

**AN EYE OF JUSTICE: A CASE STUDY ON CRIME CASE ANALYSIS USING
CCTV FOOTAGE**

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ABSTRACT

Crime continues to be a major concern in modern society. Urbanization and population growth make it worse, showing the need for effective strategies like using Closed-Circuit Television (CCTV) for preventing and solving crimes. This study explored the analysis of crime cases using CCTV footage to better understand its role in crime prevention, investigation, and intervention. It sought to address the challenges, uses, and potential of CCTV in enhancing law enforcement strategies and public safety. A qualitative case study design was employed through in-depth interviews with five police officers and five establishment owners in Ozamiz City. The data were analyzed using Yin's five-phase method, which includes compiling, disassembling, reassembling, interpreting, and concluding. The findings showed that CCTV is important for recording traffic-related incidents and crimes against persons and property. It also supports reactive backtracking and suspect identification. Additionally, CCTV is a useful tool for proactive real-time monitoring and dispatch. However, the study noted challenges, such as technical limitations with CCTV systems and legal barriers to accessing footage. Despite these challenges, CCTV was highly effective in improving accountability, providing solid evidence, and informing strategic deployment of resources and technological and infrastructure enhancements. The study concluded that while CCTV is essential for modern crime analysis, its full benefits can only be achieved through regular upgrades, proper maintenance, better access procedures, and training for staff. Recommendations include improving technology infrastructure, simplifying legal processes, and encouraging cooperation between authorities and community members to create safer neighborhoods and better crime management.

Keywords: *closed-circuit television, crime, investigation, prevention, surveillance*

DEDICATION

*This research is respectfully dedicated, above all to God Almighty
for His divine guidance, wisdom, and abundant blessings,
which have been instrumental in the successful
completion of this study*

*This study is likewise dedicated to our parents and siblings.
Their unconditional love, sacrifices, and encouragement
have been our greatest source of strength,
and to our friends,
who have inspired and supported us throughout
this academic journey;*

and

*We extend this dedication
to the local authorities and establishment owners,
whose cooperation and commitment to public safety
made this research possible and meaningful.*

Researchers

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INTRODUCTION

Background of the Study

Crime continues to be a prevalent factor in modern society, impacting people and communities (Jonathan et al., 2021). As evidenced by the data from a Serbian crowd-sourced online database, Numbeo, Manila ranked 42nd out of 311 cities worldwide with 64.5 crime index in 2024, followed by Cebu City with a crime index of 51.6, ranking 109th worldwide (Ayeng, 2024). With the growing complexities of criminal acts, there is a need for efficient crime prevention and solution strategies to maintain public security and safety (Juma, 2024; Paley, 2025). With increasing urbanization and population growth in cities, the issues surrounding crime intensify, calling for new solutions (Navarra et al., 2024; Oliveira, 2021). In this regard, studying the connection between crime and security is important in reducing crime and violence, formulating efficient law enforcement measures and community outreach programs (Bullock et al., 2022; Cheng & Chen, 2021).

The contribution of technology to crime prevention has revolutionized the security and law enforcement landscape over the past few decades (Soto et al., 2021). The development of advanced technologies like digital forensics, automatic number plate recognition, and geospatial information systems has improved investigators' capabilities to solve crimes more effectively (Etomi & Onyishi, 2021; Klasén et al., 2024; Tobias & Mwanza, 2024). Moreover, surveillance technologies such as closed-circuit television (CCTV) yield important visual evidence that can facilitate faster identification and arrest of suspects and reconstruction of crime scenes (Geldenhuis, 2023; Kirui, 2024; Maksymowicz et al., 2023). As demonstrated in 2011, a CCTV camera was used as

evidence to arrest three suspects in a drugstore robbery in Bontoc, Mountain Province, Philippines, after one of whom was identified through CCTV footage, proving the effectiveness of CCTV as a tool in identifying criminals (Falangon, 2022).

CCTV, or closed-circuit TV, is an observation system for sending video feeds to a specialized group of monitors, offering live monitoring of the environment in locations like public places, offices, and residences (Kirui, 2023; Papale, 2024). CCTV makes it possible for police forces to trace the movement of suspects, validate timelines, and spot major witnesses with greater accuracy (Brookman & Jones, 2022). According to a study, useful CCTV evidence increased case closure rates from 20% to 50% (Piza, 2024). In an interview with Iligan City Monitoring and Inspection Task Force Chief Romeo Villanura in 2023, he said that 70% to 80% of criminality was solved in Manila because of CCTV footage (Luczon, 2023). Contemporary CCTV cameras usually incorporate high-definition imaging, night vision, and motion detection, which makes them more efficient in recording important evidence in criminal cases (Singh & Kaur, 2025). By making use of this technology, officials can enhance response mechanisms and improve the overall effectiveness of crime prevention efforts (Aballe et al., 2022; Kirui, 2024).

However, as technology advances, it provides both new challenges and opportunities for law enforcement to adapt and innovate in pursuit of justice (Prayatno et al., 2024). Using CCTV footage has several difficulties that need to be addressed by authorities. One of the significant challenges is the likelihood of blind spots in the surveillance coverage where cameras could miss zones that are vulnerable to criminal activity and remain unattended (Mottakin et al., 2024). Additionally, the reliance on technology means that issues such as technical malfunctions, poor image quality, and

inadequate maintenance can diminish the effectiveness of CCTV systems (Kirui, 2024). The second concern is the large amount of video footage produced, which can be overwhelming for investigators, hence it becomes challenging to find relevant information immediately (Sachdeva et al., 2021). On the other hand, there is also an increasing concern over the possibility of abuse of surveillance video and the consequences for personal privacy rights (Malik et al., 2024).

Through the incorporation of insights gained from the analysis of crime, including that acquired through CCTV footage, intervention schemes may be specifically designed to solve certain problems and avoid future incidents (Lam et al., 2020). Through recorded video, authorities can offer impartial evidence that explains incidents, identify suspects, and validate witness statements, hence promoting transparency and accountability (Brookman & Jones, 2022; Inzana et al., 2024). In addition, conclusions derived from CCTV analysis can help identify patterns of behavior, allowing authorities to apply targeted interventions that effectively address underlying problems (Maroma et al., 2024). Law enforcement agencies might need to modify their training and operational procedures to integrate this technology efficiently, making sure that personnel are competent in the interpretation of audiovisual information and its use in crime prevention programs (Al Ashkhari & Ismail, 2024; Laufs & Borrión, 2022).

Although CCTV technology is extensively used in crime prevention, little is known about how crime case analysis using CCTV footage can directly inform the design of targeted intervention schemes for authorities. Most research on CCTV tends to examine the technical effectiveness or police operations associated with CCTV, rather than on how analyzed footage can be systematically used to prevent future crimes. Furthermore, there

is a lack of comprehensive understanding regarding the challenges that authorities encounter in interpreting and utilizing CCTV data. Hence, this research will attempt to address this knowledge gap by examining how CCTV crime analysis can be applied to intervention programs to maximize law enforcement response and community safety.

Theoretical Framework

This study was anchored on the Routine Activity Theory (Cohen & Felson, 1979) and Situational Crime Prevention Theory (Clarke, 1992).

Routine Activity Theory (RAT), which was developed by Lawrence E. Cohen and Marcus Felson in 1979, assumes that crime results when three fundamental components meet: motivated offenders, suitable targets, and a lack of effective guardians (Nutter, 2021). This theory stresses the role of routine in explaining patterns of offending, as it is argued that changes in routine can determine the likelihood of crime occurrence (Lunberg, 2021). For example, when people alter their schedules, the locations and times that they visit can become more or less susceptible to crime. Identifying these patterns can, therefore, help police anticipate and prevent possible criminal activity (Schaefer, 2021).

RAT holds that the presence of capable guardians, i.e., police officers, neighbors, or surveillance systems such as CCTV, is important in discouraging motivated offenders from pursuing their illegal desires (Cave, 2022; Halford, 2022). Where guardianship is weaker or non-existent, highly motivated offenders are more inclined to attack available targets or property (Makhaye, 2021). The installation of surveillance, for example, CCTV systems, acts to strengthen guardianship and exert a visible deterrent, hence affecting the offender's decision-making process (Roach, 2023). In this regard, CCTV can be a key

ingredient in modifying offenders' risk perceptions, which ultimately results in crime reduction (Papale, 2024).

In addition, the Routine Activity Theory also has important crime prevention and urban planning implications (Ceccato & Brantingham, 2024; Iliyasu et al., 2022). Stakeholders can better adapt interventions that take into consideration routine activities and community behaviors (Olipas, 2024). This can range from enhanced lighting, more patrols in certain neighborhoods, or CCTV cameras strategically located to increase surveillance and visibility (Yang et al., 2024). Therefore, the utilization of the guidelines of RAT is likely to facilitate more efficient crime prevention strategies and create safer settings for communities at large (Modise et al., 2025).

Routine Activity Theory (RAT) is relevant in the research because it also highlights the fundamental importance of able guardianship against crime (Halford, 2022; Navarrete-Hernandez et al., 2023). By exploring how CCTV systems' presence changes the conditions under which motivated offenders interact with potential targets, the research can gain insights into how surveillance can work as a deterrent (Thomas et al., 2022). Furthermore, RAT also puts the spotlight on community routines and habits, and these can help in planning CCTV camera placement within hotspots for crime (Love, 2020). Ultimately, this theory will help illustrate how surveillance technology not only enhances monitoring capabilities but also contributes to creating an environment less favorable to criminal activities (McKee & Bransford, 2024).

Situational Crime Prevention Theory focuses on reducing opportunities for crime by altering environmental factors that facilitate criminal behavior (Shane, 2021). Originated by criminologist Ron Clarke in the 1980s, it holds that crime is not so much a

function of individual motivation but is influenced to a great extent by situational factors that can be controlled (Freilich & Greene-Colozzi, 2024). It focuses on particular controls that can be applied to prevent potential offenders from committing crimes, such as the provision of more lighting in dimly lit locations, making targets more visible, or increasing natural surveillance through social interaction (Narayan, 2023). Finally, the theory promotes preventative measures that make offending more troublesome for criminals and thus lower the rate of crime (Clare, 2022).

One of the major ideas of the Situational Crime Prevention Theory is the notion of “target hardening,” which entails making the effort necessary for a crime more formidable (Turner & Klein, 2023). This is possible through the implementation of physical barriers, e.g., locks, alarms, and environmental surveillance systems like CCTV, to increase the difficulty of access for criminals to potential targets (Narayan, 2023; Papale, 2024). By increasing the perceived probability of being caught and strengthening environmental protection, these interventions can discourage criminals from exploiting opportunities in particular locations (Mwai, 2024). By doing so, the theory not only deals with the immediate setting of criminality but also assists in developing a wider culture of safety and accountability in communities (Brooks, 2020).

In addition, the Situational Crime Prevention Theory focuses on the need to study the unique contexts and patterns of crime so that stakeholders can specifically design interventions for the particular requirements of a given location (Sutton et al., 2021). Through the serious evaluation of hotspots of crime and the specification of situational factors that lead to offenses, law enforcers and community leaders may adopt focused tactics that appeal to residents (Thomson, 2022). As an example, the deployment of CCTV

systems in specified high-crime areas serves situational crime prevention by extending surveillance and warning potential offenders about the presence of monitoring (Baoyan, 2023). In summary, the theory offers a rich framework for formulating successful crime reduction techniques that place a premium on the role of situational context in discouraging criminality (Ho et al., 2022).

The applicability of the Situational Crime Prevention Theory to this research is substantial, as it closely aligns with the study's aim of promoting environmental elements to discourage crime (Adil, 2022). By studying CCTV as an example of target hardening, the study shows how surveillance is important in heightening the perceived risk of detection among potential perpetrators (Yang et al., 2024). The theory also promotes identifying and studying patterns of crime at particular locations so that CCTV camera placement in areas of high crime can be made more strategic (Eran & Hasranizam, 2024). Finally, let the study highlight the practical use of the Situational Crime Prevention Theory by showcasing how efficient surveillance mechanisms can make a remarkable difference in reducing crime rates and creating more secure community environments (Olipas, 2024).

Conceptual Framework.

This part of the study presents the different concepts identified in the study through the different themes. These concepts are thoroughly presented and discussed in this section.

Traffic-Related Incidents. Traffic-related incidents are events documented by surveillance that include vehicular collisions, pedestrian accidents, hit-and-run cases (Jha et al., 2021; Jha et al., 2023), and minor violations such as ignoring traffic signs and signals (Sikirat, 2022; Wontorczyk & Gaca, 2021). Disregarding even the simplest traffic rules significantly contributes to accidents, especially at night when monitoring is less effective

(Bhuiyan et al., 2022; Peng et al., 2021). According to Balushi et al. (2025), these incidents are one of the biggest urban challenges. They often lead to property damage, injuries, and even deaths. All of these disrupt transportation and put public safety at risk. Beyond the immediate effects, traffic incidents create long-term problems (Ahmed et al., 2023; Mohammed, 2023). They strain emergency response systems and lower community confidence in road safety (Ehsani et al., 2023). Therefore, tackling traffic-related incidents is essential not only for keeping order on the roads but also for ensuring community well-being (Angelo, 2023).

Traffic-related incidents highlight the need for surveillance and preventive measures to reduce their number and impact (Amini et al., 2021). CCTV cameras are crucial for collecting evidence of violations and accidents (Aballe et al., 2022). This helps clarify responsibility and assists with investigations. Additionally, consistent monitoring has been proven to lower violations such as speeding and running red lights (Cohn et al., 2020; Tilahun, 2023). The mere presence of cameras discourages reckless driving (Awamachi et al., 2024). Experts also mention that surveillance leads to long-term changes in behavior by encouraging compliance with road rules (Ball, 2021). However, limitations like camera blind spots, poor video quality, and insufficient coverage show the need for ongoing investment in both technology and infrastructure to improve effectiveness (Abdullah et al., 2025; Brookman & Jones, 2022; Usha Rani & Raviraj, 2023).

Traffic-related incidents point to the need for effective road safety strategies. CCTV footage not only helps with investigations after incidents but also acts as a deterrent to prevent future violations, particularly in high-risk areas (Aballe et al., 2022). Expanding surveillance coverage, enhancing video quality, and incorporating advanced technology

like artificial intelligence could improve detection and accountability (Pazho et al., 2023; Piza, 2021). These actions also aid in more effective traffic management (Tahir et al., 2023). They help authorities recognize patterns, allocate resources wisely, and carry out targeted actions (Elsyra, 2023). Better monitoring and management of traffic incidents can create safer roads, lower crime rates, and build stronger public trust in community safety systems (Awoyemi et al., 2025; Khan & Das, 2024).

Related Crimes Against Persons and Property. Related crimes against persons and property are criminal acts recorded by CCTV that directly threaten public safety (Bojanic, 2024; Friedman, 2024), ranging from violent offenses like assault and the killing of persons to property crimes such as theft and robbery (Aleksandrovich & Leonidovna, 2025; Appiahene, 2022; Hermanto et al., 2022). They directly impact individuals' well-being and the security of communities (Barreda, 2023). These incidents often happen suddenly, leaving victims at risk and communities disturbed (McEntire, 2021). Beyond the immediate harm, these crimes create lasting effects by spreading fear and weakening trust in social settings (Kleinfeld & Dancig-Rosenberg, 2022; Madriz, 2023). To tackle these offenses, we need strategies that focus on both prevention and effective responses to ensure safety and justice.

Research on crimes against persons and property consistently shows that surveillance and other preventive measures can help deter offenders (Gomez et al., 2021; Lee et al., 2023). Studies indicate that crimes like theft and robbery drop in areas with strong surveillance systems since the risk of being caught discourages illegal activity (Nzesya, 2024; Shinguto, 2021). Investigations into violent crimes also benefit when there is clear and objective documentation, which strengthens accountability (Manzi, 2022).

Experts highlight the importance of community vigilance and connected security methods because crimes against persons and property often arise from opportunistic situations (Alehegn, 2025; Wambai et al., 2024). However, challenges like limited coverage, blind spots, and delayed responses point to the need for ongoing improvements in monitoring and enforcement strategies (Oluoha et al., 2025).

Crimes against persons and property emphasize the need to combine technological, legal, and community-based approaches (Moghayedi et al., 2024). Surveillance provides crucial evidence that aids timely investigations and increases the chances of holding offenders accountable (Haley, 2025). Stronger preventive measures, such as visible monitoring systems and community involvement, can lower opportunities for crime (O'Malley & Smith, 2022; Sutton et al., 2021). At the same time, institutional strategies, including legal reforms and better coordination among stakeholders, can improve response efficiency. Thoroughly addressing these crimes boosts community resilience, encourages accountability, and creates safer environments for everyone, including their belongings (Ceccato & Newton, 2025; Ranaweera, 2024).

Technical Limitations of CCTV Systems. Technical limitations of CCTV systems are factors that greatly impact their effectiveness in ensuring safety and aiding investigations (Kirui, 2024; Papale, 2024). One common issue is poor video quality, which makes it hard to identify faces, license plates, or important details during incidents (Falangon, 2022; Viswanathan et al., 2025). Limited storage also poses a challenge, as recordings often get overwritten after short periods, resulting in the loss of potentially crucial evidence (Bacci et al., 2021). Connectivity issues and power outages further weaken system reliability, leading to gaps in surveillance coverage (Abdulwahid, 2021). These

factors reduce CCTV systems' overall ability to function as trustworthy tools for monitoring and documentation.

Lighting conditions are another key factor affecting the quality of CCTV footage. Poor lighting, especially at night, often leads to blurry or unclear recordings, making identification and verification difficult (Madhan & Shanmugapriya, 2024). Even with features like facial recognition or plate detection, low-quality or poorly lit footage limits their effectiveness (Mustafa & Karabatak, 2024; Quraishi et al., 2024). Studies also mention that the absence of improved features, such as night vision or high-definition imaging, hampers the system's ability to capture accurate evidence (Olivier et al., 2025; Sandhiya et al., 2024). This underscores the need to invest in upgraded technologies to tackle the limitations of outdated systems.

These technical challenges suggest that without proper upgrades and maintenance, CCTV systems may not fulfill their intended purpose. Improving video quality with high-definition cameras, increasing storage capacity, and ensuring consistent connectivity are essential for boosting reliability (Bacci et al., 2021; Danthasinghe, 2024). Regular maintenance and infrastructure upgrades, such as better lighting, can enhance surveillance effectiveness (Khemakhem & Krichen; Sanusi, 2025). Additionally, incorporating advanced technologies like artificial intelligence could help with identification and retracing steps (Vinothkumar & Karunamurthy, 2023). Overcoming technical limitations is vital for maximizing the role of CCTV in promoting safety, preventing crime, and supporting effective investigations.

Legal and Procedural Barriers to Accessing CCTV Footage. Legal and procedural barriers to accessing CCTV footage are any administrative and judicial constraints, such

as formal requests, owner consent, court warrants, and data privacy laws, that can delay the retrieval of time-sensitive evidence (Baoyan, 2023; Berk-Seligson, 2022; Sabatino, 2023). It plays a key role in balancing public safety with individual rights (Baffour Adumata, 2025; Gogoi, 2024). Surveillance recordings are often seen as sensitive data, and strict rules exist to prevent misuse or violations of privacy (Andrew & Baker, 2021; Kansal et al., 2025). Formal requests and administrative approval are usually necessary before footage is released, which can slow down urgent investigations (Baoyan, 2023). Sometimes, judicial steps, such as obtaining a court warrant, are required to access recordings (Berk-Seligson, 2022; Sabatino, 2023). While these measures protect data security, they also create delays in retrieving time-sensitive evidence.

These barriers, though protective, can reduce the efficiency of crime prevention and resolution. Studies indicate that the need for consent from property owners or legal authorization often leads to critical delays during investigations (Baoyan, 2023). This is especially troubling in fast-moving cases, such as hit-and-runs or theft, where quick access to footage could help identify suspects (Yang et al., 2024). Differences in protocols across institutions can complicate access and could create uncertainty in legal processes. Despite these challenges, following data privacy laws ensures that surveillance systems are used responsibly (Parmar & Chauhan, 2024).

Clearer guidelines and standardized procedures are necessary to balance efficiency with legal protections (Parmar & Chauhan, 2024; Zhang, 2025). Simplified processes could allow quicker access to CCTV footage without sacrificing personal data protection. Improving cooperation between institutions, like government agencies and private businesses, would also help reduce procedural delays. Additionally, training on data

handling and privacy compliance can promote the ethical use of surveillance systems (Mei, 2024; Singh & Kishor, 2024). Addressing legal and procedural barriers improves both accountability and effectiveness in using CCTV as a tool for safety and justice (Parmar & Chauhan, 2024).

Reactive Backtracking and Suspect Identification. Reactive backtracking and suspect identification are investigative methods using recorded footage to reconstruct the sequence of events leading up to an incident to track movements and identify potential perpetrators or witnesses. By examining recordings before, during, and after an event, investigators can follow the actions of individuals and assess possible involvement (Sobko & Tesliuk, 2024). This method offers valuable context beyond the incident itself. It reveals patterns of movement and behavior that might indicate a suspect. Even if full identification isn't possible, partial details like physical descriptions or behavior patterns captured on camera can help narrow down leads (Aung & Kusakunniran, 2024). As a result, backtracking strengthens investigations by providing a clearer understanding of how incidents unfold.

Studies highlight how important reactive backtracking is for building accountability and supporting legal processes. Surveillance footage acts as an objective record that can support or contradict witness testimonies (Kirui, 2024). This reduces reliance on memory, which can often be faulty. Researchers also point out that the visual evidence from CCTV increases the chances of identifying suspects, especially when used alongside other investigative tools (Brookman & Jones, 2022; Inzana et al., 2024). In many cases, this method helps create timelines that show who was present and what actions were

taken, which is crucial in resolving disputes (Kirui, 2024). Overall, backtracking plays a key role in modern investigation strategies.

Reactive backtracking and suspect identification indicate that clear and reliable footage is crucial for effective outcomes. Investing in high-definition cameras and improving coverage ensures that recordings capture the details necessary for identification (Bacci et al., 2021). Combining footage analysis with other investigative resources, like witness accounts and digital databases, further improves accuracy (Brookman & Jones, 2022; Nama et al., 2025). Additionally, using CCTV as supporting evidence in court boosts the credibility of cases and encourages accountability (Baoyan, 2023; Pei, 2025; Togatorop et al., 2020). This process highlights the essential role of surveillance in reconstructing events, identifying suspects, and supporting the pursuit of justice.

Proactive Real-time Monitoring and Dispatch. Proactive real-time monitoring and dispatch means continuously watching surveillance systems to spot unusual activities as they occur (Papale, 2024). Unlike reactive methods that depend on reviewing footage after an incident, this approach focuses on prevention by detecting potential threats early (Piza & Moton, 2023). Real-time monitoring allows responders to be deployed immediately to areas where there is suspicious behavior or criminal activity (Mukto et al., 2024). This change transforms surveillance from a passive recording tool into an active crime prevention method (Anderez et al., 2021). As a result, communities experience quicker interventions that lower risks and reduce harm (Papale, 2024).

Real-time monitoring works best when combined with reliable communication systems and consistent staffing (Kirui, 2024; Papale, 2024). Studies indicate that 24/7 surveillance deters crime because people know their actions can be seen right away (Aballe

et al., 2022). Coordinating with responders through radio or digital networks speeds up and improves the accuracy of interventions (Kirui, 2024). Experts also point out that regular system checks and eliminating blind spots are crucial for ensuring continuous monitoring (Choi et al., 2023; Shukla et al., 2021). These findings emphasize that real-time surveillance turns CCTV into a valuable tool for both deterring crime and taking immediate action (Kirui, 2024).

Proactive monitoring and dispatch highlight the need for both technology and organizational support. Having enough staff ensures that suspicious activities are spotted and addressed quickly, while strong communication channels enable rapid resource deployment (Kirui, 2024; Papale, 2024). Investing in infrastructure, like high-quality cameras and a reliable power supply, further strengthens this preventive approach (Falangon, 2022). Beyond intervening, the clear presence of active monitoring discourages illegal behavior and promotes a sense of security in communities (Nagin et al., 2023; Van Sintemaartensdijk et al., 2021). In the end, proactive surveillance improves public safety by preventing incidents before they escalate and ensuring prompt responses when threats arise (Papale, 2024).

Strategic Deployment of Resources. Strategic deployment of resources means using information and analysis to allocate manpower, technology, and infrastructure in the areas most vulnerable to risks. Surveillance systems, like CCTV, provide valuable insights into high-risk locations and patterns of incidents (Kim et al., 2021; Maroma et al., 2024; Sobko & Tesliuk, 2024). This helps decision-makers focus on where to add cameras, patrols, or security measures (Maroma et al., 2024). By studying movement trends and identifying blind spots, resources can be used more efficiently for better coverage and deterrence (Eran

& Hasranizam, 2024; Shukla et al., 2021). Strategic deployment ensures that limited assets are used in ways that have the greatest impact on safety and prevention.

Data-driven approaches to resource allocation significantly improve crime prevention and traffic management (Tahir et al., 2023; Yang et al., 2024). Studies reveal that examining surveillance footage helps pinpoint hotspots where violations or crimes are more likely to happen (Malik et al., 2024; Modise, 2025). This information aids in planning targeted interventions, like more monitoring during busy times or increased security in isolated areas. Strategic deployment cuts down on redundancy by preventing the over-concentration of resources in already low-risk spots (Mansoor, n.d.). As a result, communities gain from better coverage and balanced safety strategies.

The implications of strategic deployment highlight its importance in long-term planning and sustainable security management. By basing decisions on surveillance data, authorities can develop proactive strategies instead of relying only on reactive measures (Sonowane et al., 2025). This approach not only improves immediate safety but also informs wider initiatives like urban design, traffic flow improvements, and community policing (Eran & Hasranizam, 2024; Tahir et al., 2023; Yang et al., 2024). Combining technology with resource planning allows for ongoing adjustments as risks and behaviors change over time (Thompson, 2023). In the long run, strategic deployment creates stronger, safer environments by ensuring that resources are placed where they are needed most.

Technological and Infrastructure Enhancement. Technological and infrastructure improvements mean the ongoing upgrading of surveillance systems to make them more reliable, accurate, and effective in managing safety. High-definition cameras with features like zoom, night vision, and wide coverage allow for clearer identification of people and

vehicles (Agurob et al., 2024; Kim et al., 2021; Valentino & Leonen, 2023). Adding more cameras in public and high-risk areas helps reduce blind spots and ensures better visibility (Lawrence et al., 2022). Reliable infrastructure, including stable power sources and ample data storage, is also key to maintaining consistent surveillance (Abd Rahim et al., 2025; Nikhilesh et al., 2022). Together, these upgrades change CCTV from a basic recording tool into a full system for prevention and investigation.

Research shows the importance of integrating technologies like artificial intelligence into surveillance systems. AI can take on tasks such as facial recognition, object tracking, and real-time alerts, lowering the load on human monitors (Gawande, 2025; Pazho et al., 2023; Suthahar et al., 2025). Studies also indicate that ongoing training for system operators improves their ability to use the upgraded technologies effectively (Nugroho et al., 2023). Additionally, support infrastructure, like stable connectivity and efficient backup systems, ensures that data isn't lost during outages or malfunctions (Danthasinghe, 2024; Nikhilesh et al., 2024). These advancements boost both efficiency and accuracy in detecting and preventing incidents.

The implications of these technological and infrastructure improvements suggest that modernization is necessary for tackling current and future security challenges. Investing in advanced equipment keeps surveillance systems relevant and capable of handling changing threats (Nilsson, 2023). Infrastructure upgrades further enhance reliability by reducing downtime and maintaining steady coverage (Kirui et al., 2023). When combined with skilled personnel and updated protocols, these enhancements maximize the effectiveness of CCTV in preventing and investigating incidents (Kirui, 2024; Lawrence et al., 2022; Piza, 2021). Overall, continuous innovation and solid

infrastructure create safer communities by strengthening surveillance capabilities and building public trust in security systems.

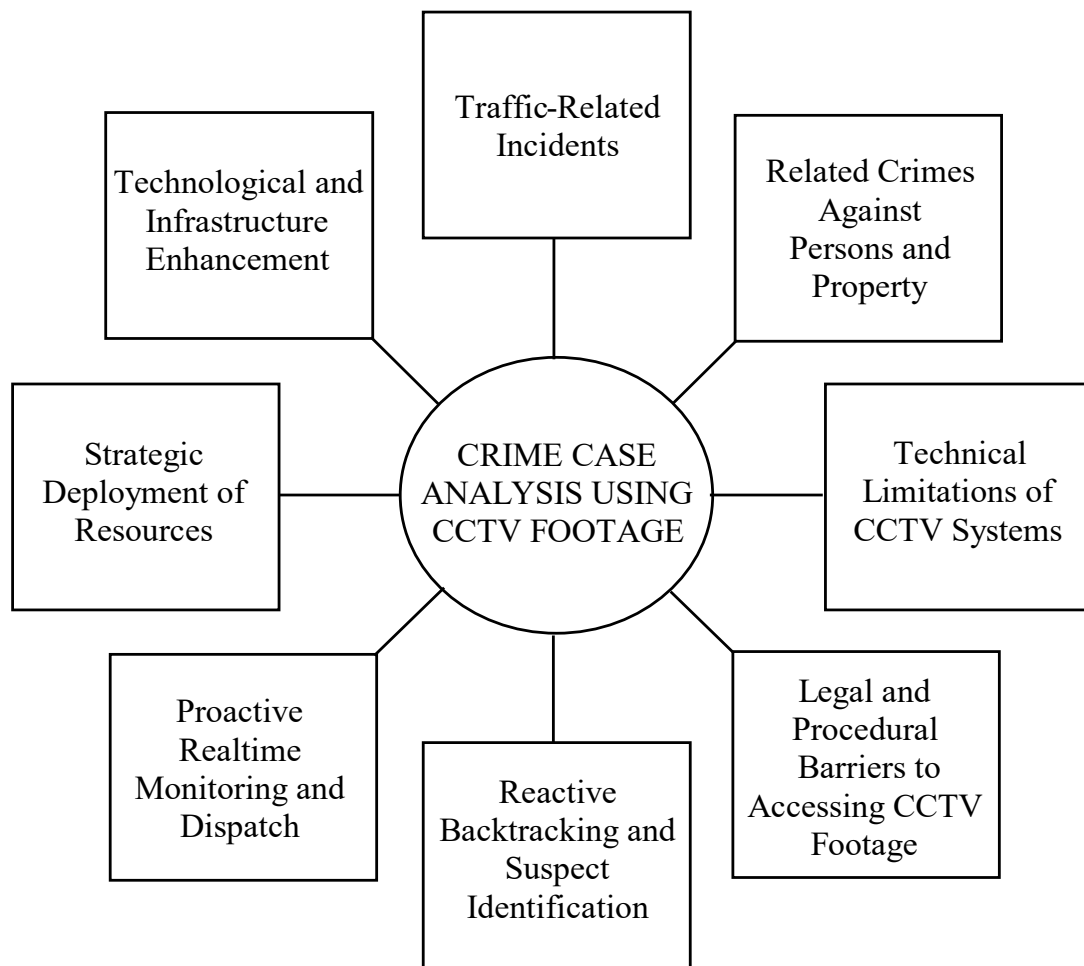


Figure 1. Schematic Diagram of the Study

Objectives of the Study

This study explored the analysis of crime cases using CCTV footage in Ozamiz City, Philippines, to better understand its role in crime prevention, investigation, and intervention. It sought to address the challenges, uses, and potential of CCTV in enhancing law enforcement strategies and public safety. Specifically, this study sought to answer the following:

1. Determined the types of criminal activities commonly captured in CCTV footage within Ozamiz City
2. Identified the challenges and limitations encountered by authorities in utilizing CCTV footage for crime investigations.
3. Examined how the information obtained from CCTV footage influences or informs intervention strategies employed by law enforcement and community stakeholders.
4. Determined effective practices and strategies that enhance the utilization of CCTV data for crime prevention and resolution.
5. Developed recommendations for designing intervention schemes based on CCTV crime analysis to prevent recurrence and improve law enforcement responses.

Significance of the Study

This study offers useful insights into how law enforcement agencies can effectively use CCTV footage to improve intervention strategies. By identifying typical crime patterns and the challenges in analyzing CCTV data, the study aims to offer recommendations for better crime prevention. It also helps in creating targeted intervention schemes that can reduce conflicts and support more efficient crime resolution. Finally, the results of this

study can help policymakers and law enforcement agencies make better use of surveillance technology, leading to safer communities and improved crime management.

RESEARCH METHODOLOGY

Design

This research utilized a case study research design to analyze crime incidents captured through CCTV footage as input in designing intervention schemes for the authorities. Based on Yin's case study approach (2014), the research focused on an in-depth examination of selected real-life cases involving criminal events observed through CCTV. Rather than generalizing across large populations, the case study research design allowed for a more detailed exploration of a specific issue, event, or phenomenon in its natural context (Coombs, 2022). By investigating how CCTV footage was used during and after these events, the research aimed to extract insights that can guide the development of effective intervention schemes for law enforcement authorities.

Setting

This study was conducted in Ozamiz City, Philippines, where the participants are residents who have experienced the impact of CCTV installations in their communities. Ozamiz City, an evolving urban center in Misamis Occidental, served as an ideal backdrop for examining the effects of surveillance technology on crime reduction and public safety. By conducting the study in this specific location, the researchers identified how CCTV could contribute to safer and more secure communities.

Participants

The research used a purposive sampling method to select participants, specifically involving the police and owners of establishments equipped with CCTV cameras within

Ozamiz City. Data collection proceeded until data saturation was achieved after 10 participants. The participants were selected based on a specific criterion: (1) For police officers, they had to have at least one year of experience in handling crime investigations involving CCTV footage. (2) Owners of commercial or non-commercial establishments had to be equipped with operational CCTV cameras and had experienced at least one incident where footage was used for crime-related purposes. This selection procedure guaranteed that participants possessed applicable knowledge regarding the utilization and effectiveness of CCTV in crime resolution, providing useful insights for the development of intervention schemes.

Instruments

The research employed the use of an interview guide as the main data collection tool. The research tool was segmented into three key parts. The initial part contained introductory questions to collect demographic data from the participants, including age, profession, and years of experience with crime investigation or CCTV operation. The second part examined participants' views on the effectiveness of CCTV installations in crime prevention and resolution, including their views on challenges encountered and the value of CCTV footage in solving cases. Lastly, the third part was comprised of questions that examined the cooperative work among stakeholders, including law enforcement and members of the community, in utilizing CCTV data effectively for crime analysis and intervention. To allow for an extensive data collection process, in-depth, face-to-face interviews were carried out. The interview guide was thoroughly checked by the College Research Committee to guarantee ethical adherence and the protection of participants' rights and well-being.

Data Gathering Procedure

Before carrying out the interviews, the researchers sought approval from the Dean of the College of Criminology to conduct the study in Ozamiz City, Philippines. A letter of request was also made to local authorities for the necessary approvals. Potential participants were identified by the researchers, such as police officers and owners of establishments with CCTV cameras. Careful details about the purpose of the study and how the interviews would be conducted were presented to these individuals, being transparent. Informed consent was obtained from all participants, ensuring they participated voluntarily and understood the purpose of the study. Ethical implications were diligently taken care of, having the research protocol examined by the College Research Committee to ensure conformance with ethical principles.

Throughout the interviews, the researchers employed the use of a voice recorder as well as note-taking to record the participants' answers to guarantee the integrity and completeness of the data gathered. Participants were assured that confidentiality would be respected, with stern measures taken to ensure their privacy and anonymity were safeguarded during the research process. Following the ethical principles, the researchers complied with relevant privacy laws, such as Republic Act No. 10173, referred to as the "Data Privacy Act of 2012," in safeguarding the confidentiality and security of data and information from the participants.

Ethical Considerations

During the research period, proper adherence to the ethical guidelines was ensured. The study was approved by the College Research Committee before data collection, and

the researchers filled in all the necessary forms related to research ethics to maintain the ethical standards of the research and protect the rights and welfare of the participants.

The researchers also provided an Informed Consent Form to the participants during data collection, which they signed as an indication of voluntary participation in the study. The purpose and objectives of the study were made known to the participants, noting that participants' identities would be kept confidential and that they would be kept anonymous during the research process. In-person, open-ended interviews were conducted in a private setting, preferably chosen by the participants themselves, to ensure their comfort and security. After the interviews, any data that was recorded was transcribed and deleted immediately to protect the privacy of the participants.

Data Analysis

The analysis of the data followed Yin's (2014) five-phase method of qualitative data analysis, which included compiling, disassembling, reassembling, interpreting, and concluding. This method allowed for a structured and systematic treatment of the information collected from the interviews conducted with police officers and establishment owners in Ozamiz City.

In the compiling phase, the interview data were arranged by recording all the conversations verbatim. The transcriptions and field notes were documented and stored securely. A code was assigned to each participant to maintain anonymity and confidentiality. All materials were prepared for systematic review and analysis.

During the disassembling phase, the transcribed data and corresponding sources were divided into distinct units of meaning. Data sources were sorted and analyzed

according to the research objectives. Relevant statements were grouped for thematic analysis.

In the reassembling process, the data were organized into broader categories to identify major themes. Commonalities, contextual variations, and possible contradictions of participant responses were identified through analysis. Comparative analysis was applied to explore similarity and dissimilarity across groups, e.g., law enforcement and owners of establishments. Negative cases or rival explanations were considered, and alternative interpretations were made. The rebuilt data yielded a thematic structure that captured the common experiences and practices of the participants regarding the use of CCTV recordings for crime investigation and intervention.

During interpreting, the researchers examined the themes and patterns based on criteria of attribute clarity, information completeness, fairness of representation, and empirical accuracy. The interpretation was supported by descriptive summaries and visual presentations, with an emphasis on ensuring that there is transparency in how the data indicates the true experiences of participants and the insight generated. Credibility was ensured through the use of triangulated data points and transparency in analytical processes. The analysis sought to illustrate how the conclusions are evidenced by the data gathered.

In the concluding stage, the key conclusions derived from the analyzed data were presented. At this stage, the importance of CCTV in crime prevention and resolution, the practical limitations faced by authorities in utilizing the technology, and the implications for developing targeted intervention schemes were emphasized. The findings were based on the data and provided the foundation for making recommendations on how to improve

the application of CCTV as a means of facilitating public safety and enhancing law enforcement practices.

RESULTS AND DISCUSSION

This section presents the results and discussion regarding the analysis of crime cases using CCTV footage, based on the experiences of police officers and establishment owners. These results successfully addressed all of the study's objectives and are categorized into key themes: traffic-related incidents, related crimes against persons and properties, technical limitations of CCTV systems, legal and procedural barriers to accessing CCTV footage, reactive backtracking and suspect identification, proactive real-time monitoring and dispatch, strategic deployment of resources, and technological and infrastructure enhancement. These findings are integrated with existing research to demonstrate how CCTV effectively supports community safety.

1. Determined the types of criminal activities commonly captured in CCTV footage within Ozamiz City.

Traffic-Related Incidents

CCTV footage has been valuable in documenting traffic incidents like collisions and hit-and-run cases (Huang & Lee, 2024). It helps identify those responsible and provides clear evidence of what happened (Aballe et al., 2022). By capturing violations such as ignoring traffic signs or lane discipline, CCTV plays an important role in improving road safety and supporting police efforts in handling traffic incidents (Woods, 2021). Officers noted that the most common traffic incidents captured by CCTV include various types of vehicle accidents. These often involve collisions between vehicles and pedestrians, which are frequently linked to hit-and-run situations that cause physical injuries. They also

mentioned that leaving the scene after an accident is considered a criminal offense. Moreover, minor traffic violations, especially at night when drivers often ignore traffic lights and signs, are regularly monitored and recorded by CCTV. These observations emphasize how crucial CCTV is in documenting and addressing traffic-related crimes in the area.

“The most common criminal activities that CCTV commonly captures in the Ozamiz area alone are vehicular accidents. Mostly, vehicle-to-vehicle, and sometimes vehicle against a pedestrian, hit and run, which might cause physical injuries to persons involved.” (P3)

“Personally, I would say that the most common criminal activity captured in CCTV involves traffic accidents, where hit-and-run usually occurs. It may not be the person's intention to hit a pedestrian, but the act of leaving the scene after the accident is considered criminal to me.” (P4)

“Based on my experience, in traffic, the most common criminal activity captured by CCTVs is minor traffic violations. Mostly at night, many would disregard traffic rules, not observing traffic lights, disregarding traffic signs, that's what we usually monitor.” (P5)

The establishment owner supported the police officers' observations by stressing the real benefits of CCTV for solving traffic incidents. They pointed out that CCTV footage is key in determining who is responsible during collisions or minor accidents, like when someone claims to be "side swept" in a parking lot. By offering an unbiased record of events, CCTV is instrumental in revealing the truth and guaranteeing accountability. This shows its value as a trusted tool for both preventing and investigating traffic disputes. The owner's view highlights how CCTV technology assists law enforcement in effectively managing traffic-related crimes.

“CCTV is essential because, for example, if there's a collision on the road or a person complaining about getting 'side swept' in our parking area, it would help identify which of them is responsible. It's essential because it can tell you the truth, that that's what really occurred.” (E1)

In conclusion, traffic-related incidents are some of the most common crimes captured on CCTV. They often involve vehicle collisions, hit-and-run cases, and minor traffic violations. These events usually include accidents between vehicles and sometimes involve pedestrians. A common problem is drivers leaving the scene after an accident. This behavior makes it harder to hold them responsible and worsens the situation. Also, nighttime traffic violations, such as ignoring traffic lights and signs, frequently occur, leading to unsafe road conditions. CCTV footage plays a vital role in these cases. It provides clear evidence that helps identify those at fault, supports investigations, and helps prevent future incidents by encouraging better behavior. Recording and reviewing these incidents enhances public safety by promoting compliance with traffic laws and allowing for quick resolutions when violations occur.

Studies on traffic-related incidents captured by CCTV highlight the important role of surveillance technology in improving road safety and law enforcement. Research consistently shows that CCTV footage is important evidence in accident investigations, especially in hit-and-run cases where identifying the responsible party can be difficult (Saputra et al., 2024). Studies also indicate that continuous monitoring of traffic behavior through cameras helps cut down on violations like running red lights and speeding, which are common causes of road accidents (Cohn et al., 2020; Tilahun, 2023). Furthermore, research points out that the presence of CCTV serves as a deterrent, encouraging drivers to follow traffic regulations more closely (Aballe et al., 2022). However, some studies warn about limitations, such as blind spots in camera coverage and the need for high-quality video to ensure accurate identification (Brookman & Jones, 2022; Usha Rani & Raviraj, 2023). These studies support the inclusion of CCTV in traffic management systems as an

effective way to improve accountability, reduce accidents, and promote safer road environments.

The findings on traffic-related incidents recorded by CCTV have important implications for public safety and law enforcement strategies. The ability of CCTV to provide clear evidence in accidents and traffic violations leads to more effective investigations and accountability. This could lower the number of unresolved cases like hit-and-runs. It highlights the need to expand and upgrade surveillance infrastructure, particularly in high-risk areas, to improve coverage and video quality. Additionally, the deterrent effect of visible CCTV cameras suggests that increasing their presence could encourage safer driving behaviors, ultimately lowering accident rates. These results also stress the importance of continuous monitoring and timely reviews of footage, as well as collaboration between community members and authorities to maximize the benefits of CCTV in traffic management and crime prevention.

Related Crimes Against Persons and Property

Crimes against persons and property involve illegal acts that either directly harm individuals or target their belongings (Barreda, 2023). These crimes impact personal safety and community security, making them a key concern for law enforcement and preventive measures like CCTV. From the responses, it is clear that CCTV often captures a wide range of crimes, from violent incidents such as injury and killing of persons to property-related offenses like theft and robbery. These crimes often occur at unexpected times, so constant monitoring and good-quality footage are essential for timely responses and investigations. Additionally, vehicle accidents and hit-and-run cases also appear frequently, showing how CCTV plays a crucial role in documenting both harm to individuals and property damage.

“From experience, the most common criminal activity captured in CCTV is the killing of persons using a firearm, shooting incidents, in short. Most of them happened back in the day. They were prevalent.” (P1)

“Usually, the most common criminal activity captured in CCTV ranges from simple traffic violations to theft or robbery, and heinous crimes like murder, homicide, and sometimes a combination, like robbery with homicide. Those crimes are usually committed at the least expected times.” (P2)

“The most common criminal activities that CCTV commonly captures in the Ozamiz area alone are vehicular accidents. Mostly, vehicle-to-vehicle, and sometimes vehicle against a pedestrian, hit and run, which might cause physical injuries to persons involved. Other than that, is theft or robbery.” (P3)

The experience shared by the business owner supports the police responses by demonstrating how crimes against people and property are often captured on CCTV. In this case, the theft was directly captured on camera, which allowed the suspects to be identified and held accountable through official reporting and legal action. These incidents support the police findings that property crimes, along with violent and vehicle-related offenses, are often documented and provide useful evidence in investigations. This shows that CCTV not only discourages crime but also improves the justice process by offering clear records of illegal acts.

“We have direct experience of crime being committed against us, when my nephew visited our house, their branded footwear was stolen. It was captured by our CCTV, and we later filed a report at the police station. He was jailed for about three or six months, I think. The most common criminal activity captured by CCTV in our area is stealing. Just like recently, someone’s wallet was stolen, and we’re told that it was thrown in a river, which happens to be near our house.” (E3)

In summary, CCTV captures a wide variety of criminal activities, including violent acts such as the killing of persons, as well as property-related incidents like theft, robbery, and vehicle accidents that can harm people and possessions. These events often occur suddenly, exposing the everyday risks that individuals and communities encounter. Even minor cases, such as the theft of personal items, become significant when recorded by

cameras. This footage provides strong evidence that can help hold offenders responsible. CCTV documents events, improves crime prevention, promotes public safety, and aids in solving criminal cases. It shows the importance of surveillance in providing clear accounts of what occurred, which reduces reliance on conflicting testimonies. CCTV contributes to creating a sense of security by assuring communities that illegal acts can be tracked and addressed.

Studies on crimes against people and property consistently show how important surveillance systems like CCTV are for both prevention and investigation. Research indicates that cameras can significantly lower the chances of offenses such as theft, robbery, and violent attacks because potential offenders are put off by the risk of being recognized (Yang et al., 2024). Other studies point out how CCTV footage strengthens the justice system by providing objective evidence that backs eyewitness accounts and aids in prosecuting cases (Brookman & Jones, 2022). Additionally, scholarly works recognize its role in monitoring urban areas, schools, and businesses, where it not only deters mischief but also helps identify security weaknesses that can be improved through better planning (Bagalanon et al., 2024; Folorunsho, 2021). These studies confirm that CCTV enhances public safety by protecting individuals, securing property, and backing effective law enforcement strategies.

The results emphasize that crimes against people and property are among the most commonly recorded incidents by CCTV. This includes violent acts like shootings and homicides, as well as theft, robbery, and vehicle accidents that can endanger lives and belongings. This shows how crucial surveillance technology is for providing reliable evidence, ensuring accountability, and shaping crime prevention strategies. It also indicates

that while crimes can occur suddenly in everyday situations, having clear recordings boosts the ability to respond quickly and fairly. These findings stress the need for ongoing improvements in surveillance systems to better protect individuals, secure property, and foster safer community environments.

2. Identified the challenges and limitations encountered by authorities in utilizing CCTV footage for crime investigations.

Technical Limitations of CCTV Systems

The technical limitations of CCTV systems highlight common issues that reduce the effectiveness of surveillance. These include poor video quality, limited storage capacity, weak lighting, connectivity problems, and faulty or broken units (Falangon, 2022). These challenges often make it hard for authorities and establishments to identify suspects accurately, retrieve reliable footage, and fully use CCTV for crime prevention and investigations (Kirui, 2024). The feedback from police officers shows that technical limitations are still a big concern in making the most of CCTV for crime investigations. They pointed out that poor video quality is one of the biggest problems. Unclear and pixelated footage complicates suspect identification, even with advanced tools. Connectivity problems, power outages, and limited storage capacity also disrupt the proper retrieval and preservation of evidence. Additionally, weak lighting, especially at night, further reduces camera effectiveness, making facial and plate recognition unreliable. Faulty or broken units in some places also obstruct access to critical footage when it's needed most. Overall, these limitations show the need for upgrading to high-definition cameras,

improving infrastructure, and ensuring regular maintenance to boost the reliability of CCTV systems.

“Before, the qualities of CCTVs were poor, and it was really challenging for us investigators reviewing the footage. It makes the identification of suspects difficult.” (P1)

“The challenge we usually encounter is the poor video quality of cameras, like when you zoom in on the footage, the image becomes pixelated. Even the cybercrime unit, at times, gets a hard time enhancing the image, so it’s really advisable to install cameras with high definition. It’s difficult unless there are eyewitnesses whose statements can corroborate the footage.” (P2)

“In terms of challenges, in our Command Center, are probably in terms of connectivity and power outages. When that happens, it shuts down totally, which will prevent us from extracting the footage. Other problems include the storage, which is limited, and its capacity would only last for about 30 days. In line with the investigation, the challenge that I usually encounter is with the lighting, especially at night. Other CCTVs have poor image quality. So even if we have facial and plate number recognition, it would still be useless if the footage has poor image quality and the area where it was captured doesn’t have sufficient lighting.” (P3)

“The limitations that we usually encounter are the unavailability of footage because some CCTVs are broken, inoperative, or faulty in some establishments.” (P4)

“During my time as in-charge personnel at the Command Center, the most common challenge I encountered was the lighting in some areas. The city is gradually increasing the installation of solar lights; however, not all of them can sustain for a longer duration, unlike other solar lights, which can light the streets even until morning. So, lighting is the problem.” (P5)

The response from Establishment 3 echoes the police's concerns by pointing out similar technical issues that limit the effectiveness of CCTV systems. The establishment noted that, in addition to electricity problems, connectivity is a major challenge. Both modern and solar-powered CCTVs need a stable internet connection to work properly. This ties in with the police's observations about power outages and storage issues, demonstrating that without reliable infrastructure, surveillance becomes less trustworthy. Additionally, the establishment stressed the need to invest in CCTVs with night vision capabilities to

tackle issues caused by poor lighting, a challenge mentioned by several police officers. This response supports the idea that improving technology and ensuring proper functionality are crucial for overcoming the technical barriers that diminish the role of CCTV in preventing and investigating crime.

“There are a few disadvantages of using modern CCTV cameras, aside from electricity, connection is also a problem. If you have no Wi-Fi, it can’t operate. So does solar-powered CCTV cameras; they also need Wi-Fi... That’s why I highly recommend, for those who are capable of making CCTV installations, choose a CCTV with a night vision feature.” (E3)

To sum it up, technical limitations greatly affect how well CCTV systems work for crime prevention and investigation. One major issue is poor video quality. Footage often becomes pixelated when zoomed in, making it hard to identify suspects. This problem remains, even with technical help, since improving low-resolution images is tough and usually needs additional evidence. Connectivity and power interruptions can also cause significant setbacks. Outages or unstable internet connections may lead to lost or inaccessible footage. Limited storage capacity makes things worse, as recordings often get overwritten quickly. This restricts their usefulness in long-term investigations. Another common problem is inadequate lighting, especially at night. This reduces the clarity of recordings and makes features like facial recognition or license plate identification ineffective. Broken or faulty cameras in some locations add to these limitations, preventing access to important evidence on time. To tackle these issues, investing in high-definition cameras with night vision is vital. Ensuring stable power and internet connections and conducting regular system checks are also essential. If these technical barriers are not addressed, CCTV systems may not reach their full potential as reliable tools for security and accountability.

Studies on the technical limits of CCTV systems highlight how video quality, storage capacity, lighting, and connectivity affect their effectiveness in crime prevention and investigation (Falangon, 2022). Research shows that low-resolution cameras often fail to capture clear images of suspects or license plates, making evidence less trustworthy in court (Viswanathan et al., 2025). Studies also indicate that limited storage, particularly in older systems, results in the early loss of critical footage (Bacci et al., 2021). Additionally, insufficient lighting at night reduces image clarity and complicates accurate identification (Madhan & Shanmugapriya, 2024). Furthermore, frequent technical failures, such as broken cameras or poor connectivity, weaken surveillance coverage and delay investigations (Nzesya, 2024; Singh et al., 2025). To solve these problems, establishments must invest in high-definition cameras with features like night vision, ensuring stable power and internet connections, and increasing storage capacities to keep recordings longer.

The findings suggest that while CCTV is a useful tool for crime prevention and investigation, ongoing technical limitations undermine its effectiveness. Poor image quality, inadequate lighting, limited storage, and connectivity issues lessen its reliability in identifying suspects and reconstructing events. These challenges imply that without proper investment in technology and infrastructure, CCTV systems may not achieve their intended goal of ensuring accountability and aiding law enforcement. The results also highlight the importance of regular maintenance, system upgrades, and strategic planning in deploying CCTV to address these weaknesses. Improving these technical aspects not only boosts the credibility of CCTV footage as evidence but also strengthens its role in promoting safety, deterring crime, and building public trust in surveillance systems.

Legal and Procedural Barriers to Accessing CCTV Footage

The legal and procedural barriers to accessing CCTV footage show the difficulties in obtaining surveillance recordings because of privacy laws and institutional protocols (Sijabat & Sirait, 2025; Baoyan, 2023). Although these barriers aim to protect data security, they often slow down investigations and delay the timely use of CCTV as evidence in solving crimes (Baoyan, 2023). Authorities stated that even in urgent situations, they cannot quickly access recordings from private businesses. They must first submit formal requests and get approval from management. In some cases, following the Data Privacy Act means they need to secure the owner's permission or even a court-issued warrant before reviewing footage. While these steps are important for protecting individual rights and privacy, they can also delay the swift resolution of cases where timely evidence is essential.

“Another thing is in the process of acquiring access to CCTV footage in establishments. Some of them, like several banks and malls, for example, even if we're the police, we always have to make a formal request first and get approvals from their heads or supervisors before we can look at their CCTV. That, sometimes, can hinder the speedy resolution of cases.” (P1)

“In terms of the process, we can't just simply check the footage of private establishments without permission or a warrant because it might violate the Data Privacy Act, so it would depend on the owner if they permit us with our request. If not, we have to apply for a warrant from the court.” (P2)

The establishment's response highlights the challenges mentioned by authorities. It confirms that access to CCTV footage is not given right away, even during law enforcement investigations. Establishments need police officers to officially request permission before they can review any recordings. In some cases, a warrant is also needed to meet legal requirements. This practice shows the need to balance cooperation with investigations and the protection of data privacy. However, it also points out how these

procedures can delay the process of gathering important evidence. By supporting the police's viewpoint, the establishment's response indicates that while procedural safeguards are important, they can unintentionally slow down crime resolution.

"To your question, if it were the police that made a request, naturally, they would have to ask for permission first. If they do, we will allow them. But from what I know, the police will also bring a warrant if they want to look at the CCTV of private establishments." (E2)

In short, legal and procedural barriers significantly limit access to CCTV footage, affecting crime investigations. Before private establishment recordings can be reviewed, formal requests and administrative approvals are often needed. This adds time to processes where immediate action may be necessary. Compliance with data privacy laws prevents access to surveillance footage without proper authorization. Violating these laws can lead to legal issues. In many cases, investigators require the property owner's consent. If permission is denied, they must obtain a court-issued warrant, which adds more time. Although these safeguards protect individual rights and ensure careful handling of sensitive data, they often delay the retrieval of key evidence in urgent situations. This conflict between protecting privacy and allowing timely information access shows a need for clearer guidelines and streamlined procedures that balance security, legality, and efficiency.

Barriers to accessing CCTV footage highlight the ongoing struggle between protecting privacy and resolving crimes quickly. Strict data protection laws in many countries necessitate formal requests, owner consent, or court-issued warrants for accessing surveillance recordings (Jabbari, n.d.; National Privacy Commission, 2024; Sijabat & Sirait, 2025). These requirements often slow down investigations. While these rules protect citizens from misuse of personal data, they also limit immediate access to

evidence in urgent cases (Baoyan, 2023). These studies emphasize the need to balance privacy protection with prompt evidence gathering to enhance the effectiveness of CCTV systems in preventing and solving crimes.

The findings indicate that while legal and procedural safeguards are necessary for protecting privacy and preventing misuse of surveillance data, they can also hinder the investigative process and limit the timely use of CCTV evidence. Delays from needing formal requests, owner consent, or court-issued warrants may impede swift action in urgent cases, potentially allowing offenders to avoid accountability. These insights underscore the need for clearer guidelines and streamlined protocols that weigh privacy rights against the urgent needs of law enforcement. Strengthening cooperation between establishments and authorities, along with developing standardized access procedures, could improve both efficiency and accountability in utilizing CCTV for crime prevention and investigation.

3. Examined how the information obtained from CCTV footage influences or informs intervention strategies employed by law enforcement and community stakeholders.

Reactive Backtracking and Suspect Identification

Reactive backtracking and suspect identification highlight the importance of CCTV in reviewing events and identifying individuals involved in crimes after they happen. CCTV provides a clear record of movements and incidents (Calimbo et al., 2024; Kaur et al., 2023). This record is valuable evidence that helps investigations, backs up eyewitness accounts, and improves accountability in legal matters (Kirui, 2024). CCTV footage is key in solving cases. It allows investigators to track the movements of suspects before, during, and after a crime (Sobko & Tesliuk, 2024). According to police officers, this process is

known as backtracking. It enables them to piece together the timeline of events and identify individuals who might have been involved or present at the scene. Even when suspects cannot be fully identified, the footage still provides them with useful descriptions. When combined with eyewitness accounts, these descriptions strengthen the investigation. In addition to aiding inquiries, CCTV recordings are also acceptable evidence in court. This underscores their role as dependable documentation that supports accountability and ensures that cases rely on solid evidence instead of assumptions.

“Aside from the fact that it’s a good deterrence, it also helps us resolve ongoing cases through its help in the identification of suspects as well as their movements before and after the commission of the crime.” (P1)

“In times when a case is too complex or puzzling for the investigating officer, as to the identity of the perpetrator, with the help of CCTV, we can do the thing we call “backtracking”. If there are incidents, we don’t just look at the actual incident; we also consider the things that transpired leading up to that incident. That is called backtracking. Through it, we can identify possible persons with an interest in that particular incident. Even when we can fully identify the criminal, at least we can get a short description just by looking at the footage captured by CCTV together with eyewitness statements.” (P2)

“It also aids us in investigations because it provides a record of the activities happening in a certain area. Since it provides a record, it can also be offered as evidence in court. It would be used as corroborative evidence.” (P3)

The perspective from the establishment reinforces the points made about the value of CCTV in tracking down suspects and identifying them. It highlights CCTV's role as an objective and tireless recorder of events. Unlike human memory, which can be selective or unreliable, CCTV provides a consistent account of what really happened. This ability to capture details without interruption makes it a powerful tool for uncovering the truth behind incidents and supporting investigations with solid evidence. The statement also stresses the strength of visual documentation, pointing out that seeing the actual footage is more convincing than just verbal testimonies. In this way, the establishment’s view supports the

idea that CCTV acts as both a deterrent and an important resource for reconstructing events and ensuring accountability.

“Nevertheless, CCTV offers great help because it provides a record of events. It doesn’t blink, unlike our eyes. And it also provides evidence as to what and how something had happened. As they say, ‘To see is to believe’ or ‘a picture speaks louder than words’.” (E4)

In summary, CCTV is a valuable tool for solving crimes. It discourages criminal behavior and provides clear records that help reconstruct events. Investigators can analyze the footage to track the actions of individuals before, during, and after an incident. This helps them piece together what happened and identify suspects. Even if full identification isn’t possible, CCTV still gives useful descriptions that, along with other evidence, make the case stronger. Its ability to record events continuously and without bias is especially helpful. This reduces dependence on memory or conflicting statements. The footage can also act as supporting evidence in court, giving judges visual proof that backs up or refutes claims. Basically, CCTV’s constant surveillance ensures that important details are kept, making it an essential tool in investigations and the quest for justice.

Backtracking and suspect identification highlight the important role of CCTV in piecing together criminal events and supporting investigations. Research shows that surveillance footage helps investigators track the movements of suspects and potential witnesses (Kirui, 2024). This provides context that goes beyond the incident itself. Even partial information, like physical descriptions or behavior patterns captured on camera, can significantly narrow down leads when combined with eyewitness reports (Aung & Kusakunniran, 2024). Moreover, studies stress that CCTV footage is valid evidence in court (Baoyan, 2023; Pei, 2025; Togatorop et al., 2020). Its objectivity supports legal processes by backing up testimonies and establishing timelines (Kirui, 2024). Overall,

research confirms that CCTV improves investigative accuracy, assists in identifying suspects, and increases accountability (Brookman & Jones, 2022; Inzana et al., 2024). It is a crucial tool for both preventing and solving crimes.

The results indicate that CCTV is essential for enhancing investigations. It allows authorities to reconstruct events, identify suspects, and provide solid evidence for legal processes. Its role as an objective recorder of activities ensures that key details are preserved, which lessens reliance on inconsistent statements. This shows the need to maintain and upgrade surveillance systems to ensure clear and reliable footage that can be used as trustworthy evidence in court. Additionally, the findings suggest that incorporating CCTV into larger investigative strategies not only helps resolve cases but also promotes accountability and public trust in the justice system.

Proactive Real-time Monitoring and Dispatch

Proactive real-time monitoring and dispatch show the importance of watching CCTV footage closely to spot suspicious activities as they occur and respond right away. This method combines ongoing monitoring with quick communication and personnel deployment (Papale, 2024). It changes surveillance from merely reactive to a more preventive approach to crime. Proactive monitoring stresses the need for CCTVs to be observed in real time, allowing for quick detection and response to unusual activities (Piza & Moton, 2023). Continuous surveillance helps identify suspicious behavior before crimes escalate, so authorities can send personnel to the scene immediately (Papale, 2024). Regular system checks and reliable communication channels support this approach, ensuring that cameras work properly and responders can act quickly. By pairing constant

vigilance with quick response strategies, proactive monitoring turns CCTV from a simple recording tool into a key part of crime prevention.

“CCTVs are more effective when manned. If unmanned and not monitored 24/7, the police would become reactive instead of proactive. Compared to manned CCTV, if there are suspicious persons or activity captured in a specific location, we can dispatch our patrolling officers to go and look after that area. There are times also, where criminals, despite knowing that there are CCTV, will still pursue their bad intentions. All they have to do is cover their faces with masks or even find ways not to be seen, just like what happened in Gaisano. If CCTVs are manned, at least we can thwart anyone with bad intentions from pursuing what they have in mind. That is crime prevention.” (P2)

“Our most effective strategy would be the daily check-ups of CCTVs, if they’re still functional, as well as the 24/7 monitoring of live footage. Since we have radio communication, if a suspicious activity is discovered, the response is quick.” (P4)

“In terms of strategies, we assigned teams of personnel to monitor the CCTVs in the Command Center. So, once they notice any suspicious activity, they would communicate with us through our radio, and we can then go to the area.” (P5)

The response from the establishment supports the idea of proactive monitoring by highlighting the importance of having more people and technology focused on potential risks. Real-time surveillance allows for a quick response to suspicious activity. Having additional staff provides immediate oversight that can deter or prevent crimes. The establishment also recognized that CCTV not only records incidents but also acts as a strong deterrent, discouraging individuals with bad intentions from acting out of fear of being identified. This view emphasizes prevention. Combining manpower with active surveillance creates a safer environment and lowers the chances of repeated incidents.

“Some strategies that we could use to prevent recurring incidents are hiring additional employees for additional eyes to watch over the restaurant. The restaurant is wide-open, so if there are more employees, there will also be more chances to mitigate the occurrence of crime...It’s really useful to have CCTV because we can’t predict if anything bad will happen, and it’s useful to keep a record of the events. Aside from that, it’s a very effective deterrence. People with bad intentions will be prevented from committing a crime out of fear of being identified....” (E1)

To conclude, proactive real-time monitoring shows that CCTV should be used not just for recording but also as a tool for crime prevention. When surveillance systems are staffed around the clock, it is easier to spot suspicious behavior immediately. This allows authorities or staff to intervene before situations escalate. This approach shifts responses from reactive to preventive since monitoring teams can quickly send help to areas with unusual activity. Regular maintenance of cameras and ongoing checks of their functionality keep the system reliable and effective. Additionally, adding human oversight, like having staff watch and respond, enhances security by complementing the technology of CCTV. Beyond just capturing evidence, the visible presence of monitoring and extra supervision discourages people from committing crimes due to the fear of being caught. Together, these strategies show that combining technology with human attention improves the overall effectiveness of surveillance systems in ensuring safety and reducing crime.

Proactive real-time monitoring and dispatch highlights that surveillance systems work best when they include active human oversight and quick response strategies (Papale, 2024). Around-the-clock monitoring deters potential offenders, knowing that odd behavior will be noticed and acted upon quickly (Aballe et al., 2022). It is also crucial to couple CCTV with effective communication systems to facilitate rapid coordination between monitoring centers and staff on the ground (Kirui, 2024). Regular maintenance and removing blind spots help keep cameras reliable for detecting threats (Choi et al., 2023; Shukla et al., 2021). Overall, the literature confirms that active monitoring turns CCTV from a simple recording tool into an effective means for deterring crime, preventing incidents, and speeding up law enforcement responses.

The findings suggest that CCTV reaches its full potential when combined with proactive monitoring and quick response strategies rather than just being a passive recording system. Ongoing observation, regular maintenance, and solid communication networks make it possible to spot and address suspicious activities before they turn into serious crimes. This method shows the need for enough manpower and resources to support monitoring efforts, along with investments in dependable infrastructure to maintain 24/7 operations. By merging technology with human awareness, surveillance systems provide not just evidence after incidents but also a strong means for deterrence and immediate action, ultimately enhancing public safety and building community trust.

4. Determined effective practices and strategies that enhance the utilization of CCTV data for crime prevention and resolution.

Strategic Deployment of Resources

Strategic deployment of resources shows how information from CCTV footage guides the placement of security measures, staffing, and infrastructure upgrades in areas most at risk for crime. By pinpointing high-risk locations, examining criminal behavior, and studying movement patterns, CCTV helps create targeted plans that improve visibility, readiness, and safety (Kim et al., 2021; Maroma et al., 2024; Sobko & Tesliuk, 2024). CCTV plays a key role in guiding resource allocation by providing insights that help decide how and where to boost security measures. Analyzing surveillance footage allows authorities to identify high-risk areas and blind spots, enabling them to position cameras and deploy staff more effectively (Maroma et al., 2024). This information also helps in understanding criminal patterns and behaviors, leading to the development of proactive

strategies to prevent future incidents (Sonowane et al., 2025). Additionally, CCTV data aids in operational planning by revealing essential details like entry and exit points and potential hiding spots, ensuring that responses are well-coordinated and thorough (Kirui, 2024). In summary, surveillance technology not only supports investigations but also shapes long-term planning to improve visibility and safety in vulnerable areas.

“Aside from being used as support in investigations, the information we obtained from it can give us directions on how to respond to specific incidents. Also, it can identify what needs to be improved in a particular location in terms of security.” (P1)

“By analyzing CCTV, we can identify which areas are more prone to crime and which areas could be targeted by crime. Some criminals observe the activities of our police. If they knew when and where the police would be, they would target the area that doesn’t have them. With that kind of information, we get from CCTV, we can create a plan on how to optimize police visibility.” (P2)

“Based on observation, one successful strategy employed by the LGU is the installation of CCTVs in areas where it can be considered a blind spot if they weren’t installed with CCTVs. That practice or strategy further strengthens the capacity of CCTV to identify individuals and to capture a wider view of a location... The information we obtained from CCTV footage is used, as mentioned earlier, to identify suspects, to track their movements, and to reconstruct the events that had occurred. It also helps us determine what other resources we should allocate when responding to a reported crime or incident.” (P3)

“Other strategies we employ, of course, after careful study of areas where crimes or accidents usually occur, like on highways and in secluded places, CCTVs are installed there, as a result.” “Because of it, we can study the behavior or specific movements of criminals, especially when we do a backtrack. From that, we can create a plan to avoid something bad from happening again or prevent criminals from pursuing their intentions.” (P4)

“Not only that, but by analyzing CCTV, if we were ever to conduct an operation in a particular area, the information about that location that we can obtain from CCTV would be beneficial in creating a comprehensive plan to effectively conduct the operation. Like, we can determine possible entry and exit points, where people could hide, and the like.” (P5)

The response from the establishment backs up the points made about the smart use of resources. It shows how CCTV can help spot potential problem areas and shape

preventive measures. In this case, surveillance helps identify where students might engage in negative behaviors. This information is used to decide whether to install more cameras, add staff, or look into other ways to improve safety. This reflects how CCTV is used more broadly to find high-risk spots and allocate resources better. It ensures that interventions are focused and effective. By connecting surveillance data to real actions, the establishment demonstrates that CCTV not only records incidents but also aids in proactive planning to improve security and avoid future problems.

“From my answer on the previous question, it really helps, especially if we could see that there are potential areas wherein the students could exhibit certain negative behaviors. It can add to strategic planning on whether to add more CCTV footage, to hire additional manpower, or to check if there are other means wherein the school could improve the safety and security of the learners.” (E5)

To sum up, strategically using resources is one of the most important ways CCTV contributes to preventing crime and managing security. By studying surveillance footage, we can spot areas that are more at risk, like blind spots, isolated locations, or places where bad behavior often happens. This information helps decision-makers figure out where to install more cameras, assign staff, or upgrade infrastructure to boost overall security. Besides just placement, CCTV also aids in understanding criminal behavior and movements, which helps in creating focused strategies to prevent future incidents. The data collected can also aid in planning operations, like finding possible entry and exit points or spotting potential hiding places during enforcement actions. In institutional settings, this information can determine whether to extend surveillance coverage, increase staff, or introduce other safety measures to create a secure environment. CCTV shifts from merely recording to becoming a key tool that informs planning, resource use, and proactive actions aimed at improving safety and security.

Research on the strategic use of resources shows how essential CCTV is in helping make evidence-based decisions for enhancing security and safety. Studies find that surveillance systems can point out high-risk areas, allowing authorities to use manpower, infrastructure, and technology more effectively (Maroma et al., 2024). Research also highlights how CCTV facilitates the identification of blind spots, tracks criminal patterns, and watches vulnerable areas, guiding where safety measures should be prioritized (Eran & Hasranizam, 2024; Shukla et al., 2021). Additionally, studies indicate that data from surveillance not only supports immediate action but also aids long-term planning by offering insights for urban design, traffic management, and community policing efforts (Eran & Hasranizam, 2024; Tahir et al., 2023; Yang et al., 2024). Overall, findings show that CCTV improves efficiency in deploying resources, ensuring that security measures are focused and sustainable.

The results suggest that CCTV is not just useful for recording incidents; it also acts as a vital tool for planning and resource allocation in enhancing security. By identifying high-risk areas, monitoring behaviors, and exposing operational blind spots, CCTV provides valuable data that can influence where to place cameras, assign personnel, and upgrade infrastructure. This ensures resources are used wisely, maximizing their effect on preventing crime and managing safety. The findings further emphasize the need to include CCTV analysis in long-term planning, as it encourages proactive steps instead of just reacting to events. The results imply that effectively using CCTV for strategic purposes strengthens security systems, increases readiness, and creates safer communities.

Technological and Infrastructure Enhancement

Technological and infrastructure enhancement focuses on upgrading CCTV systems with high-definition cameras, features like AI integration, and broader coverage to eliminate blind spots. It also highlights the need for regular training, research, and infrastructure support to boost the effectiveness of surveillance in preventing and investigating crime. Improving CCTV effectiveness requires both tech upgrades and better infrastructure. Adding cameras in blind spots and high-risk areas provides better visibility and deters crime (Lawrence et al., 2022). High-definition systems with zoom capabilities are recommended to enhance footage clarity. Integrating advanced technologies like artificial intelligence can help identify and track individuals more quickly (Pazho et al., 2023). Continuous staff training is crucial to ensure that those operating the CCTV can fully utilize its features and present findings effectively (Nugroho et al., 2023). Requiring both public and private facilities to adopt reliable surveillance systems strengthens community security, making CCTV more than just a tool for recording; it becomes a key measure in preventing and addressing crime.

“In relation to my answer, I think we should add more CCTV around Ozamiz, though, as I said that CCTVs are now everywhere, for me, if we really want to enhance their effectiveness, especially in investigations, then we should install more.” (P1)

“To enhance the effectiveness of CCTV in crime investigation and intervention, owners of CCTV should identify and eliminate blind spots by installing more CCTV in their property. The quality should also be in HD and should be capable of zooming in and out. The flow of traffic on roads should also be studied so that backtracking would become easier by using CCTV. Training is also important. There should be seminars held annually, monthly, if possible, or any programs that refresh an officer's knowledge. Even now, there are still officers who remain traditional; officers should adapt as well.” (P2)

“To enhance the effectiveness of CCTV, we must invest in the most up-to-date versions of CCTVs, not in the outdated type. I also believe that the city needs

additional CCTVs. Also, maybe we can integrate AI with CCTV that can instantly recognize an individual with support from a database, like AFIS for fingerprints, for example. It would be easier and more convenient. Training personnel are also important. Especially, when you get invited to court as an expert witness, how will you be able to explain your findings if you don't have knowledge or training with CCTV?" (P3)

"To enhance its effectiveness, I think we should install more CCTVs, not only to provide records of events but also to create deterrence. I also think that we should strictly require establishments, even private homes, to install CCTV. That would enhance their effectiveness." (P4)

"I also hope that one day, we can integrate AI with CCTV. It would be good if there were a program that could instantly recognize a person and track his or her location to eliminate the difficulty of doing backtracking." (P5)

The response from the establishment backs the call for better technology and infrastructure by stressing the need for ongoing research and innovation in CCTV systems. Just as there is a push to upgrade to high-definition and AI-integrated cameras, the establishment points out that new ideas and advancements can further improve the reliability and effectiveness of surveillance. The suggestion to install more cameras, especially in public spaces and on streets, fits with the broader view that expanding coverage boosts deterrence and provides greater security for communities. By supporting both innovation and wider deployment, the establishment emphasizes that effective CCTV systems need not only improved technology but also smart government investment in infrastructure.

"If I were to answer what needs to be done to enhance the effectiveness of CCTV, I would say that people should do more research about CCTV. Maybe from that, people could come up with new ideas that can enhance CCTV technology further... I strongly suggest that the local government should install more CCTV cameras around, corner to corner if possible, especially in the streets." (E2)

To conclude, improving CCTV effectiveness relies on technological upgrades and better infrastructure to boost quality and coverage. Adding more cameras, especially in

public places and high-risk areas, increases visibility and reduces blind spots that criminals might exploit. Upgrading to high-definition systems with zoom features allows for clearer identification of people and vehicles. Integrating artificial intelligence enables real-time recognition and tracking, which simplifies incident investigations. Regular training programs are also important. They help personnel develop the skills necessary to maximize these technologies and accurately interpret data for investigations or legal cases. Establishing standard practices, along with ongoing research and innovation, can further enhance CCTV systems and assist them in meeting changing security needs. Additionally, encouraging private and public organizations to invest in modern surveillance builds a more connected safety network. This approach turns CCTV into not just a source of evidence but also a proactive tool for deterring crime and protecting communities.

Research on improving CCTV systems stresses the need for ongoing innovation to enhance their effectiveness in preventing and investigating crime. Upgrading to high-definition cameras with features like zoom, night vision, and wide coverage boosts the clarity and reliability of footage (Agurob et al., 2024; Kim et al., 2021; Valentino & Leonen, 2023). Researchers point to the growing potential of artificial intelligence, which allows for real-time facial and object recognition, automated alerts, and predictive mapping of crime (Ahmad, 2025; Pazho et al., 2023; Suthahar et al., 2025). They also emphasize the need to expand infrastructure by addressing blind spots, ensuring a steady power supply, and increasing data storage to prevent losing important evidence (Abd Rahim et al., 2025; Choi et al., 2023; Nikhilesh et al., 2022). Training and sharing knowledge are crucial for equipping users to operate modern systems effectively (Nugroho et al., 2023).

These findings confirm that combining tech upgrades with strong infrastructure and trained personnel improves the efficiency, accuracy, and deterrent value of CCTV systems.

These results suggest that without ongoing technological improvements and infrastructure upgrades, CCTV systems may struggle to meet today's security challenges. Investing in high-definition cameras, AI integration, and wider coverage can significantly enhance accuracy in identifying suspects, monitoring, and preventing crime. At the same time, boosting storage capacity, ensuring stable power and connectivity, and providing regular user training are vital for maximizing the system's potential. These results point to the need for both government and private sectors to prioritize modernizing surveillance as part of broader safety strategies. Improving CCTV technology and infrastructure not only strengthens its role as evidence in investigations but also boosts its preventive capacity, leading to safer communities.

CONCLUSION AND RECOMMENDATIONS

The study concludes that CCTV is highly effective at documenting traffic-related incidents and crimes against persons and property, supporting both investigations and preventive measures for public safety, while also proving its usefulness in retracing incidents and narrowing down possible offenders to add depth to investigations and ensure accountability. However, challenges like poor video quality, limited storage, weak lighting, and legal or procedural barriers limit its full potential in providing timely and reliable evidence. Therefore, the study emphasizes the need for proactive monitoring and strategic use of resources, and ongoing improvements in technology and infrastructure to enhance CCTV's role in crime prevention and in creating a more accountable and secure environment where the community can truly feel safe.

Based on the results, it is recommended to improve CCTV effectiveness through a combination of technological, procedural, and strategic measures. Upgrading systems with high-definition cameras, night vision, and AI integration should be a priority. This will help overcome technical limitations and improve identification accuracy. Regular maintenance, staff training, and expanding coverage to blind spots and high-risk areas will ensure reliability and broader protection. Simplifying legal and procedural processes while maintaining privacy protections can also speed up access to important footage during investigations. Finally, CCTV data should be used for proactive strategies like real-time monitoring, strategic resource deployment, and infrastructure planning. This will enhance both crime prevention and law enforcement response, ultimately contributing to safer communities.

DECLARATION OF THE USE OF AI TOOLS

We acknowledge the use of ChatPDF to scan and read existing studies about CCTV, and used it to identify what study we could conduct based on its results and recommendations. We also used ChatPDF to identify other relevant topics for the rationale/background of our study based on the approved title that we created.

Prompts:

- Based on the results and recommendations, generate a list of studies we could conduct.
- Based on our title, help me identify other possible topics we could add to our rationale. Organize it from broad to specific.

We also acknowledge the use of ChatGPT to help us revise the abstract of the study, and used it also to help us improve our paragraphs and the interview questions.

Prompts:

- Improve the following paragraphs: (Paste)
- Improve the following questions for the interview guide: (Paste)
- Revise the abstract of the study. Add one sentence at the beginning of the paragraph summarizing the rationale/background of the study.

We also acknowledge the use of the Grammarly app to correct spellings, spacing, and grammar, such as sentence construction, tenses, and punctuation, from the abstract up to the transcript of the interview.

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APPENDIX A

INTERVIEW PROTOCOL

Introduction:

1. Thank the participant for their time and willingness to participate in the study.
2. Briefly explain the purpose of the interview.
3. Inform the participant of confidentiality and the voluntary nature of the interview.
4. Ask for informed consent to record the interview for accuracy.

Opening Questions

1. Would you kindly share your name, age, and current role or position?
2. How long have you been involved in your current role?
3. Have you had any previous experience working with CCTV footage in crime-related cases?

Core Questions

1. In your experience, what type of criminal activities are most commonly captured on CCTV in your area?
2. What are the common challenges or limitations you encounter when using CCTV footage for investigations?
3. In your experience, how do CCTV-based interventions impact crime and community safety?
4. Based on your experience, what strategies or practices have been most successful in using CCTV data to prevent recurring crimes or resolve ongoing cases?
5. How is the information obtained from CCTV footage used to inform or plan intervention strategies?

6. What factors or resources do you think could enhance the effectiveness of CCTV in crime investigation and in creating effective intervention schemes?

Concluding Statements

1. Express appreciation to the participant for sharing their experiences and insights.
2. Ask if there is anything else they would like to add or if they have any questions regarding the study.
3. Express your gratitude for their time and the value of their contribution to the research.

APPENDIX B-1

TRANSMITTAL LETTERS



Republic of the Philippines
CITY ADMINISTRATOR'S OFFICE
City of Ozamiz



**ASENSO
OZAMIZ**

18 August 2025

DR. JOSE F. CUEVAS JR.
College Dean, College of Criminology
Misamis University

THRU: **MR. ARNIL P. LABUANAN**
Group Leader

Dear Mr. Labuanan,

Consent is hereby granted for the conduct of *face-to-face interviews with the local police and establishment owners in Ozamiz City* as a requirement for the course of Criminology Research 1 and 2, entitled "*An eye of Justice: A Case Study on Crime Case Analysis Using CCTV Footage*", provided, proper consent is secured from the business owners. Further, the written copies thereof, along with a copy of the research findings be furnished to this Local Government.

Please ensure that all necessary preparations are made for the orderly conduct of the activities with strict adherence to applicable health and safety protocols.

For guidance and information.

Sincerely yours,


RUTHEZA GRACE A. OUANO
City Administrator

Copy furnished:
City Mayor's Office
Ozamiz City Police Station

2nd Floor Executive Building, City Hall Drive, Aguada, Ozamiz City, Misamis Occidental 7200
Email Address: asensoozamizcadm@gmail.com | Contact No: (0931) 7683853

APPENDIX B-2

TRANSMITTAL LETTERS



Misamis University
Ozamiz City
College of Criminology



July 23, 2025

PLTCOL. HARVEY S. ABELLANOSA
Officer-in-Charge
Ozamiz City Police Station

Dear PTCOL. Abellanos;

Greetings of Peace!

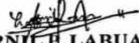
We are Bachelor of Science in Criminology students at Misamis University, Ozamiz City, conducting a thesis study entitled *"An Eye of Justice: A Case Study on Crime Case Analysis Using CCTV Footage"* as a requirement for our Criminological Research 1 & 2 course.

We humbly request your approval to conduct face-to-face interviews with police personnel and establishment owners in Ozamiz City. The information gathered will be kept confidential and used exclusively for research purposes.

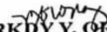
We assure you that informed consent will be obtained from the participants and all necessary protocols will be observed.

Thank you for considering our request.

Respectfully yours,

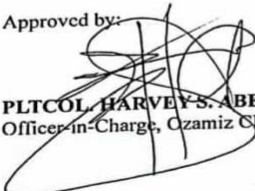

ARNILD LABUANAN
Group Leader
09052172899

Noted:


MARK Y. ORONG, DIT
Instructor


JOSE F. CUEVAS JR., PhD
College Dean

Approved by:


PLTCOL. HARVEY S. ABELLANOSA
Officer-in-Charge, Ozamiz CPS

APPENDIX C

TRANSCRIPTS OF THE INTERVIEW

Establishment 1 (Kent, 26, Restaurant Co-owner)

We started opening in March this year. Since we started here, we have not witnessed any major incidents like a vehicular collision or reports relating to lost personal belongings. There are times, however, when customers don't pay or forget to pay for the food that they order. Sometimes, those who forgot their payment come back to apologize and pay. They would say, "Kuya, we forgot our payment." They feel guilty and embarrassed. I lived in Bagakay, and vehicular accidents are frequent there. From what I noticed, when there are belongings left in the open, they get stolen by other people. I also get worried about people entering here without permission with the intention of stealing, because, as you see, our restaurant is very open and we only have one gate that can be easily damaged. We also have additional security in our cash register, only for extra precautionary measures, and not because we don't trust our employees. Of course, we want them to be honest with us, but that's not the main reason why. The main challenge in utilizing CCTV is when we review the footage. Although we don't review them all the time, when we do, it's a hassle. We only review them once in a while, only at times when I'm not around during opening hours in the restaurant. CCTV is essential because, for example, if there's a collision on the road or a person complaining about getting 'side swept' in our parking area, it would help identify which of them is responsible. It's essential because it can tell you the truth, that that's what really occurred. Some strategies that we could use to prevent recurring incidents are hiring additional employees for additional eyes to watch over the restaurant. The restaurant is wide-open, so if there are more employees, there will also be more chances to mitigate the occurrence of crime. Additionally, there are police officers doing patrols almost every day. Sometimes, they would post near 7-Eleven, so when there are any incidents, they can respond quickly. It's really useful to have CCTV because we can't predict if anything bad will happen, and it's useful to keep a record of the events. Aside from that, it's a very effective deterrence. People with bad intentions will be prevented from committing a crime out of fear of being identified, which is why it's good to encourage all business owners to install CCTV.

Establishment 2 (Mary, Purchaser/Supervisor).

This establishment started operating in 2015, and I've been supervising it for more than a year already. So far, since 2015 until now, we haven't yet experienced being targeted for a crime, but we have several experiences aiding people in finding their personal property that they may have lost while inside our store. Our CCTV has also been useful in finding motorcycles that may have been stolen. We have received many requests similar to that when they don't know whether it was stolen or moved. One challenge in utilizing CCTV is when we review the footage. For example, I received a request from a customer. I would ask them first around what time he/she has visited the store, and suppose they say in the afternoon, I would review the footage from 12 PM until I find the footage they asked for. That's why I could say that it is very difficult and tiring because the process will take a very long time. To your question, if it were the police who made a request, naturally, they would have to ask for permission first. If they do, we will allow them. But from what I know, the police will also bring a warrant if they want to look at the CCTV of private establishments. On the other hand, CCTV is a great help. It provides evidence of what had

happened, and on our side, it also encourages transparency. We can review to see if any customers have not paid or customers we have not given change to, especially when we get too busy. There's a practice that the owner does that might help resolve ongoing cases, and that's by keeping CCTV data on a flash drive. It is very convenient. We have also adopted modern improvements. We have two groups of CCTVs installed; the first group is connected to the owner's phone, and the second group is connected to the monitors we have in the back. If I were to answer what needs to be done to enhance the effectiveness of CCTV, I would say that people should do more research about CCTV. Maybe from that, people could come up with new ideas that can enhance CCTV technology further. As I said earlier, CCTV can be evidence, and by analyzing it, we can understand why people behaved in a certain way, for example, in our store, maybe people were driven to commit crimes because they believed that no one could see them, or we can identify which area in the store customers usually go to, something like that. I strongly suggest that the local government should install more CCTV cameras around, corner to corner if possible, especially in the streets. Especially because incidents like kidnapping and carjacking are prevalent nowadays.

Establishment 3 (Raem, 36, Homeowner)

I've been a resident of Barangay Tinago for more than three years. We have direct experience of crime being committed against us, when my nephew visited our house, their branded footwear was stolen. It was captured by our CCTV, and we later filed a report at the police station. He was jailed for about three or six months, I think. The most common criminal activity captured by CCTV in our area is stealing. Just like recently, someone's wallet was stolen, and we're told that it was thrown in a river, which happens to be near our house. That's what we are investigating now. There are a few disadvantages of using modern CCTV cameras, aside from electricity, connection is also a problem. If you have no Wi-Fi, it can't operate. So does solar-powered CCTV cameras; they also need Wi-Fi. That's one of the developments; it's equipped with a SIM card, and all you have to do is subscribe to a promo. CCTV is really practical because it saves you the effort of going around and asking someone about what happened or who committed the crime. Not only is it a good deterrence, but it also provides useful evidence. With its modern advancement, criminals will now be easy to identify because of its enhanced video and audio quality. There are also security cameras, like in our house, which can turn 360 degrees. Other than CCTV cameras, we also make sure that our house is well-lit. That's why I highly recommend, for those who are capable of making CCTV installations, choosing a CCTV with a night vision feature. Also, it's better to add additional security features in our homes, like putting grills around your doors and windows that even a child cannot go through, because some criminals have a 'modus operandi' of using children to steal, since they can't be penalized due to their age. Another, the government should equip the streets with more CCTV so that identifying the perpetrator would become easier. I also commend the law enforcement because I noticed that they are really active, like if you report something, they would respond immediately. The information coming from CCTV can give us an insight into what is lacking. For example, since some criminals are not really afraid of being caught or have found a way to conceal their identity in front of the cameras, you would be able to identify what could be improved. In that example, in my opinion, we shouldn't just rely solely on CCTV; I believe that it's also important to apply additional security. Aside from encouraging everyone to install security cameras, I also suggest that the BPAT and the police should work with each other, like in patrolling and roving.

Establishment 4 (Vin, 40, Store Owner)

I've been selling here for three years, and so far, thankfully, my store has not yet been targeted for a crime. It could be because I have CCTV installed that no one would dare commit a crime. Since this is the only place I go to almost every day, here in the Public Market, I don't usually get to observe what's been going on outside. But, based on what I hear from the news and from the gossip around, the most common criminal activity captured in CCTV is theft, robbery, or traffic incidents. The problem with CCTV is the process of reviewing the footage. It is difficult and would take a lot of time, most especially because there are a lot of buttons to press before it could provide a playback. Also, it's only when you review the footage that you would get to discover a crime being committed in your store. By the time you find out, it's already too late. The quality also plays a big factor, and it would depend on the kind of CCTV you would install. If you go for something cheap, then its quality would also be cheap. So, I suggest that everyone should go for the better version. It depends on your capacity to buy. The same goes for the storage. Nevertheless, CCTV offers great help because it provides a record of events. It doesn't blink, unlike our eyes. And it also provides evidence as to what and how something had happened. As they say, 'To see is to believe' or 'a picture speaks louder than words'. As I said earlier, I have not yet experienced being targeted for a crime, so I wouldn't know based on CCTV data what strategies or practices I need to employ. As of now, CCTV is all I depend on. Nowadays, there are many kinds of CCTV. There is what we call 'Tapo', or those CCTVs that are very affordable, like those cameras that can be connected to your phone. The only disadvantage of it is the storage. Unlike those, like mine, it is connected to a monitor that has a large memory. I think it's in terabytes, two terabytes. It can store up to three months' worth of footage. And what's greater is that it would only start to record when there is movement, and also, that's the only time that it would start to eat storage. With that, I think we should look for ways to improve the storage of all other kinds of CCTV systems in a way that won't cost users a lot of money. I'm hoping that that would become possible. Since modern CCTVs can detect and track movements, the information we could get from that would help us identify possible threats. In that way, we can intervene before incidents occur. But that would only work if someone were to monitor the footage 24/7 or if it notifies your devices immediately once an unusual activity occurs.

Establishment 5 (Lyn, 31, Guidance Counselor)

I have been working in the Department of Education as a school guidance counselor for six years already. Yes, I have experience in working with CCTV footage in crime-related cases. In our school, we usually experience some cases of potential stealing among our students or loitering and cutting classes. These activities are mostly captured by our CCTV footage and have helped the school administration to pinpoint these activities among our learners. In our case, since our CCTV footages are limited in number, we could not capture other areas of the school. Apart from that, the quality of the footage could also affect the investigation of the school administration in pointing out the real perpetrators or persons of interest during such alleged crimes. I believe having CCTV footage around institutions, especially in a campus wherein we have a lot of students with different personalities and behavior, has provided additional precautionary measures in providing safety and a child-friendly environment for all our learners. It has also implemented easier and more accessible measures in eradicating misbehavior and potential criminal liabilities among our learners. I believe that one of the most effective means of using the CCTV is studying and highlighting which area is most suitable for the CCTV to be located. I think that's one of the best practices we do, to identify which areas they must be put in or must prioritize in putting these CCTV monitors or CCTV

devices. Especially in our case, we usually put them in areas where students tend to lurk around or where stealing could happen, or when students could start doing misbehaviors, like at the gates, to check if the motorcycles of our learners are safe, the entrance and the exit points, to check also who is coming in and coming out of the school. I think that having CCTV is already enough, and it is a very good addition to the safety and security of every institution. But since technology is evolving, and we don't know what other inventions will come out in the next months, days, or years from now, I think it is also nice if each CCTV device could add alarms. Aside from directly capturing the event, it could directly notify administrators, company owners, or house owners if something is going on right on track or directly to the point. I think that's it. Aside from that, each institution should also get or invest in high-quality CCTV cameras so that it would be easier to track or locate, or to use the recorded situations in each CCTV device. From my answer on the previous question, it really helps, especially if we could see that there are potential areas wherein the students could exhibit certain negative behaviors. It can add to strategic planning on whether to add more CCTV footage, to hire additional manpower, or to check if there are other means by which the school could improve the safety and security of the learners.

Police 1 (Harry, Investigator)

I have been in service for 15 years already, since July 2010, when I took the oath. I've been an investigator for seven years. I have multiple experiences with investigations using CCTV. From experience, the most common criminal activity captured in CCTV is the killing of persons using a firearm, shooting incidents, in short. Most of them happened back in the day. They were prevalent. Before, the qualities of CCTVs were poor, and it was really challenging for us investigators reviewing the footage. It makes the identification of suspects difficult. But nowadays, thankfully, most CCTVs installed by establishments have better quality. Another thing is in the process of acquiring access to CCTV footage in establishments. Some of them, like several banks and malls, for example, even if we're the police, we always have to make a formal request first and get approvals from their heads or supervisors before we can look at their CCTV. That, sometimes, can hinder the speedy resolution of cases. Regardless of that, CCTV has a really good impact. It helps us in law enforcement in curbing crime. Aside from the fact that it's a good deterrence, it also helps us resolve ongoing cases through its help in the identification of suspects as well as their movements before and after the commission of the crime. The most successful strategy that has been used to prevent crime is the additional installation of CCTV by the City LGU, and that's per Barangay. Before, it was limited, but now, everywhere you go, be it in public or private, there's CCTV. In relation to my answer, I think we should add more CCTV around Ozamiz, though, as I said that CCTVs are now everywhere, for me, if we really want to enhance their effectiveness, especially in investigations, then we should install more. Aside from being used as support in investigations, the information we obtained from it can give us directions on how to respond to specific incidents. Also, it can identify what needs to be improved in a particular location in terms of security.

Police 2 (Adonis, 36, Investigator)

I am 14 years in service and have been an investigator for more than four years. I did have experience working with CCTV in crime investigation. Usually, the most common criminal activity captured in CCTV ranges from simple traffic violations to theft or robbery, and heinous crimes like murder, homicide, and sometimes a combination, like robbery with homicide. Those crimes are usually committed at the least expected times. CCTVs are really useful, especially at times like that; security cameras become your eyes and ears. The challenge we usually encounter is the poor video quality of cameras, like when you zoom in on the footage, the image becomes pixelated.

Even the cybercrime unit, at times get a hard time enhancing the image, so it's really advisable to install cameras with high definition. It's difficult unless there are eyewitnesses whose statements can corroborate the footage. In terms of the process, we can't just simply check the footage of private establishments without permission or a warrant because it might violate the Data Privacy Act, so it would depend on the owner if they permit us to make our request. If not, we have to apply for a warrant from the court. Overall, CCTVs offer great help. In times when a case is too complex or puzzling for the investigating officer, as to the identity of the perpetrator, with the help of CCTV, we can do the thing we call "backtracking". If there are incidents, we don't just look at the actual incident; we also consider the things that transpired leading up to that incident. That is called backtracking. Through it, we can identify possible persons with an interest in that particular incident. Even when we can fully identify the criminal, at least we can get a short description just by looking at the footage captured by CCTV, together with eyewitness statements. The fiscal and courts also accept that kind of evidence. CCTVs are more effective when manned. If unmanned and not monitored 24/7, the police would become reactive instead of proactive. Compared to manned CCTV, if there are suspicious persons or activity captured in a specific location, we can dispatch our patrolling officers to go and look after that area. There are times also, where criminals, despite knowing that there are CCTV, will still pursue their bad intentions. All they have to do is cover their faces with masks or even find ways not be seen, just like what happened in Gaisano. If CCTVs are manned, at least we can thwart anyone with bad intentions from pursuing what they have in mind. That is crime prevention. To enhance the effectiveness of CCTV in crime investigation and intervention, owners of CCTV should identify and eliminate blind spots by installing more CCTV in their property. The quality should also be in HD and should be capable of zooming in and out. The flow of traffic on roads should also be studied so that backtracking would become easier by using CCTV. Training is also important. There should be seminars held annually, monthly, if possible, or any programs that refresh an officer's knowledge. Even now, there are still officers who remain traditional; officers should adapt as well. By analyzing CCTV, we can identify which areas are more prone to crime and which areas could be targeted by crime. Some criminals observe the activities of our police. If they knew when and where the police would be, they would target the area that doesn't have them. With that kind of information, we get from CCTV, we can create a plan on how to optimize police visibility.

Police 3 (Chen, 32, Assistant WCPD Investigator)

So, I worked as an assistant WCPD investigator from 2018 to 2020. After that, I transferred to the intelligence group, and at the same time, I was also in the field of operations way back in 2023. Now, I returned to being an assistant WCPD investigator. I was also designated as a radio operator, and I have experience working with CCTV in our Command Center. The most common criminal activities that CCTV commonly captures in the Ozamiz area alone are vehicular accidents. Mostly, vehicle-to-vehicle, and sometimes vehicle against a pedestrian, hit and run, which might cause physical injuries to persons involved. Other than that, it is theft or robbery. In terms of challenges, in our Command Center, are probably in terms of connectivity and power outages. When that happens, it shuts down totally, which will prevent us from extracting the footage. Other problems include the storage, which is limited, and its capacity would only last for about 30 days. In line with the investigation, the challenge that I usually encounter is with the lighting, especially at night. Other CCTVs have poor image quality. So even if we have facial and plate number recognition, it would still be useless if the footage has poor image quality and the area where it was captured doesn't have sufficient lighting. If we can't recognize the plate number, we will identify the color, type, and model of the vehicle. CCTV is really useful in terms of security, especially in

vital areas like churches and other areas that are flooded by people. It also aids us in investigations because it provides a record of the activities happening in a certain area. Since it provides a record, it can also be offered as evidence in court. It would be used as corroborative evidence. Based on observation, one successful strategy employed by the LGU is the installation of CCTVs in areas where it can be considered a blind spot if they weren't installed with CCTVs. That practice or strategy further strengthens the capacity of CCTV to identify individuals and to capture a wider view of a location. To enhance the effectiveness of CCTV, we must invest in the most up-to-date versions of CCTVs, not in the outdated type. I also believe that the city needs additional CCTVs. Also, maybe we can integrate AI with CCTV that can instantly recognize an individual with support from a database, like AFIS for fingerprints, for example. It would be easier and more convenient. Training personnel are also important. Especially, when you get invited to court as an expert witness, how will you be able to explain your findings if you don't have knowledge or training with CCTV? That's why it's important. The information we obtained from CCTV footage is used, as mentioned earlier, to identify suspects, to track their movements, and to reconstruct the events that had occurred. It also helps us determine what other resources we should allocate when responding to a reported crime or incident. I highly encourage that every establishment should install CCTVs because they are really helpful. What if there is a theft or stabbing incident, and witnesses are absent? At least, there is an instrument that keeps an eye on your property 24/7.

Police 4 (Rose, 29, Assistant Admin—PNCO/Patroller)

I have been in service for six years. Personally, I would say that the most common criminal activity captured in CCTV involves traffic accidents, where hit-and-run usually occurs. It may not be the person's intention to hit a pedestrian, but the act of leaving the scene after the accident is considered criminal to me. That's the kind of incident that I frequently encounter or observe around Ozamiz City. The limitations that we usually encounter are the unavailability of footage because some CCTVs are broken, inoperative, or faulty in some establishments. Here, in the station and our main (command center), it's always maintained. I don't know about private agencies, but here, we check them daily, especially the connection. In my experience, CCTV really is effective in solving crimes. Even in rural areas or slightly remote areas like in Kinuman, as compared before, a lot of CCTVs are now installed in that area. So, if a criminal, who's not from Ozamiz, would think of escaping and goes there to hide or just thinks of passing through to avoid detection by officers because they believe they won't be seen, CCTV would be of great help in identifying them and tracing their movements. Our most effective strategy would be the daily check-ups of CCTVs, if they're still functional, as well as the 24/7 monitoring of live footage. Since we have radio communication, if a suspicious activity is discovered, the response is quick. Other strategies we employ, of course, after careful study of areas where crimes or accidents usually occur, like on highways and in secluded places, CCTVs are installed there, as a result. To enhance its effectiveness, I think we should install more CCTVs, not only to provide records of events but also to create deterrence. I also think that we should strictly require establishments, even private homes, to install CCTV. That would enhance their effectiveness. The information we obtained from CCTV, for me, so to speak, is the top one, among other things, when it comes to generating new ideas on how to effectively fight criminality. Because of it, we can study the behavior or specific movements of criminals, especially when we do a backtrack. From that, we can create a plan to avoid something bad from happening again or prevent criminals from pursuing their intentions.

Police 5 (James, Mobile Patrol Officer/Supply PNCO)

In my current role as a mobile patroller, I've been in this role for almost three years, but I have been in service for almost eight years in total. I have experience working with CCTV. Actually, I was assigned for about a month to the Command Center. Our Command Center is focused on the CCTV cameras installed around the city of Ozamiz. Based on my experience, in traffic, the most common criminal activity captured by CCTVs is minor traffic violations. Mostly at night, many would disregard traffic rules, not observing traffic lights, disregarding traffic signs; that's what we usually monitor. If ever we weren't able to apprehend the violator, we can review the footage, and that will enable us to locate the plate number and your tracks. It is very dangerous to disregard traffic rules because it might lead to injuring not only yourself, but you might also injure other motorists and pedestrians, and worst, you might die or kill someone. During my time as in-charge personnel at the Command Center, the most common challenge I encountered was the lighting in some areas. The city is gradually increasing the installation of solar lights; however, not all of them can sustain for a longer duration, unlike other solar lights, which can light the streets even until morning. So, lighting is the problem. This year, the city, as you observed, CCTVs have been installed almost in every corner and at every traffic light. It really provides us with great help in law enforcement because if there are violators, we can easily locate them through their movements and identify them. In terms of strategies, we assigned teams of personnel to monitor the CCTVs in the Command Center. So, once they notice any suspicious activity, they would communicate with us through our radio, and we can then go to the area. Earlier, during our formation, we tried to address a certain issue, and it was about radio communication. It fits perfectly with your question. I personally believe one factor that we in law enforcement should enhance is our radio communication because it's not 100% efficient. The monitoring of CCTV in the Command Center would be pointless if the officer on duty patrolling cannot be contacted because of communication problems. It is not 100% effective because of the weather. Rain and extreme weather could sometimes interfere with radio communication. I also hope that one day, we can integrate AI with CCTV. It would be good if there were a program that could instantly recognize a person and track his or her location to eliminate the difficulty of backtracking. The information we obtained from CCTV, as I mentioned earlier, is very useful in locating the suspect. Not only that, but by analyzing CCTV, if we were ever to conduct an operation in a particular area, the information about that location that we can obtain from CCTV would be beneficial in creating a comprehensive plan to effectively conduct the operation. Like, we can determine possible entry and exit points, where people could hide, and the like.

APPENDIX D

THESIS/RESEARCH DATA GATHERING APPROVAL FORM

 **Misamis University**
Ozamiz City

MISAMIS UNIVERSITY RESEARCH CENTER
CERTIFIED: ISO 21001: 2018 Educational Organizations Management System by DNV
ACCREDITED: Philippine Association of Colleges and Universities Commission on Accreditation (PACUCOA)

MU-RC-042/13 November 2024

Thesis/Research Data Gathering Approval Form

Date: _____

Name of Authors: ARNIL P. LABUANAN; MARK C. BLIACA, CLINTAN D. TUBO, FRANK C. MATA-DALITE
College/Department: College of Criminology
Research Title: "An Eye of Justice: A Case Study on Crime Case Analysis Using CCTV Footage"

Data Gathering Procedure:

a. Type of Research: (Kindly check)

☐ Quantitative	☒ Qualitative	☐ Experimental
☒ Approved Research Title & Problem/Objectives	☒ Approved Data Gathering Procedure	☒ Approved Data Gathering Instrument/Data Sheets

b. Respondents/Participants/Subject/Samples to be Collected: Police and Establishments Owners

c. Procedure:

☐ Survey	☒ Interview	☐ Experimentation	☐ Laboratory Testing
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d. Place of Implementation/Study Area: Ozamiz City, Misamis Occidental

If to be conducted outside the school campus, indicate the nature of transportation to be used:

☒ Own private vehicle	☐ public utility vehicle	☐ rental	☐ Others, please indicate _____
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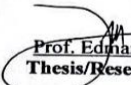
e. Date/s of Implementation/Sampling: August - September, 2025

Attachments:

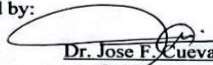
☒ Approved Letter of Consent from the designated authority in the area/place where the study is to be conducted
☒ Signed Parents' Consent

The thesis proposal mentioned above is hereby recommended for the commencement of data gathering implementation.

Recommended by:

 <u>Prof. Edgar R. Daniel</u> Thesis/Research Adviser	 <u>Prof. Mark Y. Orong</u> Thesis/Research Instructor
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Approved by:


Dr. Jose F. Cuevas Jr.
College Dean

CONTROLLED DOCUMENT

APPENDIX E

INFORMED CONSENT FORM (PORMA SA NASABTAN NGA PAGTUGOT)

Name of the Researchers/Investigators

(Mga Nagtuon): Arnile P. Labuanan, Mark C. Eliaca, Clint Ian Tuba, Francis Mapagdalita

Course: Bachelor of Science in Criminology

College: College of Criminology – Misamis University

Email / Contact Number: 09052172899

Thesis Title: “An Eye of Justice: A Case Study on Crime Case Analysis Using CCTV Footage”

PART I. INFORMATION SHEET	
Introduction (Pasiuna)	Good day! I am <u>Arnile P. Labuanan</u>, the principal researcher/investigator of the study entitled <u>“An Eye of Justice: A Case Study on Crime Case Analysis Using CCTV Footage.”</u> We are undergraduate students under the program <u>Bachelor of Science in Criminology</u> at Misamis University in Ozamiz City. I am to conduct the research with _____ as participant. In this vein, I am respectfully seeking your voluntary participation, being qualified to give your informed consent to take part in this study. Before you decide whether to participate or not in this study, please read the following information about the study, and feel free to ask questions anytime, should there be anything you do not understand or want to clarify. If you agree to answer the interview, you will be asked to affix your name and signature on this form, for which you will be given a copy. <i>(Maayong adlaw! Ako si <u>Arnile P. Labuanan</u> usa sa mga nagpahigayon sa pagtuon kabahin sa “<u>An Eye of Justice: A Case Study on Crime Case Analysis Using CCTV Footage</u>”. Kami mga estudyante sa <u>Bachelor of Science in Criminology</u> sa Misamis University, Ozamiz City. Ako nagapili kanimo isip participant nga maoy mutubag sa gikinahagnglang impormasyon niining gihimong pagtuon. Ako matinahurong naghangyo sa inyong bulontaryo nga pag-apil niini nga pagtuon. Gikinahanglan nga ikaw naa sa saktong edad ug naay kakayahan nga mohatag sa pagtugot aron makaapil niini nga pagtuon. Sa dili pa ka mohukom sa pag-apil niini nga interview, palihug sa pagbasa sa mga impormasyon sa ubos ug gawasnon ka nga makapangutana kon adunay wala nimo nasabtan o gusto nimong iklaro. Kung motugot ka sa pagahimoon nga interview, papirmahon ka niini nga porma ug tagaan usab ka ug imong kaugalingong kopya.)</i>
Purpose (Katuyoan)	The purpose of this study is to <u>explore the analysis of crime cases using CCTV footage to better understand its role in crime</u>

	prevention, investigation, and intervention. This research <u>will offer insights into how law enforcement agencies can effectively use CCTV footage to improve intervention strategies.</u> <i>(Ang katuyuan niini nga pagtuon mao ang <u>masusi ang pagtuki sa mga kaso sa krimen gamit ang CCTV footage aron mas masabtan ang papel niini sa pagpugong sa krimen, imbestigasyon, ug interbensyon.</u> Kini nga pagtuon makahatag og <u>panabut kung giunsa epektibo nga magamit sa mga ahensya nga nagpatuman sa balaod ang CCTV footage aron mapaayo ang mga estratehiya sa interbensyon.</u>)</i>
Type of Research Intervention (Matang sa Interbensyon sa Pagtuon)	This study will be conducted through interviews. The gathering of data will be conducted in person. <i>(Kining pagtuon pagabuhaton pinaagi sa interview. Personal ang pagkuha sa datos.)</i>
Selection of Participants (Pagpili sa mga Partisipant)	The selection of the participants is based on the following inclusion criteria: For police officers, they had to have at least one year of experience in handling crime investigations involving CCTV footage. Owners of commercial or non-commercial establishments had to be equipped with operational CCTV cameras and had experienced at least one incident where footage was used for crime-related purposes. <i>(Ang mga partisipante niini nga pagtuon mao ang indibidwal nga naga-angkon sa mosunod: Alang sa mga opisyal sa pulisya, kinahanglan sila adunay labing menos usa ka tuig nga kasinatian sa pagdumala sa mga imbestigasyon sa krimen nga naglambigit sa CCTV footage. Ang mga tag-iya sa commercial o non-commercial nga mga establimento kinahanglan nga adunay mga operational CCTV camera ug nakasinati og labing menos usa ka insidente diin ang footage gigamit alang sa mga katuyoan nga may kalabutan sa krimen.)</i>
Voluntary Participation (Boluntaryo nga Partisipasyon)	Your participation has to be voluntary and will not affect your situation or status in any way, including your relationship with the researcher. You are free to decide if you will take part or not. If you decide to participate, you are free not to answer any questions that you do not prefer to answer. <i>(Boluntaryo ang imong pag-apil ug kini dili makaapekto sa imong sitwasyon o estado apil na imong relasyon sa nagtuon. Gawasnon ka nga modesisyon kung kung moapil ka niini nga pagtoon o dili. Kung mo-desisyon ka nga moapil, gawasnon ka nga dili motubag sa bisan asa nga pangutana nga dili nimo gusto nga tubagon.)</i>

Procedure (Pamaagi)	The participants will be given ample time to undertake the interview. The interviews will be undertaken once or several times when necessary. The researcher will transcribe the interviews to be used for the analysis of the data. The information and data provided by you as a participant will be utilized for this study alone and will be treated with the utmost confidentiality. <i>(Ang mga partisipante pagahatagan og igong panahon sa pag-apil sa interview. Ang interview pwedeng himoon kausa nga higayon o sa makadaghan depende sa panginanghalanon. Isulat sa nagtuon ang interviews para sa pag-analisa sa datos. Ang mga impormasyon ug datos nga nakuha gikan kanimo isip ka partisipante gamiton lamang niining research og hatagan og tumang pag-amping nga dili mabutyag.)</i>
Duration (Gidugayon)	The gathering of data through the interview will last for 30 minutes to 1 hour. <i>(Ang pagkuha sa datos pinaagi sa interview mokabat ngadto sa 30 minuto ngadto sa isa ka oras)</i>
Risks and Discomforts (Risiko ug Kahasol)	The respondents will be protected from physical, social, or economic risks. In case the items in the survey instrument are too personal and make you feel uncomfortable, you may decline to answer any or all questions and may terminate your involvement at any time you choose. <i>(Ang mga partisipante ginaprotektahan sa pisikal, sosyal o ekonomikanhong risiko. Kung pananglitan adunay mga pangutana nga personal ra kaayo o kung dili ka komportable, mamahimong dili ka motubag o mobalibad sa pagtubag sa bisan asa o sa tanang mga pangutana ug moatras sa pag-apil sa bisan unsang panahon nga imong gusto.)</i>
Benefits (Kaayohan)	This study will enable you to shed light or provide understanding about the use of CCTV in crime investigation and prevention. Thus, your responses shall be highly valued, being deemed important in the field of Criminology. <i>(Kini nga pagtuon makapahimo kanimo paghatag og katin-awan o pagpasabot kabahin sa gamit sa CCTV sa pag-imbistiga ug pag-pugong sa krimen. Ang imong mga tubag hatagan og dakong bili nga giisip nga importante sa linya sa Kriminolohiya.)</i>

Reimbursements (Hulip nga bayad)	There will be no monetary expenses or costs on your part as a respondent, nor any monetary compensation for your participation in this study. However, personal protective equipment (PPE) like face masks, alcohol, and face shields may be provided during the gathering of the research data. <i>(Wala kay magasto sa imong pag-apil niini nga pagtuon ug dili usab ka bayaran ug kwarta sa imong pag-apil niini nga pagtuon. Apan adunay nga personal protective equipment (PPE) sama sa face masks, alcohol ug face shields nga pwede nga mahatag sa panahon sa pagkuha sa mga datos)</i>
Confidentiality of Data (Pag-amping sa Datos)	Only the researcher will have access to the information and responses of the participants. The personal identifying information of the participants will only be used for research analysis and will be treated with the utmost confidentiality. During the study, all data will be kept in a locked, secure filing cabinet, which will be discarded 6 months after the publication of the results. <i>(Ang nagtuon lamang ang makakita sa mga impormasyon ug tubag sa respondents. Ang mga datos nga makuha i-analisa ug hatagan og tumang pag-amping aron dili ibutyag. Sa panahon sa pagtuon, ipahimutang sa usa ka selyadong filing cabinet ang tanang datos nga pagagub-on human sa 6 kabulan gikan sa pag-publish sa resulta.)</i>
Sharing of Findings (Pagpaambit sa Nakaplagan)	The results of this study will be presented during the researcher's thesis final defense. Also, the research findings may be shared through publications and conferences with the assurance that the identities of the respondents will remain confidential. A printed copy of the completed study will be provided to the participants. <i>(Ang mga resulta niini nga pagtuon ipresenta sa panahon sa final defense sa thesis/ dissertation sa nagtuon. Ang mga nakaplagan sa pagtuon posible nga ipaambit pinaagi sa mga publications ug conferences nga adunay kapanigurohan nga dili mabutyag ang pagkatawo sa mga partisipante. Pagahatagan og isa ka giimprinta nga kopya sa kumpleto nga pagtuon ang mga partisipante.)</i>
Rights to Refuse or Withdraw (Katungod sa Pagpalibabad o Pag-undang)	You are free to withdraw or terminate participation at any stage of the study, without the need to give any reason. You will not be penalized in case of termination of participation. <i>(Gawasnon ka nga moatras or moundang sa pag-apil sa bisan asa nga punto sa pagtuon nga dili na magkinahanglan pa ug rason. Dili ka ipamulta sa pag-atras o pag-undang.)</i>

Who to Contact (Kinsa ang Kontakon)	Should there be any queries as a parent, you can contact the researcher through the following details: <i>(Kung adunay mga pangutana, mamhimo nga mokontak pinaagi aning mga detalye:)</i> Name of the Researcher (Ngalan sa Nagtuon): <u>Arnil P. Labuanan</u> Cellphone Number/s: <u>09052172899</u> e-mail: <u>arnillabuanan4@gmail.com</u> STATEMENT BY THE RESEARCHER (PAGPADAYAG SA NAGTUON) I will read the Information sheet to the potential participant. With the best of my ability, I make sure that the participant will understand the interview questions and that possible follow-up interviews may be undertaken. <i>(Akong pagabasahon ang mga nasulat niining Information Sheet ngadto sa potensyal nga partisipante. Kutob sa akong mahimo siguroon nako nga masabtan sa partisipante ang mga pangutana sa interview ug ang possible nga follow-up nga interviews.)</i> I can assure that the participant will be allowed to ask questions about the study, and all the questions raised will be answered fully. I can likewise assure that the participant will not be coerced into giving consent that must be free and voluntary. <i>(Gisiguro ko nga ang partisipante mahatagan og panahon sa pagpangutana kabahin niining pagtuon og ang tanang pangutana nga iyang gihatag matubag sa hingpit. Siguroon ko usab ang maong partisipante dili mapugos sa paghatag sa pagtugot nga kinahanglan nga gawasnon og boluntaryo.)</i> A copy of this Informed Consent Form will be provided to the participant. <i>(Ang kopya sa niining Informed Consent Form ihatag ngadto sa respondent.)</i> Print Name of Researcher (Ngalan sa Nagtuon): <u>ARNIL P. LABUANAN, MARK C. ELIACA, CLINT IAN B. TUBA, FRANCIS C. MAPAGDALITA</u>
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PART II. CERTIFICATE OF CONSENT

This research entitled “An Eye of Justice: A Case Study on Crime Case Analysis Using CCTV Footage” by Arnile P. Labuanan, Mark C. Eliaca, Clint Ian Tuba, and Francis Ian Mapagdalita, to gather information and data about the use of CCTV in the analysis of crime cases to provide input in designing intervention scheme for the authorities, has been presented and explained to me clearly. Since the study involves owners of commercial or non-commercial establishments, who had to be equipped with operational CCTV cameras, and had experienced at least one incident where footage was used for crime-related purposes, I was chosen as one of the participants.

(Kini nga pagtuon gititulohan, “An Eye of Justice: A Case Study on Crime Case Analysis Using CCTV Footage” ni Arnile P. Labuanan, Mark C. Eliaca, Clint Ian Tuba, and Francis Ian Mapagdalita nga adunay tumong sa pagkuha og impormasyon ug datos kabahin sa paggamit og CCTV sa pagtuki sa mga kaso sa krimen aron paghatag og input sa pagdesinyo sa intervention scheme para sa mga awtoridad, gipresenta ug gipasabot og klaro kanako. Tungod kay ang pagtuon kay kabahin sa mga tag-iya sa komersyal o dili komersyal nga mga establisemento, nga kinahanglan adunay mga operasyonal nga CCTV camera, ug nakasinati bisan usa ka insidente diin ang footage gigamit alang sa katuyoan nga may kalabotan sa krimen, ako napilian isip usa sa mga partisipante.

I have read the foregoing Informed Consent Form, or it has been read to me. I had the opportunity to ask questions, which were subsequently answered fully. I consent voluntarily to be a participant in this study.

(Akong nabasa ang nauna nga Informed Consent Form, o gibasa kini kanako. Natagaan ako og higayon nga makapangutana nga natubag sa hingpit. Ako mosugot nga boluntaryo nga mahimong participant sa niining pagtuon.)

Print Name of Participant (Ngalan sa Partisipante): _____

Signature of Participant (Pirma sa Partisipante): _____

Date: [MM/DD/YYYY] _____

If Illiterate (Kung dili makasulat ug makabasa)

If the respondent is illiterate, a witness who is literate will sign. The respondent will choose him/ her who is without connection with the researcher or the research group to attest to this undertaking. The respondent will affix his thumbprint.

[Kung ang participant kay dili makabasa o makasulat, mopirma ang usa ka makabasa ug makasulat nga testigo. Ang respondent ang mopili kaniya nga walay koneksyon sa nagtuon o sa iyang grupo para mopamatuod sa gimbuhaton. Ang respondent mobutang sa iyang tamla (thumb print)].

Name and Signature of the Witness
(Ngalan ug Pirma sa Testigo)

Thumb mark

APPENDIX F

PARENT'S CONSENT



MISAMIS UNIVERSITY
Ozamiz City
Department of Student Affairs & Services

14U-DSAS-006/02 June 2023

PARENT'S CONSENT

Sponsoring Group/Organization

I am allowing my son/daughter/ward, ELINT JAN B. TUBA, to join
the RESEARCH DATA GATHERING (activity) to be held on
AUGUST 11 TO SEPTEMBER 12 at OLAHIZ CITY, MICHIGAN OCCIDENTAL under the supervision of
(Adviser/Faculty).

I understand that Misamis University exercises the necessary safety precautions in this activity.

In consideration of the benefits to be derived from the above activity, I expressly waive any and all claims against the administration or any member of the faculty and staff of the Misamis University on account of any unforeseen accident or injury that my son/daughter/ward might incur in connection with the aforementioned activity.

Signature over printed name of
Parent/Guardian

3-24-25

Date _____

CLINT IAN DASHMAYOR TUBA
Signature over printed name of
Student

3-74-28

Date _____

Important: This form shall be submitted to the DSAS Office at least two (2) days before the conduct of the activity.

SUBSCRIBED AND SWORN to before me, this 04 MAR 2026 day of MARCH at MANILA CITY, Philippines, that the herein affiant personally came and appeared with his/her ATTY. JASON CHIONG MARAVE, as evidence of his/her personal identity.

Doc. No. 411
Page No. 84
Book No. VII
Series of 2020

me, this _____ day of _____ at OSAMIZ CITY
 and appeared with his/her _____ as evidence of _____
ATTY. JASON CHIONG MARAVE
 Notary Public for Ozamiz City, and
 Municipality of Clarin, Misamis Oriental
Notary Public
 IBP No. 596655 - 01003, 01004, 01005, 31, 2027
 PTR No. 007982, 01001, 01002,
 Attorney's Reg. No. 82251, 05/30/2022
 MCLE No. VII-0041856, 64/14/2025
J.C. MARAVE LAW OFFICE
 Washington St. 500, District, Ozamiz City
 Romblon

.....
(For DSAS Personnel only)

Attested by:

RODEL L. BALDADO, MHist, MAEd
OIC, Department of Student Affairs & Services

Date:

APPENDIX G

DOCUMENTATION



Conducting an interview with a participant from Establishment 3 on August 13, 2025



Conducting an interview with Police Participant No. 2 on August 23, 2025



Photo was taken after the interview of Police 5 on August 23, 2025



Participant from Establishment 5 signed the informed consent form before the conduct of the interview on September 08, 2025

APPENDIX H-1

CERTIFICATE OF PUBLICATION



Certificate of Publication

This is to certify that

Arnil P. Labuanan

Has published an article entitled

**An Eye of Justice: A Case Study on Crime Case Analysis
Using CCTV Footage**

In

Volume 9, Issue 4, October-December 2025

Mediterranean Journal of Basic and Applied Sciences



ResearchGate



Certificate of Publication

This is to certify that

Mark C. Eliaca

Has published an article entitled

**An Eye of Justice: A Case Study on Crime Case Analysis
Using CCTV Footage**

In

Volume 9, Issue 4, October-December 2025

Mediterranean Journal of Basic and Applied Sciences



ResearchGate



APPENDIX H-2

CERTIFICATE OF PUBLICATION



Certificate of Publication

This is to certify that

Clint Ian B. Tuba

Has published an article entitled

**An Eye of Justice: A Case Study on Crime Case Analysis
Using CCTV Footage**

In

Volume 9, Issue 4, October-December 2025

Mediterranean Journal of Basic and Applied Sciences



Certificate of Publication

This is to certify that

Francis C. Mapagdalita

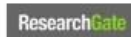
Has published an article entitled

**An Eye of Justice: A Case Study on Crime Case Analysis
Using CCTV Footage**

In

Volume 9, Issue 4, October-December 2025

Mediterranean Journal of Basic and Applied Sciences



APPENDIX H-3

CERTIFICATE OF PUBLICATION



Certificate of Publication

This is to certify that

Edmar R. Daniel

Has published an article entitled

**An Eye of Justice: A Case Study on Crime Case Analysis
Using CCTV Footage**

In

Volume 9, Issue 4, October-December 2025

Mediterranean Journal of Basic and Applied Sciences



Certificate of Publication

This is to certify that

Jose F. Cuevas Jr.

Has published an article entitled

**An Eye of Justice: A Case Study on Crime Case Analysis
Using CCTV Footage**

In

Volume 9, Issue 4, October-December 2025

Mediterranean Journal of Basic and Applied Sciences



APPENDIX I

TURNITIN RESULT

Page 2 of 83 - Integrity Overview

Submission ID: tm:old::28447:135534544

9% Overall Similarity

The combined total of all matches, including overlapping sources, for each database.

Filtered from the Report

- Bibliography

Exclusions

- 1 Excluded Source

Match Groups

-  **61 Not Cited or Quoted 5%**
Matches with neither in-text citation nor quotation marks
-  **45 Missing Quotations 3%**
Matches that are still very similar to source material
-  **14 Missing Citation 1%**
Matches that have quotation marks, but no in-text citation
-  **4 Cited and Quoted 0%**
Matches with in-text citation present, but no quotation marks

Top Sources

- 4%  Internet sources
- 1%  Publications
- 7%  Submitted works (Student Papers)

Integrity Flags

0 Integrity Flags for Review

No suspicious text manipulations found.

Our system's algorithms look deeply at a document for any inconsistencies that would set it apart from a normal submission. If we notice something strange, we flag it for you to review.

A Flag is not necessarily an indicator of a problem. However, we'd recommend you focus your attention there for further review.

APPENDIX J

RESEARCHERS' PROPOSED ACTION PLAN

FOCUS	OBJECTIVES	STRATEGIES	RESPONSIBLE AGENCIES	EXPECTED OUTCOMES
Technological and Infrastructure Enhancement	Upgrade and expand surveillance systems to ensure high-quality, reliable, and comprehensive monitoring.	1. Replace outdated cameras with HD units (night-vision, wide-angle, motion detection). 2. Install additional CCTVs around Ozamiz City. 3. Integrate AI features (alerts, facial & plate recognition). 4. Schedule regular maintenance and diagnostics. 5. Implement other security measures.	Local Government Unit (LGU), Philippine National Police (PNP), City Engineers, IT Departments, and Private Establishments.	• Clearer and more reliable footage • Wider coverage of high-risk areas • Reduced downtime and technical failures • Faster detection of suspicious activities. • Stronger crime deterrence
Personnel Training and Capacity Building	Enhance the competence of law enforcement and monitoring staff in operating CCTV systems and handling digital evidence.	1. Conduct specialized training in CCTV operations, video analysis, and digital forensics. 2. Hold simulation drills for monitoring, dispatch, and response. 3. Provide workshops on privacy, ethics, and evidence handling. 4. Form a dedicated CCTV Monitoring and Analysis Team (24/7 Staffing) 5. Partner with universities/tech providers for continuous learning.	PNP, National Privacy Commission, Academic Institutions, Technology Providers.	• Skilled operators and investigators • Faster and more accurate suspect identification • Improved response to incidents. • Strong compliance with data privacy standards • Better coordination across units.

Legal and Procedural Policy Improvements	Simplify legal frameworks and institutional policies for the timely yet secure use of CCTV footage.	1. Develop standardized protocols balancing efficiency and privacy. 2. Extend retention of CCTV footage to 60-90 days. 3. Draft MOAs between police, LGUs, and establishments for evidence sharing. 4. Enact local ordinances requiring CCTV installations with minimum quality standards.	LGUs, PNP, National Privacy Commission, Business Permits & Licensing Offices.	• Faster access to CCTV for investigations • Consistent policies across institutions • Reliable CCTV evidence in court • Stronger police-community collaboration • Institutionalized CCTV as a public safety requirement.
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CURRICULUM VITAE



PERSONAL DATA

Name : Arnil P. Labuanan
Date of Birth : November 15, 2003
Place of Birth : Ozamiz City
Civil Status : Single
Home Address : Poblacion Sinacaban, Misamis Occidental
Father : Allan M. Labuanan Sr.
Mother : Nelfa P. Labuanan

EDUCATIONAL ATTAINMENT

College : Bachelor of Science in Criminology
Misamis University
Ozamiz City
June 2026

Secondary : High School Diploma
Humanities and Social Sciences
Misamis University
Ozamiz City
June 2022

St. Joseph's High School Inc.
Sinacaban, Misamis Occidental
March 2020

Elementary : Elementary Diploma
Sinacaban Central School
Sinacaban, Misamis Occidental
March 2016

SEMINARS/TRAININGS ATTENDED

- Reserved Officers Training Course – Medical Unit
Misamis University, Ozamiz City
2022-2023
- Seminar-Workshop in Dactyloscopy
Misamis University, Ozamiz City
November 18, 2023
- United Nations Sustainable Development Goals
Misamis University, Ozamiz City
November 13, 2025
- Water Search and Rescue Training
Misamis University, Ozamiz City
December 12-16, 2025
- Effective Communication in Action: Skills and Strategies
Misamis University, Ozamiz City
February 20, 2026
- Seminar on Police Report Writing
Misamis University, Ozamiz City
February 27, 2026

CURRICULUM VITAE

PERSONAL DATA

Name : Mark C. Eliaca
Date of Birth : August 7, 2003
Place of Birth : Ozamiz City
Civil Status : Single
Home Address : P-2, Baybay San Roque, Ozamiz City
Father : Arnulfo M. Eliaca
Mother : Sheila C. Eliaca



EDUCATIONAL ATTAINMENT

College : Bachelor of Science in Criminology
Misamis University
Ozamiz City
June 2026

Secondary : High School Diploma
Humanities and Social Sciences
Misamis University
Ozamiz City
June 2022

Holy Cross High School
Austin Heights Kolambugan, LDN
March 2020

Elementary : Elementary Diploma
Mukas Central School
Mukas Kolambugan, LDN
March 2016

SEMINARS/TRAININGS ATTENDED

- Advanced Reserved Officers Training Course
Misamis University, Ozamiz City
2022-2026
- Seminar-Workshop in Dactyloscopy
Misamis University, Ozamiz City
November 18, 2023
- Water Search and Rescue Training
Misamis University, Ozamiz City
December 12-16, 2025
- Effective Communication in Action: Skills and Strategies
Misamis University, Ozamiz City
February 20, 2026
- Seminar on Police Report Writing
Misamis University, Ozamiz City
February 27, 2026

CURRICULUM VITAE

PERSONAL DATA

Name : Clint Ian B. Tuba
Date of Birth : June 30, 1997
Place of Birth : Ozamiz City
Civil Status : Single
Home Address : Brgy. Molicay, Ozamiz City
Father : Warlindo R. Tuba
Mother : Jurina B. Tuba



EDUCATIONAL ATTAINMENT

College : Bachelor of Science in Criminology
Misamis University
Ozamiz City

Secondary : High School Diploma
Humanities and Social Sciences
Ozamiz City National High School
Lam-an St., Ozamiz City
March 2018

Elementary : Elementary Diploma
Dominggo E. Barloa Elementary School
Ozamiz City
March 2012

SEMINARS/TRAININGS ATTENDED

- Reserved Officers Training Course
Misamis University, Ozamiz City
2022-2023

- Seminar-Workshop in Dactyloscopy
Misamis University, Ozamiz City
November 18, 2023
- Enhancing Commitment, Adaptiveness, and Positive Values
Misamis University, Ozamiz City
May 25, 2023
- Mental Health and Wellness Seminar
Misamis University, Ozamiz City
April 06, 2024

CURRICULUM VITAE



PERSONAL DATA

Name : Francis C. Mapagdalita
Date of Birth : June 3, 2004
Place of Birth : Ozamiz City
Civil Status : Single
Home Address : Purok 1, Calabayan, Ozamiz City
Father : Wilfrando M. Mapagdalita
Mother : Cecilia C. Mapagdalita

EDUCATIONAL ATTAINMENT

College : Bachelor of Science in Criminology
Misamis University
Ozamiz City

Secondary : High School Diploma
Humanities and Social Sciences
Jose Lim Ho National High School
Ozamiz City
June 2022

Elementary : Elementary Diploma
Maximo S. Laurete Central School
Ozamiz City
March 2016

SEMINARS/TRAININGS ATTENDED

- Reserved Officers Training Course
Misamis University, Ozamiz City
2022-2023

- Seminar-Workshop in Dactyloscopy
Misamis University, Ozamiz City
November 18, 2023
- Enhancing Commitment, Adaptiveness, and Positive Values
Misamis University, Ozamiz City
May 25, 2023
- Mental Health and Wellness Seminar
Misamis University, Ozamiz City
April 06, 2024