurrence books were maintained. 50% (38 respondents) maintained that occurrence books in their stations were maintained manually, 25% (19 respondents) reported a hybrid approach combining both manual and digital methods while a further 25% (19 respondents) could not say how occurrence books were maintained.

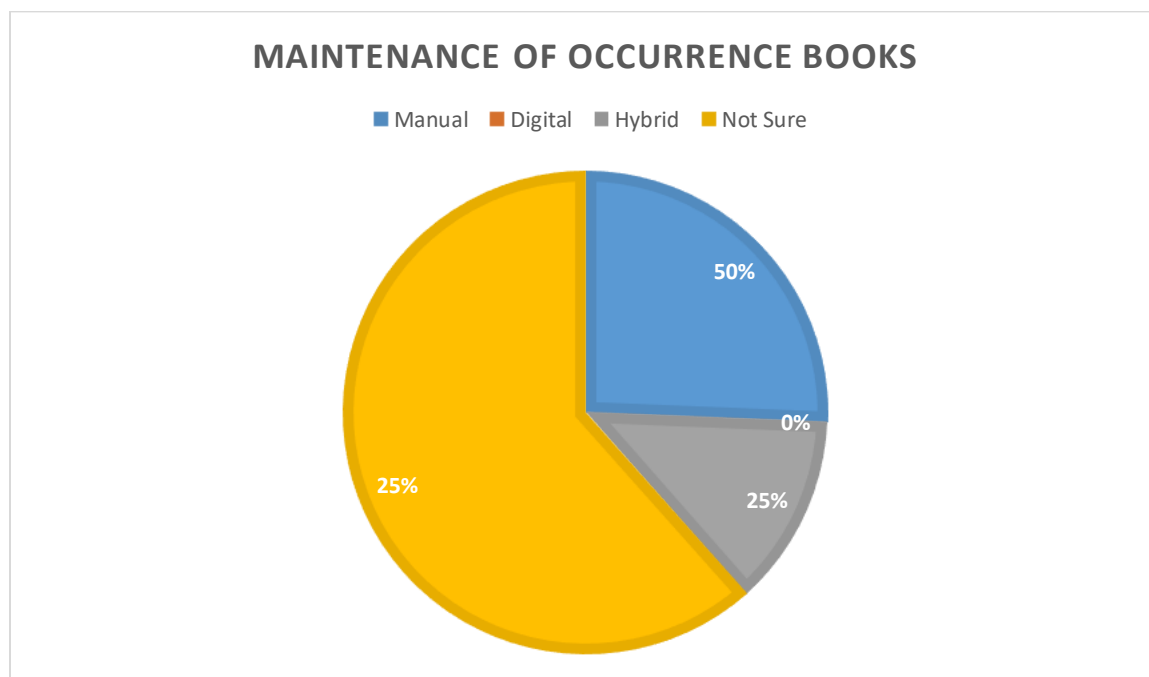


Figure 4.7: Maintenance of Occurrence Bo 1

Source: Field data (2025)

The dominance of manual methods of entries in OBs even from among respondents of a pioneer area for digital OBs in Kenya indicate the persistence of traditional policing methods and slow digital adoption. The use of hybrid methods,

however, suggests transitional step towards adoption although at an inconsistent and partial pace. Interestingly, no police station recorded exclusive use of digital OBs indicating a significant gap between policy intent and operational reality.

One informant noted that:

‘The real reason the police are adamant in adopting exclusive digitization in police record keeping is because most officers are technologically illiterate. This is mostly due to the traditional recruitment methods where priority is given to physical fitness rather than literacy and education levels’ (Key Informant 4, December 3rd, 2025).

4.4.3.3 Effectiveness in the Accuracy and Completeness of Crime Reports

Key informants were also asked to rate the effectiveness in the accuracy and completeness of crime reports brought about by the implementation of digital OBs. 40% said that digital OBs are always effective, 30% said that they are often effective, 18% stated that they are sometimes effective, 9% said that they are rarely effective while 3% said that they are never effective as shown in figure 4.8 below. The positive response indicates that if fully implemented, digital OBs have the potential to revolutionize crime reports.



Figure 4.8: Effectiveness of Digital OBs in Accuracy and Completeness of Crime Reports

Source: Field Data (2025)

4.4.3.4 Perceived impacts of Digital Occurrence Books on Crime Detection and Response

The study sought to establish the impact of digital OBs on crime detection and response. Findings indicated that improved tracking and monitoring of crime trends was the most positive impact of digital occurrence books cited by 42.5% of the respondents. Improved detection and response rates were mentioned by 25% of the respondents while faster crime reports and easy data analysis were mentioned by 22% of the respondents. Only 2% of the respondents cited enhanced investigative capabilities with a whopping 8.5% of the respondents not being sure how digital OBs impact crime detection and response.

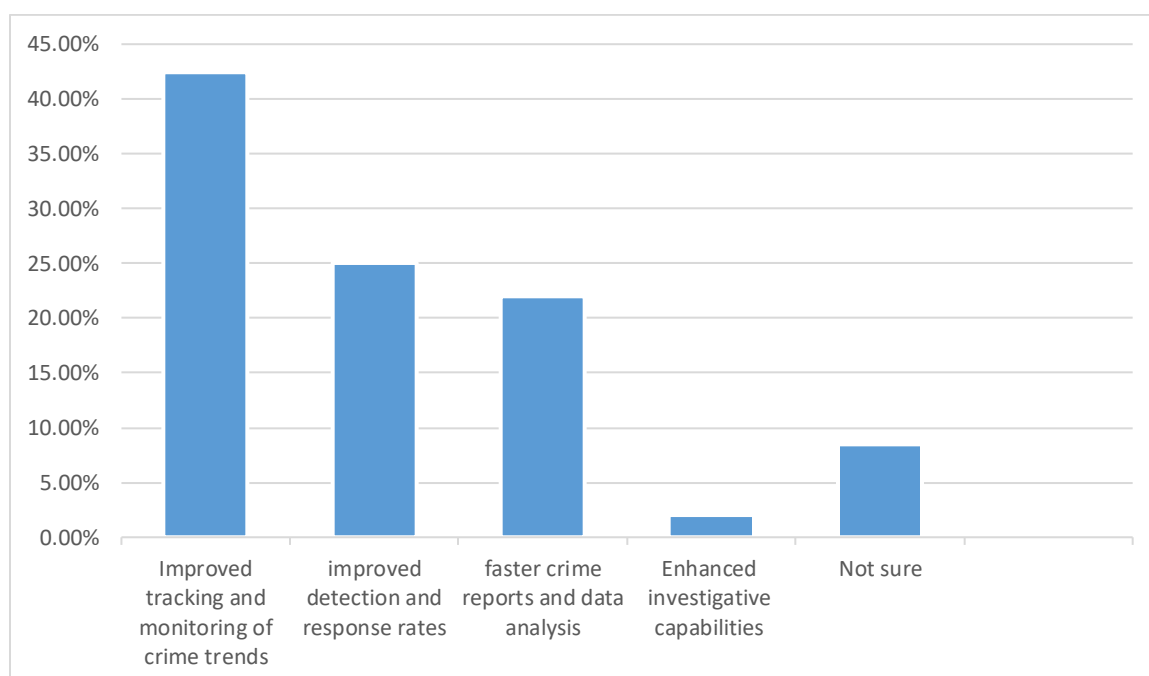


Figure 4.9: Impact of Digital Occurrence Books

Source: Field data (2025)

An informant said that:

‘Even if all police stations were to record crime reports digitally, the police are used to manual investigative methods, and you will find some officers forgetting their user logins frequently leading to data loss. A hybrid method might work but for most officers, without proper training, not much can change’ (Key Informant 5, December 3rd, 2025).

From the findings above, digital OBs have shown little effect on police investigative capability although there are promising impacts on how crime reports and

data are analyzed for detection and response to crime. There was a significant number of key informants who noted that digital OBs have a higher chance of improving detection and resolution rates and in monitoring and tracking crime trends. Proponents of DOI theory argued that one of the factors that influenced technology adoption was perceived benefits and from these results, the perceived benefits of digital OBs are evident even among this population of limited exposure and calls for a re-evaluation of implementation strategies.

CHAPTER FIVE

DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents discussions on the study findings, draws evidence-based conclusions and articulates targeted recommendations for policy and practice. The primary objective of this chapter is to offer an understanding of the research findings on whether digital police reporting systems have a significant influence on crime detection and response outcomes. This objective is achieved through a systemic discussion in relation to the DOI and RAT theoretical frameworks and empirical studies, followed by a synthesis of the findings and the formulation of actionable recommendations for policy makers, law enforcement agencies, researchers and concerned stakeholders who might benefit from these findings.

5.2 Discussion

The study investigated the digitization of police reporting systems and their impacts on crime detection and response. The specific objectives examined the role of mobile reporting apps on crime detection and response, the impact of real-time digital surveillance systems on crime detection and response, and the influence of digital occurrence books on crime detection and response. The demographic profile of questionnaire and key informant respondents comprised majorly of younger adults between the ages of 25-35 representing a technologically literate and enlightened cohort who are mostly the curious users of smart phones and digital platforms. A substantial percentage of respondents from both questionnaires and focus group discussions possessed secondary education or higher, showing their ability to engage meaningfully with questions pertaining to digital tools and technology-driven crime reporting systems.

Routine Activity Theory (RAT), as advanced by Cohen and Felson (1979), posts that crime occurs when three elements converge in time and space; a motivated offender, a suitable target and the absence of a capable guardian. This study applies these three elements systematically across its three objectives to explain crime patterns in Kasarani. The analysis explains that digitization of police reporting systems primarily intervenes at the level of guardianship, either strengthening it through surveillance and faster response, or undermining it through implementation gaps,

selective deployment and infrastructure deficiencies. Where guardianship is digitally reinforced, crime detection improves; where it remains absent or inconsistent, motivated offenders continue to exploit suitable targets unimpeded.

5.2.1 The Role of Mobile Reporting Applications on Crime Detection and Response

The first objective investigated the role of mobile reporting apps on crime detection and response. Findings revealed a complex and multifaceted picture characterized by a significantly low public awareness of mobile reporting applications and digital platforms, inconsistency in usage patterns, implementation challenges and mixed perceptions regarding the effectiveness of these apps in detecting and responding to crime. The limited awareness of the mobile reporting apps represents a fundamental barrier to effective implementation and contradicts optimistic policy announcement narratives often presented about digital policing in Kenya.

The study findings indicated that most of Kasarani residents were hesitant in reporting crimes digitally. *Rogers et al (2003)* in articulating DOI theory notes that innovation disseminates among populations in an organization at varying rates and the adoption variables might include compatibility with existing systems, complexity of such innovations and perceived and observable benefits. This theoretical framework explains why only a limited segment of the population were using digital platforms for crime reporting and why uneven adoption patterns persist in Kenya despite the existence of such digital platforms for reporting crime. Kenya can therefore be categorized as the late majority adopters described by García-Avilés (2020), who only adopt a technology after the average person.

Despite the uncertainty about the overall impact of mobile reporting apps on crime response and detection, key informants with knowledge of these platforms cited several benefits including improved criminal tracking and apprehension and faster detection and response to crime by police officers, findings that align to those of Barasa and Muhindi (2024) whose findings noted a strong positive association of technological application on crime detection. These results indicate a positive trajectory in crime detection by the Kenya police force aligning with digital transformations in countries like the USA who have transformed their police response capabilities through location tracking and capabilities by creating Real Time Crime Centers (RTCC) (Simlai &

Sandbrook, 2021), a center similar to Kenya's IC3 in Nairobi (Mwangi & Omboto, 2021), and the UK's Police Online Reporting Tool (PORT) that has streamlined documentation and reduced crowding in stations (Jefferson, 2020).

According to the findings, the establishment of the IC3 has enhanced real time reporting through online websites, social media and police hotlines that have in turn helped in mapping crime hotspots. These findings corroborate those of Mwangi and Omboto (2021) who attributed enhanced public safety to technological adoption in crime reporting, findings that are in line with the assertions of RAT proponents. These similarities are because of the ongoing investment by the government in different digital ways of enhancing efficient reporting of crime. Findings revealed an increased online crime reporting pattern that is attributable to the anonymity afforded by online crime reporting and that it relieved whistleblowers of victimization especially on violent crimes or high-profile cases. Efficient and faster response time evident from the study findings is attributed to the reporting time that was also highlighted by *Dau et al (2023)* indicating that the sooner a crime is identified and reported, the sooner it is responded to; digital platforms for reporting tend to be faster than traditional station walk-ins.

Better inter-agency coordination, although not predominantly stated, was also cited from the study as a benefit of mobile reporting synonymous to a study by Andrews (2017) who noted that "digitization allows different law enforcement organizations to communicate in real time." According to the UNODC (2023), Countries like the USA are still struggling with organized crime despite sophisticated online reporting systems. The European Union and other international organizations have established advanced online crime reporting mechanisms which have enabled their member states to enjoy inter-agency and international sharing of crime reports that have in turn helped in reducing proliferation of transnational organized crimes and terrorism (Bellanova, 2016).

The research findings indicate that although digital reporting systems are being embraced as a method of crime reporting, inadequate training is still the major barrier. Resources are either lacking or insufficient to fully help police stations conduct stakeholder and staff training on the use of digital tools and software, and to buy equipment needed to support such communication. Similar challenges were also highlighted by Barasa and Muhindi's study (2024). Other challenges cited in the study

include information manipulation, privacy and ethical concerns, uneven infrastructural development, and varying levels of digital literacy. These persistent challenges in implementation of mobile reporting are majorly due to a lack of ground-level pre-implementation mapping of perceptions and anticipated challenges.

Applying RAT to the findings on mobile reporting apps reveal a guardianship deficit at the heart of Kasarani's digital reporting landscape. Motivated offenders in Kasarani operate with reasonable confidence that crimes reported through digital platforms will receive slower, more uncertain responses than those reported through traditional walk-in mechanisms. This confidence is rational: the findings confirm that police officers remain more likely to deploy resources in response to in-person reports than to online or anonymous digital submissions, effectively reducing the deterrent value of mobile reporting systems. The Capable guardian functions that mobile reporting apps theoretically provide-by enabling faster alert, anonymized reporting, and hotspot mapping-is therefore structurally weakened by institutional mistrust or digital intelligence and the absence of standardized protocols for acting on digitally reported crimes.

The anonymity afforded by online reporting was found to have increased the willingness of witnesses and victims to report crimes involving violence or high-profile offenders. This represents a partial RAT gain; more reports theoretically increase the information available to guardians. However, since motivated offenders can observe that selective police deployment prioritizes cognizable and media-visible offences, the perceived risk of apprehension for lower-profile crimes remains low, preserving rather than disrupting the convergence of offenders, target and absent guardian. The IC3's intended function as a comprehensive guardianship infrastructure is therefore only partially realized; it improves response to visible crimes while leaving routine offending largely unguarded digitally.

Mobile reporting systems, especially online social media platforms, according to the study, was not a reliable source of crime reports as they were found to have the potential of providing misleading information. *Gichohi et al (2023)* pointed safety and privacy concerns, adulteration and misinformation as hindering the reliance on online reports. The study agrees with these findings, especially concerning those of victimization and the prominence of artificial intelligence (AI) as a tool for content

creation. Most police officers maintained that they find it hard to distinguish real from AI generated content meant for entertainment. Furthermore, the informants maintained that Kenyans' sensitization to civil rights and liberties further complicate the ability of the police to ensure witness anonymity as most people are no longer afraid of their identities being known or of putting other witnesses or victims' identities online. Kenyans have been known to use social media for advocacy and, according to some experts, this put unnecessary pressure on the investigators who have a time frame on such cases and sometimes give half-truths just to ease the pressure on them.

The study, therefore, highlights the importance of what Mwangi and Omboto (2021) identified as critical success factors for Kenya's IC3 and overall, the future of mobile reporting applications in Kenya; the need for continuous citizen sensitization and multi-channel reporting options, what most respondents referred to as 'availability of reporting channels.' It is also in line with the DOI theory's proposition that only technological advancements that are deemed beneficial will be adopted by an organization and that people's perception and adaptability matter in the face of such advancements. This is why addressing awareness gaps extending beyond law enforcement and the broader community that these systems are supposed to serve is crucial.

5.2.2 Impact of Real-Time Digital Surveillance Systems on Crime Detection and Response

The second objective of the study was to determine the impact of real-time digital surveillance systems on crime detection and response. Simlai and Sandbrook (2021) defined digital surveillance technology as the use of digital technologies to monitor or gather real-time information regarding people's activities for security and managerial measures. The findings of this study revealed a very high engagement with digital surveillance systems. Interestingly, the opinions on the effectiveness of such systems were also notably high with only a handful either disagreeing with or expressing uncertainty regarding their effectiveness. This high level of familiarity indicates the consistency with which people interact with these systems in daily context, often outside traditional law enforcement paradigms.

Digital surveillance, according to the study, has permeated the lives of most Kenyans today; at homes people use nanny cameras and CCTV cameras, at workplaces

people use biometric logins and authentications, facial scanners and even voice recognition machines. The findings indicate that the law enforcement in Kenya has also embraced the use of digital surveillance technology systems in detecting and responding to crime. CCTV cameras are strategically placed on roads and complimented by ANPR assist cameras that are used to identify and prosecute traffic offenders. The study findings outlined that ANPR assists have been utilized by axle load enforcement departments in virtual and static weighbridges to detect and respond to traffic offences related to axle loads violations.

Wheeler and Jung (2023) argued that crime resolution rates were substantially higher when crimes occurred at the vicinity of surveillance cameras, like the findings in this study. Proponents of RAT would agree with these findings as they maintained that the absence of suitable guardians could predispose one to commit a crime and that real-time digital technologies act as guardians for law enforcers (Jubaer & Hassan, 2021). Socha and Kogut (2020) also noted in their study that the presence of CCTV cameras in urban areas reduced crime levels and improved the sense of security in public places, although they identified the need for improved camera coverage and larger storage solutions. Kirui (2024) referred to real-time surveillance as ‘psychological deterrents’ that reduce opportunities for crime as rational offenders would find the likelihood for apprehension too high, although the study findings indicate that guardianship capabilities remain contingent on system functionality, maintenance quality, monitoring consistency, resource availability and integration with response mechanisms.

However, the finding reveals a spatially uneven guardianship landscape. In residential and peri-urban zones where surveillance infrastructure is absent, poorly maintained, or not connected to responsive command Centre, the capable guardian element collapses entirely. Motivated offenders, who as rational actors assess the likelihood of detection before acting (Cohen & Felson, 1979), recognize these unmonitored spaces as low-risk environments. Suitable targets-residents, property, vehicle-remain abundant and accessible. The RAT convergence is therefore complete in this zone, which explains the crime displacement pattern identified in findings: rather than reducing overall crime, surveillance relocates it from monitored to unmonitored areas. This displacement is not captured in official crime statistics, creating a misleading picture of surveillance effectiveness. *Khan et al. (2020)* corroborated this

displacement dynamics, confirming that guardianship gaps rather than offenders' motivation are the primary driver of special crime concentration Kasarani.

The finding further indicates that motivated offenders are not uniformly deterred even within monitored zones. Where corruption enables traffic offenders to bypass enforcement consequences-as Kirui (2024) documented-the surveillance system functions as a guardian in form but not in practice. Offenders learn that detection does not reliably lead to sanction, which erodes the deterrent logic on which RAT-based surveillance justification depends. This finding reveals that RAT's guardianship element must be understood not merely as physical presence of surveillance technology, but as the credible, consistent and corruption free capacity to convert detection into consequences.

According to this study, officers at the IC3 receive reports when a crime has been committed; either anonymously, through media reports, real-time digital systems or field officers. They then filter and relay this information to respective police command units with appropriate jurisdiction. This facilitates more efficient allocation of police resources to where they are actively needed as Mwangi and Omboto (2021) also noted. Kirui (2024) also highlighted the contribution of real-time surveillance in reducing road carnages and traffic offences, although his study pointed out that in the recent years corruption from police and Safety officers have enabled traffic offenders to bypass the justice system and brought back road carnages.

Gichohi et al (2023) studied crime hot spot mapping using geospatial technology incorporated into surveillance systems where findings indicated that the incorporation of real-time surveillance systems and other software like geo-maps, AI and face or voice recognition would bring crime resolution at the top, findings corroborated by the study of Khan et al (2020) and Owino (2021). This study, however, finds the possibility of this being in motion in Kenya as political publicity since there exists a wide gap between theoretical potential of such systems and their operational reality. There also exists unaddressed tension between surveillance laws and the fundamental human rights and political freedoms (Roberts et al, 2021), and the issue of how personal data is ethically consumed (Simlai & Sandbrook, 2021). These concerns were also raised in the study.

Other challenges in the implementation of real-time surveillance systems that the study identified included large data volumes that must be filtered in the control center, poor image and information quality, limited cooperation from witnesses and internet connectivity and electricity issues in some parts of the country. These challenges echo the broader concerns raised about the effectiveness of real-time surveillance systems by Khan et al (2020), that while real-time surveillance reduced crime in monitored areas, it often displaced crime to unmonitored areas, a phenomenon not often captured in crime statistics. The findings also noted that despite these systems being in place, police follow-ups are often needed, and this means that surveillance technology cannot be a stand-alone substitute for comprehensive policing strategies, necessitating a hybrid model of policing, rather than complete digital transformation.

The use of real-time surveillance systems for crime detection and response is a highly adopted mode of crime deterrence in Kenya. The use of CCTV cameras, ANPR assists and other real-time surveillance software is gaining recognition in Kenya at an accelerated rate (Kirui, 2024). The study findings indicate that organizations and businesses are adopting these technologies to deter crime, especially in urban areas, busy and crime prone suburbs also use surveillance technology to prevent crime. In more advanced nations, real-time footage from neighboring businesses and homes have aided the police in apprehending hardcore criminals in crime prone city centers where most often, these crimes are captured on live cameras, as they occur, and law enforcement officers can respond swiftly (Khan et al, 2020). These similarities in application indicate that footage from real-time cameras can be used as essential and reliable pieces of evidence in investigation processes.

Real-time surveillance systems, according to this study, have a future in the Kenyan policing in as far as crime detection and response is concerned, although it's potential has not been fully harnessed. Although the role of the IC3 in general crime detection has been blurred and only visible in traffic crime management, the large data volume requires advanced data analytics tools to offer rapid real-time data analysis. Automation of surveillance cameras in public places to police command centers is essential for expedited crime response. Sustainable funding, especially for installation and maintenance of these systems, is a crucial step towards full implementation.

5.2.3 Influence of Digital Occurrence Books on Crime Detection and Response

The final objective of the study was to evaluate the influence of digital OBs on crime detection and response. Digital OBs are parts of digital data management systems (DDMS) which *Atlam et al (2024)* defined as procedures and technologies involved in the collection, storage, processing and analysis of data. The findings revealed a pronounced awareness deficit, where most of the population in Kasarani have no knowledge of digital occurrence books. This limited knowledge is particularly alarming given that Kasarani police station, in Kenya was the site of digital occurrence books in 2019 (Standard Media). This substantial awareness gap, six years on after its inception, indicates significant challenges in technology dissemination, training and communication within law enforcement organizational structures.

The findings indicate that no single police station maintains occurrence books in an exclusively digital format, despite policy-level commitments. Most stations continue utilizing manual OB entries, a pattern that contradicts official narratives of digital transformation frequently presented in official government communication. This persistence in the use of manual OBs reflects challenges commonly encountered by developing nations attempting digital transitions as presented in *Nte et al.'s (2020)* study of Nigeria. The study findings further reveal that even in urban areas like Kasarani where there exist better infrastructure and amenities, full implementation of digital OBs remain elusive.

Despite being a relatively new and unfamiliar methodology to most respondents, those with knowledge of or experience with digital OBs agreed that these systems ensured data accuracy and completeness of crime reports. Legodi and Dikotla (2022) identified comparable benefits for digital OBs including minimizing errors, facilitated record access and strengthened police-judicial relations. The perceived effectiveness of digital OBs even among those with limited exposure suggests that where implementation has occurred, the benefits are sufficient to generate positive assessment.

Findings indicated that while public perception assumes a purely digital case management system existence, this can only materialize if all police stations adopt digital OBs and digital reporting methodologies comprehensively. It was recorded that substantial technological infrastructure is needed for the maintenance of digital OBs

and resource mobilization would be needed to ensure success. Furthermore, for better data retrieval, these digital reports would need to pass through a central command center like the IC3 before being deployed to different police units. Nhan (2024) acknowledged the effectiveness of these centers in improving situational awareness, speeding up investigations and improving collaboration opportunities among police departments.

Digital occurrence books are a promising strategy in dealing with case backlogs in the judicial system through law enforcement case trackers (Legodi & Dikotla, 2022). The judiciary has collaborated with the police in developing e-kiosk, a platform that offers easy case tracking. If this system was backed up by digital case registration and recording, cases of delays in investigations documented by Kirui (2024) would be eliminated. Maina (2020) similarly noted that digital OBs enhance accountability and traceability because records created are electronic and user logins leave a trace thereby minimizing cases of tampering. However, the study notes that realizing the full potential of these mechanisms would only be possible if integrated with other digital reporting systems, evidence management platforms and case tracking tools, which in Kenya is still aspirational rather than operational.

Rogers (2003) in his DOI theory argued that there existed some factors that determined whether an organization would adopt a new technology; the degree to which the new technology is perceived to be better than the existing technology, how well the new technology aligns with an organization's values, needs and practices, the complexity of the technology, the ability to experiment with the technology on a limited basis and finally the benefits of the technology as seen by others. This theory is in line with the findings of this study as communicated by some respondents. They said that the police force in Kenya is one of the most traditional institutions in the country. The police training academies offer more military and combat training than technological skills needed to ensure all officers are equipped in handling and recording cases digitally, this means that additional resources need to be channeled towards training and capacity building for police officers.

Applying RAT to digital OB findings exposes a guardianship vacuum at the institutional level. While mobile apps and surveillance systems represent frontline guardianship mechanisms, digital OBs constitute the backend guardianship

infrastructure-the system through which evidence is recorded, cases are tracked, and offenders are prosecuted. The absence of fully digitalized OBs therefore has a compounding RAT implication: even where motivated offenders are detected through surveillance or reported through mobile apps, the absence of integrated, accurate, and tamper-resistant digital records weakens the chain of custodial guardianship needed for successful prosecution. Motivated offenders who understand the frangibility of Manual recording systems-susceptibility to tampering, loss, or delay-rationally calculate that detection alone does not guarantee consequence, thereby preserving their willingness to offend.

Victims who have previously experienced delays, lost records, or inconclusive investigations due to poor record-keeping are less likely to report future crimes, reducing the flow of intelligence that guardians depend on to identify patterns and deploy resources effectively. This withdrawal of victims' participation further empowers motivated offenders, who benefit from the reduced visibility that poor institutional recording created. The findings thus illustrate that RAT's guardianship element operates across multiple tiers; physical deterrence, rapid response, and institutional record integrity-and that a failure at any tier compromises the entire guardianship chain.

If explained in the argument of DOI theory proponents, the experimental part of digital inception was done in Kasarani in 2019 (Standard Media), but still digital OBs have not taken footing in the region. This might be due to the complexity of such systems for Kenyan law enforcement officers, or that the needs and practices of the police force still do not align with this new technology. Evidently from the findings, public perception on the benefits of digital OBs is overwhelmingly positive.

Kirui (2024) maintains that digital OBs help in clearing cases easily through elimination of delays during investigations and in optimal resource distribution. However, this is only achievable through multi-agency coordination and cooperation and a big data analytics tool for the large volumes of data recorded, and comprehensive implementation of digital OB. The small percentage of stations employing hybrid method of recording cases coupled with the absence of station exclusively adopting digital occurrence books indicate that factors such as resource constraint, training gaps or organizational resistance still limit expansion and implementation. These findings

have illuminated a gap in Rogers' (2003) DOI theory that focuses on adoption success while neglecting implementation failures and non-adoption.

A good percentage of people cited user-friendliness meaning usability concerns are addressed although the equal number of neutral and respondents citing complexities indicate room for improvement. Digital OBs also are not immune to tampering. These systems, just like any other digital platform, are vulnerable to cyber-attacks and criminals can gain entry and hold an entire police system for ransom or sell their secrets in the black market.

Digital occurrence books have been launched in Kenya, but they are yet to be implemented by the law enforcement in their command centers. Although Crime reports are submitted to the different police centers electronically sometimes by field officers and the members of the public, Kenyan law enforcement is yet to embrace electronic recording of occurrences and incidents. The potential benefits are enticing but the resources and technical know-how needed for full-fledged implementation is something that needs rethinking. The future of investigation and faster crime response is in full-fledged digitization of police records.

5.3 Summary of Main Findings

The general objective of the study was to examine digitization of police reporting systems on crime detection and response. The first objective focused on mobile reporting systems and Apps, and it is evident that knowledge of such systems is average with usage patterns remaining highly inconsistent. This implies that although most people are cognizant of the existence of mobile platforms for reporting crime, the police and law enforcers are still adamant in relying on such sources for information related to crime. They claim that it is hard to filter real-from AI generated information and that the large data transmitted is hard to analyze meaning that there is still over-reliance on crimes reported by walk-in victims rather than through online platforms. The police in Kenya therefore are more likely to respond to crimes where the victims walked to the station to report rather than those reported online especially anonymously.

Assessed against RAT's three elements, findings on mobile reporting apps reveal that theoretically strengthens the capable guardian role-by acceleration alert transmission, enabling anonymous reporting, and supporting hotspot mapping-institutional failures prevent this potential from being realized. Motivated offenders are

not effectively deterred because selective police deployment and mistrust of digital information mean that the guardians' response is unreliable. Suitable targets therefore remain exposed despite the existence of reporting infrastructure. The first objective thus partially supports RAT: the guardian mechanism exists in digital form but fails to achieve the operational consistency required to disrupt the RAT convergence that enables crime.

The second objective focused on impact of real-time digital surveillance on crime detection and response. Findings indicate that most people are familiar with these systems as they have become part of daily guardians of crime at home, work and public places. Their use, however, for detection and response to crime are limited as they are currently majorly used in traffic offences through integration with ANPR assists and in detection and response to public order crimes. These systems also require integration with other software such as big data analytics and facial recognition. Their use is also dependent on the availability of electricity and internet connectivity, a factor that makes them geographically limited to areas with such infrastructure. Digital OBs represent a foundational element of digital crime reporting infrastructure with demonstrated benefits in record accuracy, data accessibility and crime trend analysis.

The findings strongly support both diffusion of innovation theory since the adoption of surveillance systems has transformed aspects of policing by improving monitoring and enhancing the ability to detect offences, and routine activity theory as evident in the prominent use of surveillance systems in detecting and deterring crime. Technology alone, however, was found to be insufficient as other policy aspects were dependent on its implementation and sustainability.

The final objective focuses on the influence of digital OBs on crime detection and response. Findings indicated that although this technology is a leading benchmarking area in Kenya, its knowledge and use remain a relatively new concept with no single police command Centre using digital OBs exclusively for recording data, although where implemented they received a high endorsement for aiding in accuracy and completeness of reports. Issues of complexity, connectivity and data analysis still hinder full implementation with some stations recording a hybrid method. Stakeholders called for the urgent need for system integration to create a unified platform for all digital crime reporting functions.

Digital OBs represent a technological innovation that is gradually being adopted within police institutions. However, the continued reliance on hybrid systems demonstrates that the innovation diffusion process is still incomplete.

5.4 Conclusion

The study investigated the digitization of police reporting systems on crime detection and response, guided by three objectives: examining mobile reporting apps, real-time digital surveillance and digital OBs. The findings reveal a paradoxical landscape where significant technological investments and policy commitments co-exist with profound implementation deficits, creating a substantial gap between digital policing aspirations and operational realities. More troubling is that despite years of technological deployment, promised benefits like faster resolution rates, improved investigative capabilities and faster response to crime remain elusive. This disconnect between achievement and aspiration stems not from technological inadequacy but from deeper organizational and governance challenges within the law enforcement institution.

Regarding mobile reporting Apps, there is demonstrated potential to enhance specific aspects of crime detection and response, particularly crime tracking and initial response speed but not yet transformed outcomes in Kenya. It is evident that this technology exists, but awareness deficit and selective deployment prevent realization of full potential. This awareness gap is significant when contextualized against Kenya's establishment of IC3 and NCRC, which are high-profile initiatives that failed to penetrate ground-level consciousness where they are meant to be utilized. The findings confirm DOI theory prediction of an uneven technological adoption across populations through the clear divide between regular users who have adopted the use of mobile reporting apps into their daily operations, and non-users who remain disconnected from digital reporting systems.

The low public awareness and inconsistent usage patterns indicate that technological advancements alone are insufficient without comprehensive stakeholder education and capacity building. Mobile reporting apps in Kenya serve the role of accelerating initial response at a minimum thereby undermining confidence in reporters and utilizers of such platforms. Assessed through RAT's three element framework, the study's overall conclusion is that digitalization has selectively and inconsistently

strengthened the capable guardian element while leaving motivated offenders and suitable targets largely unchanged. Real-time surveillance systems function as capable guardianship in spatially limited, well-maintained, and corruption-free zones, but the displacement of crime to unmonitored areas confirms that guardianship gaps-not reductions in offender motivation-determine where crime concentrated.

Mobile reporting apps extend the reach of guardianship in principle, but institutional mistrust and selective deployment mean that the RAT convergence of offender, target and absent guardian remains intact for a substantial proportion of offences. Digital OB's where absent or incomplete compromise the institutional tier of guardianship, enabling motivated offender to rationally circulate the detection will not reliably lead to sanction. The cumulative RAT finding across all three objectives is therefore that this digital policing landscape has created a fragmented and spatially uneven guardianship system-one that detects crime in visible, high profile, and infrastructure rich contexts while leaving the majority of motivated offenders operating in environments where the capable guardian, in any meaningful operational sense, remains absent.

The third objective concludes that digital OBs suffer from the most awareness deficit despite being the most publicized police digital reporting innovation in Kenya, representing a profound organizational failure in knowledge management, technology diffusion and institutional change. The inexistence of a purely digitized OB records contradicts official narratives of digital recording transformation. There is a lack of follow-through on technology deployment initiatives and absence of monitoring mechanisms for implementation progress beyond initial pilot progress. Where deployed, digital OBs show a promising effectiveness in accuracy of records but currently in Kenya these systems function as administrative record-keeping tools rather than integrated investigative decision-support systems. There are no advanced capabilities available for mature digital data management systems such as predictive analytics, pattern recognition, automated case linking or evidence correlation. Digital OBs in Kenya have a lot of potential that is untapped and can be useful in aiding crime detection and response.

5.5 Recommendations

These recommendations are meant to address systemic implementation failures identified across awareness, training, infrastructure, integration and governance dimensions while proposing concrete pathways for converting digital policing potential into operational achievements.

5.5.1 The Government and National Police Service

Inadequate training is a primary challenge cited in this study findings necessitating the creation of a dedicated training institution focused solely on digital policing competencies with a focus on mandatory baseline and ongoing professional development courses. There should also be an integrated digital policing infrastructure such as an integrated digital crime management system that seamlessly connects all digital reporting systems into a single ecosystem, extending beyond internal police systems to the final stages of case adjudication.

To address connectivity issues, the government of Kenya should invest in robust technological infrastructure such as high-speed internet connectivity at all police stations, patrol vehicles and field operations across the country. Investment should also cover adequate computing hardware, secure servers, backup power systems and technical support infrastructure. All these, however, can only be sustainable if there is a dedicated budget allocation for such programs.

Additionally, sensitization and public awareness campaigns should be carried out either online or through other media channels before, during and after the piloting of major digitization programs. Moreover, the NPS in collaboration with the office of the Data Protection Commissioner should offer clear guidelines on how personal data and private data are going to be consumed to address ethical concerns. Police station commanders and operational leaders should also set standard operating procedures on how and when digital tools are to be utilized in specific crime scenarios and conduct frequent performance reviews.

5.5.2 Tech Providers and System Developers

Digital reporting systems in the Kenyan context should be developed with consideration for resilience and offline capabilities for continued operation during blackouts. With the kind of policing pressure especially by frontline officers and varying digital literacy levels, digital reporting systems interfaces should be simple and

user-friendly. These software packages are to be accompanied by unlimited tech and training support in critical system failures and allow for continuous user feedback.

5.5.3 Civil Society and Community

These Organizations to act as watchdogs for implementation activities across the law enforcement institution, providing accurate counter-narratives on implementation policy news while at the same time ensuring compliance with available policies, privacy protection and ethical surveillance. They should also educate the public on available digital reporting options, address safety concerns and share success stories to encourage more people to embrace these platforms. They should also help with developing channels for feedback from the consumers of these systems.

5.5.4 Future Academic Researchers and Scholars

This study simply provides a snapshot of digital policing during the current period. Future research should track the progress of digital tools in policing to prove whether current challenges are temporary or persistent over time. Future research should also track cases from initial inception to the final disposition, identifying value and bottlenecks in the use of digital tools of policing. A comparative study of other counties and even the East African context is essential to determine whether the findings in this study are regional-specific or whether they apply in a wider context, say regionally. An experimental study on training needs to evaluate training program approaches is essential to identify the skills needed for such systems and how an organization's culture affects implementation.

5.6 Areas of Further Research

Future research should investigate whether digital policing technologies are sustainable and how emerging digital frontiers like AI and data analytics influence existing digital infrastructure. Furthermore, a comparative study focused on other counties where infrastructure is limited and where there are diverse crime trends separate from those in urban settings is essential. This study noted that citizens are not aware of how their private and personal data is consumed, creating room for further studies on implications of digital policing systems on privacy and civil liberties.

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APPENDICES

APPENDIX I: Questionnaire

(Tick the response that is applicable)

Section 1: Demographic Information

1. Age:
 - Below ☒ 25
 - 25-35 ☐
 - 36-45 ☐
 - 46-55 ☐
 - Above ☒ 55
2. Gender
 - Male ☐
 - Female ☐
 - Prefer not to say ☐
 - Others ☐
3. Occupation
 - Police Officer ☐
 - Government Employee ☐
 - Private security provider ☐
 - Student ☐
 - Others (specify) ☐
4. Level of Education
 - Primary ☐
 - Secondary ☐
 - Tertiary/college ☐
 - University degree ☐
 - Postgraduate degree ☐

Section 2: Knowledge and use of digital reporting tools in police operations

5. Are you aware of the digital tools used in crime reporting in Kasarani Sub County?

- Yes ☐
- No ☐

6. Which digital reporting tools of police operations are you aware of or have interacted with? (Tick all that apply)

- Mobile Reporting Apps ☐
- Real-time digital surveillance systems (e.g. CCTVs) ☐
- Digital Occurrence Books ☐
- Others (Please specify): _____

7. How frequently do you interact with these digital tools for police crime reporting?

- Daily ☐
- Weekly ☐
- Monthly ☐
- Rarely ☐
- never ☐

8. Do you agree that there is an improvement in the effectiveness of police in detecting and responding to crime in Kasarani Sub County because of these digital tools?

- Strongly Agree ☐
- Agree ☐
- Neutral ☐
- Disagree ☐
- Strongly Disagree ☐
- ☐

9. What are some of the challenges you have experienced while using these digital tools in reporting crime? (Tick all that apply)

- Poor/ lack of internet connection ☐
- Lack of/inadequate training ☐
- Technical problems (e.g. software issues) ☐
- Inadequate/lack of resources ☐
- Others (Please specify): _____

Section 3: Digitization of mobile reporting apps on crime detection and response

10. In your view, can you agree that there has been better crime response, resolution rates and detection because of the use of mobile reporting Apps in reporting crime?

- ☐ Strongly Agree
- ☐ Agree
- ☐ Neutral
- ☐ Disagree
- ☐ Strongly Disagree

11. What benefits can you say that have come because of the use of Mobile reporting Apps in police reporting systems? (select all that apply)

- ☐ Faster detection and response to crime by police officers
- ☐ Higher resolution rates
- ☐ Improved mapping of crime hotspots
- ☐ Improved criminal tracking and apprehension
- ☐ Better inter-agency coordination and information sharing
- ☐ Better data storage, accessibility and retrieval
- ☐ Others (Please specify): _____

12. What can you say are some of the challenges to full implementation of mobile reporting apps in crime reporting? (List below)

Section 4: Digitization of Real Time Digital Surveillance Systems on Crime Detection and Response.

13. Have you ever interacted with real-time digital surveillance systems such as CCTVs?

- ☐ Yes
- ☐ No

☐ Not sure

14. In your experience, what benefits can you say that have come because of the use of such real-time Surveillance Systems? (select all that apply)

- ☐ Faster detection and response to crime by police officers
- ☐ Higher resolution rates
- ☐ Improved mapping of crime hotspots
- ☐ Improved criminal tracking, identification and apprehension
- ☐ Better inter-agency coordination and information sharing
- ☐ Better resource allocation
- ☐ Others (Please specify): _____

15. The current surveillance systems are effective in crime detection and response.

- ☐ Strongly Agree
- ☐ Agree
- ☐ Neutral
- ☐ Disagree
- ☐ Strongly Disagree
- ☐ Others (Please specify): _____

16. What challenges have you encountered while interacting with digital surveillance systems?

Please
specify _____

Section 5: Digitization of Occurrence Books on Crime Detection and Response

17. How are Occurrence books currently maintained in your station/agency?

- ☐ Manual
- ☐ Digital
- ☐ Hybrid
- ☐ Cannot say

18. Digital occurrence books are effective in the accuracy and completeness of crime reports?

- ☐ Always
- ☐ Often
- ☐ Sometimes
- ☐ Rarely
- ☐ Never

19. What can you say are some of the positive impacts of the implementation of digital occurrence books? Tick all that apply.

- ☐ Improvement in crime detection and response rates
- ☐ Improved tracking and monitoring of crime trends
- ☐ Enhanced Investigative capabilities
- ☐ Faster crime reports and easy data analysis

APPENDIX II: Interview Schedule

My name is Lavender Atieno Agwa, a student at African Nazarene pursuing a master's degree of security management and undertaking research on digitization of police reporting systems on crime detection and response in Kasarani Sub County. The responses will be anonymous and treated with utmost confidentiality.

1. Background and current state of police digitization.

- Please describe your role in the Kenyan police force and to what extent you have interacted with digital tools of police reporting systems.
- What are the current digital reporting systems and tools being used in your station?
- How are these digital reporting tools utilized daily for police operations in crime detection and response?

2. Influence on police operations

- From your interaction and observation, how have digitization efforts impacted police operations in your station?
- Do you think there is an improved crime detection and response by the police because of digitization of police reporting systems? Please explain
- Can you give examples where digital tools have been used by the police in crime response, reporting or resolution?
- What is your assessment of the overall impact of digital police reporting systems on crime detection and response in Kasarani Subcounty?

3. Barriers and Challenges

- What are some of the challenges that you have experienced while using digital reporting systems for police operations?
- In your opinion, how best can we address these challenges to ensure the full potential of digitization efforts in police reporting systems for crime detection and response are exploited?
- What are some other areas for improvement in digitization within the police operations?

4. Closing Questions

- Is there any way, in your opinion, that the government and other stakeholders can contribute to further digitization efforts in police operations?
- Would you like to add any comment regarding the topic of digitization of police reporting systems on crime detection and response in Kasarani Subcounty?

APPENDIX III: FOCUS Group Discussion Questions

1. Is it safe to say that the future of a safer Kasarani Sub County lies in the continued use of digital reporting apps in crime detection and response? Explain

2. What features or improvements would you like to see in future digital reporting systems for crime detection and response?

Please Specify _____

3. Digital reporting systems are user- friendly. Debate this assertion

4. How do you think digital occurrence books can be integrated with other digital systems for better crime detection and response? (Specify)

5. Are digital reporting tools in police operations serving their intended purpose and why (Please Explain) _____

6. What recommendations would you offer to enhance digitization of mobile reporting Apps in Kasarani Subcounty? (Please specify)

APPENDIX VII: INFORMED CONSENT LETTER

AFRICA NAZARENE UNIVERSITY

School of Graduate Studies and Research

Department of Security, Peace and Conflict Studies

P.O. Box 53067-00200, Nairobi, Kenya

Study Title	Digitization of Police Reporting Systems on Crime Detection and Response in Kasarani Sub-County, Kenya
Principal Investigator	Lavender Agwa
Supervisors	Dr. Emmy Roche Dr. Chris Zakayo Ndunda
Degree Programme	Master of Science in Governance, Peace and Security Studies
Contact	Lagwa62334@anu.ac.ke +254 7117346434

My name is Lavender Atieno Agwa, a student conducting research on the above topic purely for academic purposes.

You are requested to participate in this study because your views and experiences are important in understanding the effectiveness of digital policing systems on crime detection and response.

Your participation in this study is purely voluntary, and you are free to decline participation or withdraw from the study at any time without any penalty or negative consequences. The information you provide will be strictly confidential and will be for academic consumption only. You will remain anonymous and no responses that reveal your personal information or identity will be published.

There are no physical, financial or psychological risks involved in the study and are therefore encouraged to respond freely to the questions. The questionnaires will take approximately 20-30 minutes of your time while the interviews and focus group discussions will take a maximum of 60 minutes per session. With your permission, interviews and focus group discussion sessions will be recorded purely for transcription purposes and will be deleted after the study. You may, however, decline to be recorded during the sessions and will not be exempted from the study.

There is no monetary compensation for participating in this study. Refreshments, however, will be given to focus group discussion participants at the end of the session. The researcher appreciates the time you have taken to willingly participate in the study.

By signing below, you agree that:

- You have understood the purpose of the study.
- You have been informed of your rights as a participant.
- You voluntarily agree to participate in the study.

Participant's Consent

Participant's Name _____

Participant's Signature _____

Date _____

Researcher's Declaration

I declare and confirm that I have read and explained to the participants the purpose of the study and answered any questions asked

Researcher's Name _____

Signature _____

Date _____

APPENDIX V: INTRODUCTION LETTER

P.O.Box: 53067 – 00200
Nairobi, Kenya.
Tel: 020 252 7170/1 – 5
Email: vc@anu.ac.ke
www.anu.ac.ke

13th June, 2025

TO WHOM IT MAY CONCERN

RE: RESEARCH PERMIT: LAVENDER ATIENO AGWA STUDENT NO. 110062334

Lavender Atieno Agwa. No. is (110062334) a Bonafide postgraduate student at Africa Nazarene University in the School of Humanities and Social Sciences – Governance, Peace & Security Studies department. She is pursuing a Master’s degree in Governance, Peace & Security Studies. This program entails Coursework and Thesis. She has successfully completed coursework and defended her thesis proposal entitled:

“Influence of Digitization of Police Operations on Crime Detection and Response in Nairobi City County, Kenya”.

Any assistance accorded to her to facilitate data collection and complete her thesis will be highly appreciated.

Faithfully,



Prof. Orpha Ongiti
Dean of Postgraduate Studies & Director Institute of Research.

APPENDIX VI: NACOSTI PERMIT

 REPUBLIC OF KENYA Ref No: 473864	 NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION Date of Issue: 14/August/2025
RESEARCH LICENSE	
	
This is to Certify that Miss., Lavender Atieno Agwa of Africa Nazarene University, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Nairobi on the topic: DIGITIZATION OF POLICE REPORTING SYSTEMS ON CRIME DETECTION AND RESPONSE IN KASARANI SUB-COUNTY, NAIROBI KENYA. for the period ending : 14/August/2026.	
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APPENDIX IV: Kasarani Sub County Map



Source: Research Gate