

Unlocking the Investigative Potential: The Role of Closed-Circuit Television Footage in Combating ATM Card Fraud

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Abstract: Technological advancements have played a significant role in the investigation of crimes, particularly those linked to automated teller machine (ATM) card fraud. Accordingly, the use of closed-circuit television (CCTV) footage has become increasingly vital in assisting the South African Police Service (SAPS) in investigating, identifying and prosecuting the perpetrators of such crimes. The emergence of modern technologies has enabled the police to adapt their investigation methods by placing more emphasis on retrieval and analysis of CCTV footage. By emphasising the importance of CCTV footage and its role in investigating and preventing ATM card fraud, this article provides valuable insights into the measures that can be taken to combat this type of crime. This article highlights the significance of CCTV footage in the fight against ATM card fraud, providing an in-depth analysis of both local and international literature, as well as qualitative interviews conducted with members of the South African Police Service's Commercial Crime Investigations Unit and other relevant authorities, such as the Specialised Commercial Crime Unit prosecutors, Kenyan public prosecutors, and Kenyan police officers.

This article further acknowledges that video footage can be presented as admissible electronic evidence in a court of law during legal proceedings, provided it is authentic, relevant, and relevant to the case. Such admissibility necessitates that the video should depict the events it purports to show accurately without any tampering or alterations. The findings in this article revealed multiple advantages of CCTV footage, including its provision of crucial evidence to law enforcement agencies such as the SAPS for pursuing investigations and prosecution of perpetrators. Furthermore, the findings emphasised the deterrent and utilitarian role of CCTV installations in monitoring and preventing ATM card fraud through the cameras that offer a practical and effective method to combat organised fraudulent activities and transactions. In addition, the findings indicate that factors such as poor-quality images and blurry footage exacerbate the identification of the perpetrator.

In conclusion, the researcher contends that the study, titled "Unlocking the Investigative Potential: The Role of Closed-circuit Television Footage in Combating ATM Card Fraud", adds significantly to understanding the extent of CCTV footage utilisation by law enforcement agencies such as the SAPS in the thorough investigation of ATM card fraud cases. Furthermore, the study proposes some recommendations that can be implemented by SAPS policymakers to enhance the effectiveness and efficiency of CCTV footage in investigating ATM card fraud.

Keywords: Advanced technology, ATM card fraud, closed-circuit television, closed-circuit television footage, investigator, surveillance

Introduction

Surveillance technology has developed rapidly in the last few decades, which has had a significant impact on law enforcement and policing practices. Parker (2024:1) asserts that such rapid development has led to significant advancements in the use of surveillance, which is beneficial to both the police and the communities they serve. The use of closed-circuit television (CCTV) cameras has become an essential tool for investigating crimes, as these cameras monitor both the interior and exterior environs of a property and also transmit signals to a

display and system recorder for secure storage (Advanced Overwatch, 2021:1). When a crime is committed, investigators first view the CCTV footage in order to identify any leads that may assist in identifying the perpetrators.

Advanced Overwatch (2021:1) notes that many countries globally now utilise CCTV surveillance to combat crime. A professionally installed and maintained CCTV camera system is often invaluable when a crime incident is reported to the authorities. Therefore, the CCTV video footage serves as an essential mechanism to fight crime by assisting during investigation. The footage is used to locate or verify the identity of the perpetrator of the crime. Piza, Welsh, Farrington and Thomas (2019:3) regard CCTV as a type of situational crime prevention (SCP) strategy that increases levels of formal surveillance within a target area. In the latter regard, the SCP focuses on preventing crime by reducing criminal opportunities and increasing the perceived risk of offending by modifying the physical environment (Piza et al., 2019:3).

Ashby (2017:441) highlights the valuable role that CCTV video footage can play in criminal investigations by providing visual evidence. Strom (2017:1) asserts that there has been a notable increase in reported ATM card fraud cases, which has led the banking industry's development and implementation of stronger security measures. As a result, banks are increasingly utilising surveillance cameras to promote safety, track individuals wearing masks, and monitor crowd sizes. These counter measures have led to substantial expansion in the surveillance camera market (Everyone's Internet News (EIN) Presswire, 2023:1). Notably, both the implementation of CCTV cameras at ATMs and the establishment of an efficient video management system (VMS) have emerged as a proactive strategy to address the escalating challenges posed by ATM card fraud. The ISARSOFT (2023:1) refers to VMS as a software-based platform that manages and controls video surveillance cameras, recording devices, and other security components typically used by businesses, governments, and other organisations that require large-scale surveillance and security monitoring. The banking industry should opt for a video surveillance solution that integrates high-definition video with detection analytics and transaction data, including reporting capabilities in order to monitor ATMs more effectively through more expeditious identification of anomalies (Strom, 2017:1). Moreover, clear CCTV video footage from a security camera designed explicitly for ATMs can assist in resolving incidents of ATM bank card fraud, as noted by Splain (2021:1).

In summary, this article emphasises the significance of CCTV video footage during ATM card fraud investigations. The article clarifies the importance of improving investigative skills and abilities for investigating officers and bank investigators in South Africa in their quest to fight crime more effectively. The integration of CCTV cameras with a robust VMS system has been identified as a proactive approach to tackle the evolving challenges of ATM card fraud. Accordingly, CCTV technology such as high-definition video surveillance and detection analytics is essential for preventing and solving crimes. This technology is crucial for keeping abreast of the latest technological advancements in the field.

Research Methodology

A qualitative exploratory approach was adopted in this study as the primary research method, emphasising participants' perspectives on the significance of CCTV video footage in investigating ATM card fraud. The core focus of this article premises on examining the importance of CCTV video footage in the context of ATM card fraud. The pertinent data of the study was derived from an extensive review of literature and documents, coupled with qualitative interviews with seventeen SAPS commercial crime investigating officers in the Western Cape (Sample A); four (4) Specialised Commercial Crime Unit prosecutors (Sample B); one (1) member from the Kenyan Police (Sample C); and two (2) Kenyan public prosecutors (Sample D) as part of a PhD thesis titled: "An exploration of organised automated teller machine bank card fraud in the Western Cape". Additionally, the interviews directly address the research aim, objectives, and questions in alignment with Creswell's (2014:116) approach.

Subsequently, the study employed triangulation through multiple data collection methods and perspectives, which enhanced the credibility and reliability of the findings (Denscombe, 2014:154; Silverman, 2014:90). Additionally, the quality of the triangulated data was ensured by considering and subsequently incorporating various approaches and viewpoints on the research topic and its associated questions (Flick, 2011:186; Kelly, 2016:287). During the data collection phase, a preliminary analysis was performed to categorise and compare data, as well as identifying patterns and distinctions in the collected information (Brynard, Hanekom, & Brynard, 2014:62; Marshall and Rossman, 2016:166). Data interpretation was then conducted to draw meaningful inferences from the analysed data (Kelly, 2016:326; Caulfield, 2019:5).

Ethical clearance was obtained from the University of South Africa's (Unisa's) Research Ethics Committee (UREC) with ERC Reference No. ST54, and further permission to conduct the research was granted by the SAPS. Informed consent was obtained from all participants, who were provided with information sheets detailing the study. The article delves into the legal procedures for obtaining CCTV video footage for investigation by exploring the legislative framework related to such footage. Therefore, the author discusses the significance of CCTV footage in combating ATM card fraud in order to address the research topic and achieve the article's aims.

Theoretical and Conceptual Background

This article delves into the significance of utilising CCTV footage as a powerful tool to combat ATM card fraud. In that regard, the article explores how CCTV cameras can be instrumental in identifying perpetrators involved in fraudulent activities and also provides valuable evidence to law enforcement agencies. The article further examines several case studies that demonstrate the role CCTV footage in the apprehension of criminals and prevention of fraudulent activities. By shedding light on the importance of CCTV footage in combating ATM card fraud, this article also contributes to investigators' understanding of ATM card fraud and the significance of surveillance technology in ensuring effective investigation during the investigation of ATM card fraud.

Automated teller machine (ATM) card fraud poses a significant threat to banking security, with perpetrators employing various deceptive strategies to illicitly obtain the personal identification numbers of their victims (PINs) and withdraw cash from their accounts. The Banking Association South Africa (BASA) informs that the common methods used by fraudsters include ATM card skimming, card swapping, shoulder surfing, and trapping, all of which enable the perpetrators to exploit unsuspecting ATM users (BASA, 2019:3). This trend is reflected in the increasing financial losses reported by the South African Banking Risk Information Centre (SABRIC), indicating a pressing concern for the banking industry (SABRIC, 2020:2). Criminals often target vulnerable individuals, such as the elderly and those unfamiliar with ATM operations, at specific locations, such as shopping centres and petrol stations where security measures may be lacking. Argun and Baglar (2016:1189) contextualise this behaviour within the routine activity theory, which suggests that crimes occur where regular social interactions occur. To combat such fraud, witness identification plays a crucial role, involving enquiries at the crime scene and the use of CCTV footage to locate potential witnesses (Albright, 2017:1). Leveraging the media is also helpful insofar as obtaining information from the public to assist in investigations. Thus, understanding the modus operandi of ATM fraud is vital for identifying vulnerable targets and employing effective witness identification strategies to combat this pervasive threat to financial security effectively.

Closed-circuit television as the mechanism for crime reduction

The increasing complexity of criminal activities and the high crime rates in South Africa has engendered the widespread belief that CCTV video footage could be a helpful tool for detection and deterrence of criminal activities. Basimanyane and Gandhi (2019:2) acknowledge that CCTV cameras are considered some of the most effective crime prevention and detection tools. The Private Security Industry Regulatory Authority (PSIRA) (2019:22) reports that their clients consider CCTV to be the third most important security equipment sought after, with 55.8% of clients requesting its installation at their business premises. These cameras are typically used in public and private spaces such as roads, highways, malls, shopping centres, parks, bus stops, airports, warehouses, and along railway lines, shops, fuel service stations and ATMs, gated communities, community neighbourhoods, schools, and private homes (Basimanyane & Gandhi, 2019:2).

Numerous studies have highlighted the importance of CCTV surveillance systems for law enforcement agencies (Ashby, 2017:441; Morgan, 2019:2; Dowling, Morgan, Gannoni & Jorna, 2019:12). These systems have demonstrably contributed to the improvement of response times during emergencies, providing visual evidence for criminal investigations, and even leading to early guilty pleas from offenders (Ashby, 2017:451). The primary benefit of CCTV resides in its potential to prevent criminal activity by acting as a visual deterrent since the mere presence of CCTV cameras can influence an offender's decision-making process, thereby preventing them from committing a crime (Piza et al., 2019:3). Research has outlined multiple mechanisms through which CCTV cameras contribute to crime prevention, including increases in offender apprehension, natural surveillance, publicity, and citizen awareness (Welsh, Farrington, & Taheri, 2015:111). The presence of video surveillance can increase the perceived likelihood of detection and punishment, rendering it less tempting for potential offenders to act. In the event of an investigation into a crime where CCTV footage is available, the police are able to obtain pertinent

footage of criminal activity captured by CCTV, which is then provided to expert image analysts for comparison of the person of interest and the sought suspect (Seckinera, Malletta, Rouxa, Meuwlyc & Maynard 2018:78).

The United Kingdom (UK) and other economically developed nations have found CCTV to be an incredibly useful tool that has been instrumental in reducing crime rates through prevention and detection measures that enhance the tracking-down of criminals (Hanafi, 2020:1). The CCTV cameras serve multiple purposes, such as enhancing the ability to prevent and deter crime, providing evidence for investigations and prosecutions, and also allowing for remote surveillance in real-time. It is clear that these features situate CCTV as a valuable resource for promoting safety and security in public spaces (Democratic Control of Armed Forces [DCAF], 2021:1). Moreover, CCTV surveillance systems have the potential to enhance public safety and reduce criminal activity in society. In the ensuing discussion, the researcher outlines the efficacy of CCTV footage in addressing ATM card fraud.

The efficacy of closed-circuit television footage in addressing ATM Card Fraud

The growth of CCTV surveillance in South Africa began after 1994 as a mechanism to promote safety and security (Urban Safety, 2022:4 in Minnaar, 2007:133). Initially, CCTV in South Africa was developed to prevent crime in public and private places such as banks and shopping centres. Nowadays, CCTV is used to some extended degree in all major South African cities, particularly in Johannesburg and Cape Town (Urban Safety, 2022:1). In that regard, Unifier (2023:1) adds that CCTV surveillance systems have advanced from simple observation tools to sophisticated surveillance systems that significantly enhance the safety of individuals, businesses, and entire cities. Unsurprisingly, CCTV has been an attractive crime prevention tool for local municipality authorities, given the minimal policing workforce over which they have direct control and persistently high levels of urban crime (Lamb, 2023:2).

According to Helderberg, Katz and Choate (2017:627) and the Geneva Centre for Security Sector Governance (2021:1), one of the benefits of CCTV surveillance is that it can promote police accountability and transparency by providing an objective and unbiased record of incidents, which ensures that the actions of police officials are open to scrutiny and review. The researcher believes that police accountability and transparency can lead to better understanding of an incident and promoting trust between the police and the community. Additionally, it is believed that CCTV surveillance can promote a positive relationship between law enforcement and increase the public's perception of police legitimacy, competence and procedural justice, thereby promoting greater cooperation and trust (Hedberg et al., 2017:627).

Various studies have demonstrated the efficacy of CCTV footage as a tool for supporting law enforcement investigations in different forms of crime (Ashby, 2017:441). According to Ashby (2017:443), CCTV footage is highly useful in resolving crimes, thereby significantly enhancing the likelihood of successful investigations. In addition, Seckinera et al. (2018:78) have observed that CCTV footage is potentially an invaluable resource in investigations or intelligence gathering, particularly for cases in which tracking the movements of a perpetrator could lead to further evidence. The critical advantage of CCTV lies in its continuous recording capability and widespread availability despite the quality limitations (Seckinera et al., 2018:78). The continued technological improvements and extant prevalence of CCTV cameras is an indication that CCTV is expected to provide even greater benefits to modern society (Seckinera et al., 2018:78). Despite the effectiveness of CCTV video footage in many cases, scientific validation in the courtroom is still essential to establish its credibility beyond doubt (Seckinera et al., 2018:78).

The utilitarian value of video footage varies in terms of the type of crime committed; therefore, CCTV video footage can be a meaningful tool for criminal investigation (Ashby, 2017:443). Additionally, the availability of CCTV footage is an essential investigation factor in decisions concerning the amount of time spent on an investigation, rather than simply being the product of investigative efforts (Ashby, 2017:443). Cases in which CCTV footage is requested but not provided, are significantly less likely to be solved than cases in which CCTV footage is not asked for (Dowling et al., 2019:12). Access to video footage of an incident may prompt further investigation, while inaccessible video footage may encourage officers to make further enquiries regarding the crime committed (Dowling et al., 2019:12).

The CCTV footage serves multiple purposes in public safety, including preventing crime, detecting offences, improving emergency responses, enhancing and managing public safety in public spaces, as well as addressing public concerns by reducing the fear of crime (Ashby, 2017:443). As such, the utilisation of CCTV cameras in public areas is a widely used measure to deter criminal activity and monitor potential incidents in high-risk locations (Ashby, 2017:443). This approach is expected to directly impact on crime by facilitating prompt response and

expediting the investigation process. As ATM card fraud continues to be a growing concern, banks also continue to enhance their security measures in order to mitigate the rise of ATM card fraud (Splain, 2021:1). This type of fraud could involve a range of approaches, from the use of pinhole cameras and skimming devices to stealing user information and even confrontation with individuals who have just withdrawn cash (Worrall: 2019:1). The SABRIC (2019:1) has identified various contributing factors to ATM card fraud, such as card swapping, skimming, cash and card trapping, pin capturing, as well as transaction reversal fraud (TRF). In this regard, banks have implemented innovative and effective security measures such as intelligent video systems to combat the menace of ATM bank card fraud (Worrall: 2019:1; Scati, 2023:1).

Kim, Kim, and Pan (2021:2) described an intelligent video surveillance system as a system that aims to detect abnormal activities before crimes occur. This system can detect abnormal situations in videos without the need for human monitoring of the CCTV itself. The purpose of such a system is to ensure that potential criminal activities can be identified, and that notification is sent in advance to prevent any damage from occurring or recurring. As Worrall (2019:1) notes, many ATMs are now equipped with CCTV cameras that allow banks to monitor footage, which leads to the criminals' prosecution on the strength of the digitally monitored evidence. To that effect, Splain (2021:1) explains that the CCTV cameras installed at ATMs serve as an early warning system to detect any suspicious activity.

The use of CCTV systems has become an increasingly popular tool in the fight against ATM card fraud. According to a study conducted by Morgan and Dowling in 2019, CCTV cameras are strategically placed in the business and residential premises to assist investigators in solving cases. In addition, it is crucial to ensure that police have timely access to high-quality footage (Morgan & Dowling, 2019:13). The latter could pose a challenge, considering that the need for timely footage ought to be balanced with the capacity of the camera operators and the quality of the device in use. Furthermore, there are significant costs associated with maintaining and managing CCTV systems, which must also be taken into consideration. Despite these challenges, the presence of CCTV footage can deter potential offenders, as it increases the likelihood of apprehension and subsequent punishment (Baumann & Murray, 2021:2). Recent advancements in CCTV technology such as artificial intelligence (AI) and video analytics (VA) have rendered this technology a valuable tool for investigators worldwide (Leka & Ndoj, 2023:23).

Artificial intelligence uses deep learning (DL) algorithms to perform video analytics and extract metadata such as human face, human body, and machine metadata (Leka & Ndoj, 2023:23). These functions can signal alarms during live recording and could be used for checking recordings later. Metadata recognition determines the presence of objects in an image or video, and records their position, dimensions, characteristics, and models. As noted in a study by Javed, Hussain, and Maitla in 2021, the footage captured by CCTV cameras is particularly useful in thwarting crimes and gathering evidence against offenders. The footage recorded by CCTV cameras holds substantial weight in court as evidence against individuals involved in criminal activities. Overall, the strategic placement and proper management of CCTV systems could play a vital role in reducing crime and aiding law enforcement in solving cases (Javed, Hussain & Maitla, 2021:179).

In the context of CCTV surveillance at ATMs, the responsibility for managing such surveillance typically rests with the business entities hosting the ATMs, whether they are malls or banks. The availability of CCTV footage depends on the security protocols established by each specific bank or mall. Some bank institutions retain CCTV footage for about 90 days, while malls may have their own policy on security footage (Nedbank, 2023:1). In the event of ATM card fraud occurring within 90 days, the bank will make every effort to retrieve the CCTV footage for further investigation purposes (Nedbank, 2023:1). However, accessing the footage could be complex, and the footage quality may vary, depending on the camera's location and lighting conditions. Therefore, acting quickly and reporting any ATM card fraud to the bank is critical to maximise the chances of retrieving valuable CCTV footage. Ashby (2017:445) highlights the significance of CCTV video footage in ATM card fraud investigations by detailing its potential impact. Figure 1 below is a depiction of the process according to which CCTV footage could be both accessible and invaluable to such investigations.

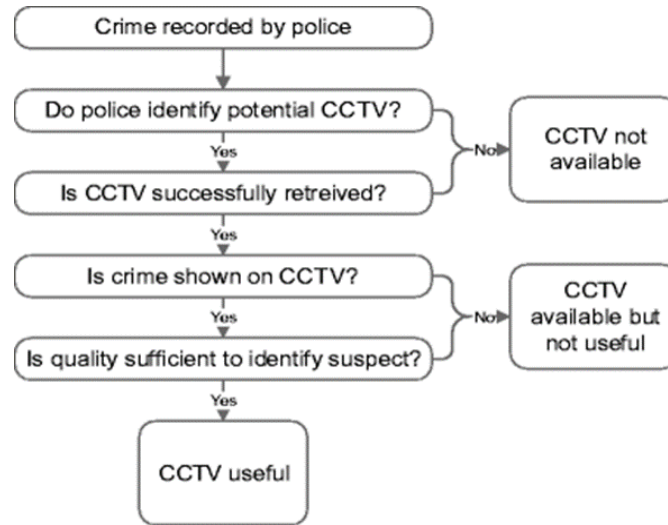


Figure 1: The process for facilitating CCTV availability and usefulness to an investigation
(Source: Ashby, 2017:445)

Figure 1 above depicts the three stages that characterise the availability and effectiveness of CCTV video footage. In the first stage, investigators may face obstacles in accessing the footage due to technical constraints or lack of effort (Ashby, 2017:445). While it may be obtainable, the poor quality diminishes the investigative value of the CCTV footage in the second stage. Finally, in the third stage, accessible and high-quality CCTV footage proves indispensable to the investigation. Additionally, Ashby (2017:445) suggests crucial steps in effectively utilising CCTV footage, encompassing obtaining the incident footage, reviewing such footage for suspect identification and location, and subsequently presenting the evidence in court.

Joubert (2016:1) underscores the importance of CCTV video footage in ATM card fraud investigations through a case study from Mpumalanga, where such footage proved pivotal in identifying perpetrators. In the recorded footage, three suspected bank card swappers were seen waiting at an ATM located within the premises of a filling station. One individual appears to use a nearby ATM, while another keeps watch from a distance (Joubert, 2016:1). When a customer arrived at the ATM, the first individual approaches, claiming to have left a receipt in the ATM and offers to assist with her transaction. As he manoeuvres around her, he covertly retrieves her card from the ATM without her noticing. A proper analysis and investigation of such incidences of ATM card fraud would be rendered difficult without access to CCTV evidence (Sutterfield, 2022:1). This highlights the potential significance of CCTV recordings in identifying perpetrators in such cases.

A recent report in the Cape Times News (2022:1) highlighted the pivotal role of CCTV video footage in the apprehension of four ATM scammers in Cape Town with the use of CCTV cameras that significantly contributed to the successful arrest of these individuals, who were found in possession of multiple ATM bank cards. The commendation of these arrests by the City of Cape Town's Mayoral member for Safety and Security accentuates the importance of CCTV footage as a security measure for facilitating the identification and location of perpetrators at the scene (Cape Times News, 2022:1). Additionally, the above-cited mayoral member emphasised that the information from the CCTV footage expedited the actions of law enforcement agencies, ultimately leading to the apprehension of the culprits (Cape Times News, 2022:1). Sutterfield (2022:1) asserts that without CCTV video footage, investigating ATM card fraud could be extended to 90 days or longer. An analysis of the participants' responses showed that their perspectives were shaped by their professional experiences. Comparisons with existing literature corroborated these views concerning the effectiveness of CCTV footage in addressing ATM card fraud (Ashby, 2017:443; Javed, Hussain & Maitla, 2021:179).

Challenges associated with closed-circuit surveillance systems

Overall, the use of CCTV footage is highly valuable as it enhances security and public safety (Unifier, 2023:1). However, several significant challenges need to be addressed in order to ensure its effective use. These challenges include tampering and poor-quality footage, both of which render the identification of the perpetrator difficult (Worgul, 2017:1). In the view of Jones (2023:1), various challenges posed by CCTV footage include poor image quality, limited details capture, and susceptibility to manipulation. As noted by Zhang (2023:1), CCTV surveillance tampering can greatly affect the functionality of security cameras through obstruction of the camera's field of view or rendering it useless, resulting in unclear footage of any incidents. Consequently, investigations could be impeded, which poses challenges in identifying and capturing perpetrators.

One of the most problematic challenges for both the defence and prosecution relates to poor-quality images, in view of the fact that prosecutors often engage with experts to identify suspects from blurry footage using facial and body mapping techniques when addressing this problem of poor-quality images (Nedim, 2014:1). Facial and body mapping is a technique that involves the creation of a digital 3D model of an individual's face or body. This process is typically achieved through the use of expert image analysts, such as engineers, artists, and physical anthropologists (Edmond & Wortley (2016:478). According to Nedim (2014:1), cameras that take images intermittently may fail to spot an offender, which can lead to the defence establishing reasonable doubt regarding the involvement of the particular offender in the commission of a crime. In light of the statement of Nedim (2014:1) regarding facial and body mapping, Gonzalez (2022:1) mentions that the challenges concerning CCTV footage could result in the inadmissibility of evidence during trial. In the event that CCTV footage is obtained unlawfully, the absence of the chain custody record indicating how CCTV footage evidence was preserved in its original form, this could result in the inadmissibility of CCTV footage during court proceedings (Gonzalez, 2022:1). The chain of custody involves meticulous documentation of the details of evidence for the purpose of preventing any alterations or tampering with the original evidential materials (Bohnen, 2022:1). Such misconduct induced by alterations or tampering may be intentional, aimed at influencing a desired outcome, or unintentional. Any modifications could compromise the integrity of the original evidence and the entire investigation (Bohnen, 2022:1). Therefore, the preservation of evidence necessitates that the chain of custody document should commence from the very first time that evidence is obtained or handled, and should be continuous throughout every stage of the process of examination, analysis, reporting and eventual presentation of the evidence in court (Bohnen, 2022:1).

The maintenance of an unbroken chain of custody documentation is a critical aspect of the handling of evidence. Recording each step in the chain of custody is essential for guaranteeing the non-compromisation of the evidence's value, and its reliability in legal proceedings (Bohnen, 2022:1). Therefore, the chain of custody document serves as a record of the evidence's history and the individuals who handled it. As such, any discrepancies or errors in the document could have a significant impact on the admissibility of the evidence in court (Badiye, Kapoor & Menezes, 2022:1). It is particularly in the latter regard that an improper chain of custody of evidence could cause several negative outcomes, including the inadmissibility and unreliability of evidence and the consequent difficulty of proving the matter to the standard required before the court (Badiye et al., 2022:1).

Furthermore, casting any doubt over the authenticity and reliability of one piece of evidence could potentially have a negative effect on other pieces of evidence. Moreover, mistakes in the collection, handling, and utilisation of video evidence could also cause serious difficulties and challenges for criminal investigations, rendering evidence unreliable during investigations (Badiye et al., 2022:1). Casting any doubt over the authenticity and reliability of one piece of evidence can potentially have a negative effect on other pieces of evidence (Badiye et al., 2022:1). Furthermore, reviewing and analysing hours of footage is time-consuming and requires significant resources (Jones, 2023:1). Van Wyk and Van Heerden (2023:1) state that CCTV video footage can be admissible in court, provided that witnesses are able to ascertain its content, explain its relevance, and act as experts regarding its authenticity. However, ensuring the information's immutability is increasingly challenging. As Mesnik (2023:1) notes, preserving the integrity of digital information is crucial for digital security. However, verification of its integrity could be problematic, because persons with malicious intents could manipulate evidence if it is not appropriately secured. Therefore, digital information must be safeguarded from unauthorized access, modification, or deletion. Failure to do so may lead to severe consequences, particularly in legal and financial matters (Mesnik, 2023:1).

Establishing robust security protocols and using advanced technologies to safeguard digital information is critical. However, while CCTV footage evidence is admissible if it is relevant, authentic, and subject to interpretation by a witness, the courts have cautioned against the uncritical use of such video evidence. Given the inherent risks associated with CCTV footage, judges may exercise caution in admitting and relying on video evidence. Therefore,

it is crucial to handle and preserve CCTV evidence properly in order to prove its authenticity and relevance during court proceedings. These challenges emphasise the need for a careful and thorough approach to usage of CCTV footage during criminal investigations. Additionally, it is also note-worthy that the use of CCTV footage may infringe on the privacy of individuals who were not involved in the incident, leading to legal complications (Jones, 2023:1).

Legislation relating to the use of CCTV surveillance systems

While the utility of CCTV video footage is acknowledged, upholding everyone's fundamental right to privacy is still imperative during the installation and use of surveillance systems (Javed, et al. (2021:176). According to the European Commission on Human Rights (ECHR) regulations, installing CCTV cameras in public areas does not necessarily breach the right to privacy in the absence of any visual data being recorded or stored (Javed et al., 2021:179). However, the right to privacy may be at risk when the footage obtained from CCTV cameras is publicly available and causes foreseeable injury or interferes with privacy rights (Mshanga, 2023:1). Therefore, the ECHR requires CCTV installers to safeguard the data captured by these systems and regulate the guidelines for controlling the collection and usage of personal data (Javed et al., (2021:179). This means that installers of CCTV systems should ensure that these systems are designed, installed, and operated in a manner that is compliant with respecting the privacy rights of individuals, while also providing effective surveillance in order to prevent and solve crimes.

Importantly, video footage and audio recordings of individuals are considered personal data, which applies to any CCTV system in a public setting (Lewis, 2021:1). However, the use of CCTV cameras has raised privacy concerns, prompting public authorities to introduce regulations aimed at balancing personal privacy rights with the need for public and business security (Connors, 2018:1). In the United Kingdom, CCTV surveillance systems are regulated by means of several laws, including the Data Protection Act of 2018 (DPA), the Freedom of Information Act of 2000 (FOI), the Protection of Freedoms Act of 2012 (POFA), and the Human Rights Act of 1998 (HRA). The Information Commissioner's Office (ICO) also issues a data protection code of practice for surveillance cameras and personal information, while the Surveillance Camera Commissioner's Office (SCCO) provides a technical framework for planning the deployment of CCTV cameras and their integration into IP security systems. These laws apply to all CCTV cameras in public spaces or outside private property, and are also designed to ensure that the systems are used responsibly and with respect for privacy. In terms of the Data Protection Act of 2018, CCTV footage ought to be processed fairly and lawfully; recorded for specific purposes; accurate and up-to-date; kept for a reasonable period of time; secured against accidental loss, destruction or damage; and processed in accordance with the rights of the person. Failure to comply with these rules may result in penal measures being meted out, including fines or legal proceedings.

While the United States of America lacks a specific federal law that governs the use of CCTV surveillance systems, there are still various national consent and privacy laws that apply to video surveillance (Edward, 2023:1). These laws ensure that the use of such systems does not infringe on the privacy rights of individuals. In addition, different regulations apply to the recording of audio and video footage, depending on the jurisdiction and intended purpose of the surveillance (Edward, 2023:1). It is important to carefully consider these laws and regulations when implementing any type of video surveillance system in order to avoid legal complications, while also protecting the privacy of those being monitored (Edward 2023:1). Regrettably, there is currently an absence of properly established regulations to guide the code of practice for CCTV surveillance systems in South Africa, which has caused concern among citizens, activists and legal experts (Basimanyane & Gandhi, 2019:1). This lack of guidelines on the usage of CCTV surveillance systems has led to the installation of surveillance cameras without clear instructions on the critical need to balance public safety and security with the fundamental right to privacy (Basimanyane & Gandhi, 2019:1).

According to Seema (2022:1), several legislative pieces indirectly govern video surveillance in South Africa. These include the Constitution of the Republic of South Africa (Act No. 108 of 1996), the Regulation of Interception of Communications and Provision of Communication-Related Information Act of 2002 (RICA), the Protection of Personal Information Act (POPI) (No. 4 of 2013) (POPI), the Promotion of Access to Information Act (PAIA) (No. 2 of 2000), the Electronic Communications and Transactions Act, No. 25 of 2002 (ECTA), and the Cybercrime Act (No. 19 of 2020). These laws were respectively enacted to uphold the constitutional right to privacy and the right to access information. However, there is a lack of specific regulations that explicitly address the use of CCTV surveillance systems and their monitoring in public spaces, which has been a cause for concern due to potential violations of privacy and civil liberties (Seema, 2022:1). Therefore, concerns surrounding the installation of these surveillance systems are beyond simple monitoring and extend to the fundamental protection of personal privacy.

Lamb (2023:1) also stresses the need for comprehensive guidelines and legislation to regulate their use, highlighting the intricate issues related to privacy rights and legal considerations. One of the primary concerns related to the use of CCTV surveillance systems relates to the type of data being collected, and how it is being collected, utilised, and secured (Mshanga, 2023:1). Furthermore, there is the risk of individuals being tracked and monitored without their knowledge or consent, given the potential of CCTV footage to capture vast amounts of personal data, including facial recognition and other identifying information (Mshanga, 2023:1). This possibility raises significant ethical and legal challenges, particularly in respect of data misuse or mishandling by those responsible for managing it. Given these concerns, it is crucial to establish comprehensive guidelines and legislation to regulate the use of CCTV cameras in South Africa, which would ensure the deployment of CCTV cameras in a helpful and fair manner while also safeguarding the privacy and civil liberties of individuals. Such regulations should explicitly address the collection, storage, and use of personal data, as well as the role of public authorities in monitoring and maintaining CCTV systems. This would help in balancing the need for public safety on the one hand, as well as individual privacy rights in the country, on the other.

Findings and Discussion

An extensive analysis was conducted in this study concerning the utilisation of closed-circuit television for crime reduction, exploring crucial areas such as the effectiveness of these systems in deterring crime, minimising the impact of criminal activities, and assisting in the identification and prosecution of offenders. Additionally, the article examined the challenges associated with CCTV systems, including concerns regarding privacy invasion, data security, and maintenance costs. Moreover, the study delved into the legal framework governing the use of CCTV systems, including the rights and responsibilities of both authorities and the public in this regard. The research underscores the complexities surrounding the use of CCTV systems for crime prevention and emphasises the need for a balanced and comprehensive approach to their implementation.

Utilising closed-circuit television for crime reduction

The study findings underscore the effectiveness of CCTV video footage as a potent tool for crime detection and deterrence. In this regard, the study reveals the widespread adoption of CCTV cameras as a popular security measure in both public and private domains. The literature examined in this study highlights the origins of CCTV surveillance, initially developed to combat crime in various settings, with particular prevalence in major South African cities such as Johannesburg and Cape Town (Basimanyane & Gandhi, 2019:2). The research also acknowledges the significant expansion of CCTV surveillance in South Africa post-1994, driven by the imperative to enhance safety and security. Furthermore, the literature suggests that the proliferation of CCTV surveillance is motivated by the need to address urban crime challenges in the face of limited policing resources (Safer Space:1). The installation of CCTV systems serves diverse objectives, including crime prevention and deterrence through visual surveillance of targeted areas.

The analysis of participant responses revealed a prominent theme regarding the identification of perpetrators in organised ATM bank card fraud. To that effect, the majority of participants emphasised the efficacy of surveillance cameras and subsequent investigations conducted in the vicinity as effective means for identifying wrongdoers. Furthermore, participants highlighted the importance of utilising the perpetrator's modus operandi, information from witnesses, as well as the significance of physical evidence and fingerprints found at the crime scene. Some participants also mentioned the utility of viewing CCTV footage, tasking informers, and conducting inquiries in aiding perpetrator identification. Noteworthy statements made by participants included:

"I think the presence of CCTV footage provides valuable evidence for SAPS to investigate and prosecute the culprits". (Participant A6)

These findings align with existing literature-based propositions such as Setiawan (2015:86) and Van Graan and Budhram (2015:55), who emphasise the role of CCTV footage and crime scene evidence in perpetrator identification. Whereas the participants' responses did not reflect most of the perpetrator identification methods mentioned in the literature, their comprehension of identification techniques for organised ATM bank card fraud perpetrators was evident.

The efficiency of closed-circuit television footage in combating ATM card fraud

This study highlights the usefulness of CCTV footage in identifying and apprehending suspects by collecting evidence for investigations and prosecutions. This study revealed that the installation of CCTV surveillance increases police accountability and transparency by providing an objective and unbiased record of incidents. The study reveals three distinct processes by means of which CCTV could be utilised during an investigation: CCTV not available, CCTV available but not useful, and CCTV useful. Several literature-based sources in this study indicate that the use of CCTV assists investigators in their investigations, increasing the likelihood of success and providing a valuable asset for intelligence gathering. However, despite the advantages of CCTV, the literature recognises certain limitations such as poor-quality footage, which hinders its effectiveness in deterring crime. Overall, this study provides a comprehensive and detailed overview of the use of CCTV in South Africa, highlighting its immense potential to enhance public safety and security.

This study has shown that the utilisation of CCTV cameras in public areas is a widely used strategy to deter criminal activity and monitor any potential criminal incidents in high-risk locations. The literature in this study reveals that the primary aim of CCTV cameras is to provide real-time surveillance of public spaces and gathering of evidence concerning criminal activities. This system is expected to have a direct impact on crime by facilitating prompt response and expediting the investigation process. The study found that CCTV footage presents the SAPS with a tool to combat and investigate crime effectively, given the amount of evidence it is able to provide. The literature in this study reveals that the responsibility of CCTV surveillance lies with the business premises in which the ATM is located, such as a mall or a bank. Meanwhile, the availability of CCTV footage depends on the security policy of the bank or mall. Some bank institutions retain CCTV footage for a period of ninety days, while malls may have their own policy concerning security footage. In the event of an ATM card fraud occurring within 90 days, the bank should make every effort to retrieve the CCTV footage in order to aid in the investigation. However, accessing the footage may not be a simple process, considering that the bank may need to coordinate with mall security or the police for the purpose of gaining access to the footage. It is also worth noting that the quality of the footage may vary, depending on the camera's location and lighting conditions.

The findings of the study reveal that detecting and preventing ATM card fraud is a daunting task, especially when there is no CCTV footage available to assist in the investigation process. However, this study highlights the immense benefits of analysing CCTV footage in identifying the culprits of such fraudulent activities. By closely scrutinising the movements and actions of ATM card fraud perpetrators captured on CCTV footage, investigators can quickly and accurately bring them to justice. The study emphasises the critical role of CCTV footage in expediting the investigation of ATM card fraud cases. It has been established that analysing CCTV footage can assist in determining the exact time and location of the fraudulent activity, the number of individuals involved and their physical characteristics, all of which are crucial in conducting a more comprehensive investigation.

Furthermore, various literature-based perspectives have emphasised the importance of utilising advanced technologies such as artificial intelligence and video analytics for analysing CCTV footage in cases of ATM card fraud. In this regard, the article suggests that the use of artificial intelligence and video analytics for analysing CCTV footage could significantly expedite the investigation process and increase the probability of successful prosecutions. This article also proposes that video analytics technology can be particularly beneficial in processing and analysing large volumes of CCTV footage, as it can automatically identify relevant footage and extract useful information, such as facial recognition and the registration numbers of vehicles used in the commission of ATM card fraud. This can significantly reduce the time and effort required by investigators to manually sift through footage for the purpose of identifying potential leads.

This study delved into participants' perspectives concerning the effectiveness of CCTV footage in combatting ATM card fraud. Examination of the empirical data unveiled a variety of viewpoints, with a majority recognising the efficacy of CCTV footage in addressing this type of fraud. Participants emphasised numerous benefits, including the provision of crucial evidence for law enforcement agencies such as the SAPS to pursue investigations in a manner that leads to the successful prosecution of offenders. Additionally, the participants highlighted the preventive role of CCTV installations in deterring ATM card fraud, noting that these cameras serve as a feasible and effective method to combat organised fraudulent activities. Participants also highlighted the usefulness of CCTV cameras in monitoring ATMs and preventing fraudulent transactions. International participants stressed the vital role of CCTV footage in combating ATM card fraud, highlighting its significance in bolstering security measures. Noteworthy statements made by participants included the following:

“Installing CCTV cameras at ATMs is an effective way to prevent and combat ATM card fraud. Footage captured by these cameras is valuable in the investigations and prosecution of criminals. The CCTV cameras at ATMs for the safety and security of users and the banking sector”. (Participant D1)

Based on the analysis of participant responses, it was discovered that their unique professional experiences influenced their perspectives on the efficacy of CCTV footage in combating ATM card fraud. These findings were corroborated by existing research on the topic, including studies by Ashby (2017:443) and Javed, et al. (2021:179), who offered further validation for the participants' viewpoints. To that effect, the participants in Sample D and Sample E concluded that CCTV cameras are a feasible and effective approach to combat organised ATM card fraud, and that their installation could significantly reduce the incidence of such crimes. The participants' perspectives are in agreement with the dominant literature perspectives reviewed in this study and revealed that proper training in handling CCTV footage could enable investigators to secure evidence more effectively, which will ultimately lead to higher and more successful prosecution rates. Based on the analysed participant responses, the study concluded that their knowledge and understanding of their workplace served as critical reference points for their responses to various questions posed to them.

Navigating the challenges of closed-circuit television surveillance systems

The literature reviewed in this study has identified several significant challenges associated with the use of CCTV footage, such as image tampering, poor-quality images, and difficulties in identifying perpetrators. Studies have shown that cameras that intermittently capture images may not be able to capture the offender, which could lead to reasonable doubt about their involvement in the crime. Furthermore, the literature has highlighted that handling and preserving CCTV footage can lead to inadmissible evidence during the trial and infringe on the privacy rights of individuals who were not involved in the crime of ATM bank card fraud. The findings in this study revealed that CCTV video footage could be admissible as evidence in court, provided that its authenticity and relevance are verified. The use of CCTV footage is also time-consuming, labour-intensive and requires significant resources to enable the required review and analysis processes. Based on the literature, it is clear that any unlawfully obtained CCTV footage will be inadmissible, and the challenges associated with such footage can be immense.

The literature has also emphasised the importance of maintaining the chain of custody in order to show how CCTV footage was preserved. The literature also emphasises that the chain of custody should begin from the moment the evidence is obtained or handled, and through to the analysis process in order to ensure the preservation of evidence. Documenting each step of the chain of custody is crucial for ensuring that the integrity of the evidence is maintained. Failure to maintain an appropriate chain of custody can result in the inadmissibility of evidence, casting doubt over its authenticity and reliability. The literature has further demonstrated that improper collection, handling, and utilisation of video evidence could pose significant challenges to criminal investigations. This study has shown that there are risks associated with CCTV footage, which could lead to the inadmissibility of such evidence in court.

The study has also focused on the participants' perspectives concerning the challenges presented by CCTV camera surveillance systems. The empirical data revealed that a majority of participants commented that poor-quality image footage exacerbates the task of identifying the perpetrator. One participant emphasised that “the correct handling and preservation of CCTV footage evidence can ensure its credibility”. Participants also highlighted that blurry footage makes it challenging to identify the perpetrator who committed ATM card fraud. Noteworthy statements made by participants included the following:

“When the CCTV footage is blurry or of low quality, it can become a challenging task to identify and apprehend the perpetrator. The lack of clarity and detail in the video can make it difficult to discern important distinguishing features, such as physical characteristics or clothing, that could help identify the individual responsible for ATM card fraud”. (Participant D2)

Based on the above-cited participant response, it is evident that their views were influenced by their professional backgrounds. These perspectives were validated by comparing them to the existing literature, which also highlighted similar challenges of CCTV camera surveillance systems (Worgul, 2017:1; Jones, 2023:1; Zhang, 2023:1).

Legal framework concerning CCTV surveillance systems

The use of CCTV surveillance systems is beneficial. However, it is essential to respect people's right to privacy. In the literature, the European Court of Human Rights has established guidelines for regulating the installation and use of CCTV surveillance systems for the protection of the right to privacy. The literature also showed that installing CCTV cameras in public areas does not violate privacy rights if no visual data is recorded or stored (Basimanyane & Gandhi, 2019:6; Safer Space, 2024:1). However, the right to privacy may be at risk when the footage obtained from CCTV cameras is publicly available and causes foreseeable injury or interference with privacy rights. It is in this regard that the European Court of Human Rights established principles that require tri-testing measures to be adopted for CCTV surveillance systems, ensuring that these measures are designed, installed, and operated in a manner that respects the privacy rights of individuals while also providing effective surveillance in the prevention and resolution of crime.

The literature reveals that in countries such as the United Kingdom, CCTV surveillance systems are regulated by several laws, including the Data Protection Act of 2018 (DPA), the Freedom of Information Act of 2000 (FOI), Protection of Freedoms Act of 2012 (POFA), and Human Rights Act of 1998 (HRA). The literature further revealed that the Information Commissioner's Office (ICO) also issues a data protection code of practice for surveillance cameras and personal information, while the Surveillance Camera Commissioner's Office (SCCO) provides a technical framework for planning the deployment of CCTV cameras and their integration into IP security systems. Notably, the United States does not have a specific federal law that governs the use of CCTV surveillance systems. Instead, the United States uses various national consent and privacy laws that apply to video surveillance to ensure that the use of such systems does not infringe upon the privacy rights of individuals.

In South Africa, there is no established code of practice for CCTV surveillance (Basimanyane & Gandhi, 2019:1). However, video surveillance is indirectly regulated through several pieces of legislation, such as the Constitution of the Republic of South Africa, (Act No. 108 Of 1996), the Regulation of Interception of Communications and Provision of Communication-Related Information Act of 2002 (RICA), the Protection of Personal Information Act (POPI) (No. 4 of 2013) (POPI), the Electronic Communications and Transactions Act, No. 25 of 2002), the Cybercrime Act (No. 19 of 2020, as well as the Promotion of Access to Information Act (PAIA) (No. 2 of 2000). The literature emphasises that these laws were enacted respectively to uphold the constitutional right to privacy and the right to access information.

In this study, the researcher examined the viewpoints of participants regarding the legal framework of CCTV surveillance systems. From the empirical data, it emerged that the majority of participants identified the POPI Act (No. 4 of 2013) and RICA (No. 70 of 2002) as the relevant pieces of legislation regarding the regulation of CCTV surveillance systems. Some participants in this study pointed out that the CCTV footage acquisition process involves the investigator applying for Section 205 of the Criminal Procedure Act (No. 51 of 1977) through the court and then serving it on the institution where the footage is located. Furthermore, the participants emphasised the importance of timely request for the Section 205 application to avoid automatic deletion of CCTV footage by the institutions. One participant also expressed uncertainty regarding the regulations governing the use of CCTV surveillance systems in South Africa, as shown below:

“I am not aware of any specific legislation or regulation governing the use and handling of CCTV footage”. (Participant A3)

Evidently, the afore-cited participant's professional backgrounds influenced their views. Such views cohered with existing literature perspectives in respect of legislation of CCTV surveillance systems in South Africa (Seema, 2022:1).

Recommendations

Given the significance of CCTV footage in the investigation and prevention of ATM card fraud and analysis of primary and secondary data sources, the following recommendations are proposed. Firstly, in light of the proven efficacy of CCTV footage as an indispensable tool in criminal investigations, it is strongly recommended that both the SAPS and its investigators should embrace advanced technologies for the thorough analysis of CCTV footage. This proactive adoption of technology is poised to streamline the investigation process in the SAPS, thereby substantially enhancing the prospects of successful prosecutions. A targeted emphasis should be placed on leveraging CCTV footage to trace and locate perpetrators of the escalating crime of ATM card fraud in South Africa.

Investigators ought to obtain court orders promptly under Section 205 of the Criminal Procedure Act (No. 51 of 1977) as an assurance of the admissibility of CCTV footage in court proceedings. This legal measure facilitates the lawful acquisition and examination of footage prior to its potential destruction by banking institutions. Moreover, it is advised that victims and investigators should promptly report any instances of ATM card fraud to the bank in order to maximise the chances of retrieving valuable CCTV footage. This swift reporting is essential, considering the potential variations in footage quality based on camera location and lighting conditions, which underscores the critical importance of prompt reporting in optimising the CCTV footage's potential for solving criminal activities.

Furthermore, this study underscores the recommendation for investigators of ATM card fraud to promptly visit the crime scene and collect footage, mitigating the risk of automatic deletion by banking institutions. It is crucial for investigators to be equipped with the necessary knowledge and skills for the effective handling and utilisation of CCTV footage. To maximise the effectiveness of CCTV surveillance, it is recommended that cameras should be installed in areas with higher incident concentrations, particularly those that are likely to result in police requests for footage. Additionally, the strategic use of advanced technologies is encouraged in order to identify patterns of criminal behaviour, more especially, the modus operandi of ATM card fraudsters. This approach proves particularly beneficial in cases where fraudsters operate across multiple locations or engage in similar criminal activities. Moreover, fostering a collaborative partnership between the SAPS and relevant institutions such as banks is deemed crucial. This collaborative effort ensures expedited access to CCTV footage when required for investigations, thereby enhancing the efficiency of both the SAPS and banks in utilising CCTV footage as evidence. Such partnerships are envisioned to yield more successful prosecutions, ultimately contributing to the creation of a safer society for all South Africans.

A key recommendation involves heightening the reliability and utility of CCTV footage evidence during both the investigation and prosecution stages. Developing and implementing security-enhancing methods for investigation and prosecution is vital, and could also include strategies such as enhancing the quality and resolution of CCTV footage and deploying more sophisticated analysis and interpretation tools that ultimately contribute to the effective prosecution of offenders. This enhancement in the evidentiary value of CCTV footage is recommended for ensuring that justice is served by holding those responsible for crimes accountable. It is also highly recommended that close attention should be paid to the chain of custody document in order to avoid any inadvertent errors or omissions from occurring. The meticulous documentation of every step in the chain of custody enhances preservation of the integrity of the evidence to be relied upon with confidence. It is recommended that comprehensive training should be provided to operators and investigators in managing CCTV footage in order to improve the effectiveness of evidence collection. Such training will lead to a higher success rate in prosecutions, based on the recorded imagery's sufficient quality to be useful when needed.

Given the current apprehensions concerning the legislation governing the deployment of CCTV cameras in South Africa, it is strongly recommended that comprehensive protocols and regulations should be established to govern the use of CCTV cameras. The primary objective of these regulations should be to ensure that the use of CCTV cameras is unbiased, beneficial, and consistent with the protection of privacy and the civil liberties of individuals. The regulations must address both the utilisation of CCTV surveillance systems and the protection of an individual's right to privacy when such systems are in use. This includes guidelines on the proper deployment of CCTV cameras, ensuring that they are strategically placed and focused on the intended areas to minimise potential privacy violations. Additionally, it is recommended that the regulations should set parameters for the retention and destruction of data collected through CCTV surveillance systems, limiting the duration of storage and establishing clear guidelines for the disposal of data.

It is further recommended that the regulations should outline the responsibilities of law enforcement and police officers regarding the management and monitoring of CCTV systems. It is recommended that adequate training and certification of personnel involved in the management and monitoring of CCTV systems should be included in these regulations in order to ensure that they are aware of the ethical and legal implications of their work. The regulations must enable a balance between the need for public safety and the protection of individual privacy rights across the nation. This will require a collaborative approach between stakeholders such as government authorities, civil rights organisations and the general public. Such a trajectory would ensure that the regulations are inclusive and responsive to the needs of all stakeholders. Such an approach would help in striking a balance between the need for public safety and the protection of individual privacy rights across the nation.

Conclusion

The CCTV cameras are widely considered as some of the most effective tools for preventing and detecting crime in public and private places worldwide. Given the escalating complexity of criminal activities, including ATM card fraud and the high crime rates in South Africa, there is a prevailing belief that CCTV video footage could serve as a valuable tool for identifying and deterring perpetrators and their criminal activities. This article emphasises the critical role of CCTV video footage in combating ATM card fraud, as well as the need to enhance the investigative skills of SAPS officers and bank investigators in South Africa. The article further highlights the advancements in surveillance technology, particularly in crime prevention and investigation. The widespread adoption of both public and private CCTV cameras has become crucial for law enforcement and communities, which is also helpful in perpetrator identification and evidence gathering. The proactive use of CCTV as a crime prevention strategy is encouraged as a mechanism for advocating for integrating high-definition video surveillance and detection analytics.

Continuous technological training is urged for law enforcement agencies to combat and prevent crimes effectively. This article underscores the importance of using advanced technologies for CCTV footage analysis, emphasising the timely acquisition of Section 205 of Criminal Procedure Act (No. 51 of 1977) for the admissibility of evidence in court. In this regard, it is recommended that a proactive approach should be adopted by investigators, including prompt visits to crime scenes for footage collection before automatic deletion by private institutions such as banks. Emphasis is placed on the need for investigators to be knowledgeable and skilled in the effective handling of CCTV footage, highlighting the importance of training and expertise in utilising this valuable resource. This article advocates for the development and implementation of security-enhancing methods for enhancing the reliability and utility of CCTV footage evidence, as well as ensuring that justice is fully served and perpetrators are held accountable.

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