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CCTV as a Tool in Crime Prevention in the Municipality of Lingayen

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Abstract — This study aimed to assess the CCTV as a tool in crime prevention in the Municipality of Lingayen. Using a descriptive quantitative research design, the study surveyed 60 residents, 20 police officers, and 20 local government personnel involved in the operation and monitoring of CCTV. Structured questionnaires gathered data on public perception, system effectiveness, and operational challenges. Findings revealed that residents felt safer in areas with CCTV and expressed strong trust in the system's management. Enforcement personnel highlighted the system's effectiveness in identifying suspects, resolving incidents without eyewitnesses, and reducing the need for constant patrols. However, challenges were noted in terms of delayed access to CCTV footage. Overall, the study demonstrates that CCTV is an effective crime-prevention tool in Lingayen, but operational improvements—particularly in footage retrieval and system coordination—are necessary to fully maximize its impact on public safety.

Keywords — CCTV, public safety, criminal investigation, surveillance

I. Introduction

Closed-circuit television systems emerged as a prominent tool in contemporary policing and public safety strategies, with their deployment reflecting a growing reliance on technology to enhance surveillance capabilities and deter criminal activity (Maroma et al., 2020). An era marked by rapid technological advancement and increasing demand for safer communities prompted governments worldwide to invest in advanced surveillance technologies such as Closed-Circuit Television (CCTV). The primary objective of installing these systems was to ensure community safety, prevent crimes, and assist investigations through efficient detection, tracking, and identification.

Caplan and Kennedy (2020) examined the integration of CCTV with predictive analytics in selected urban areas and found that crime reduction was more substantial when surveillance technologies were aligned with data-driven policing strategies. Their findings underscored that effectiveness was not solely dependent on the presence of cameras, but on how strategically and proactively they were utilized.

Similarly, Villanueva et al. (2021) observed that in various Philippine municipalities, public satisfaction with CCTV systems was notably higher when these systems were well-

maintained, operated transparently, and actively supported by responsive and accountable local law enforcement. These insights affirmed the importance of combining technological capability with good governance in maximizing the impact of surveillance initiatives. The Department of the Interior and Local Government (DILG), through Memorandum Circular No. 2014-119, mandated local government units to install and utilize CCTV systems in vital public areas to support peace and order. Additionally, the Department of Information and Communications Technology (DICT) and the Philippine National Police (PNP) acknowledged the use of CCTV footage as admissible evidence in criminal investigations, provided it adhered to the guidelines set in the Data Privacy Act of 2012 (RA 10173) and was handled following proper chain-of-custody protocols. These legal frameworks legitimized the role of CCTV in public governance and criminal justice.

In recent years, the deployment of CCTV systems became a popular strategy among local government units (LGUs) that aimed to improve public safety and reduce crime. CCTV was widely regarded as a proactive measure that provided both real-time surveillance and investigative support.

Several studies found that CCTV could play a role in reducing crime, especially in public spaces such as city centers, parking lots, and transportation systems. Welsh and Farrington (2019) conducted a meta-analysis of CCTV effectiveness and found a modest but statistically significant reduction in crime, particularly in car parks.

Recent evidence suggested that the success of CCTV systems depended greatly on their strategic implementation and integration with policing efforts. Piza et al. (2019) concluded that CCTV was most effective when paired with active monitoring and rapid police response, showing significant reductions in crimes in targeted areas. Public perception also played a crucial role in determining the overall success of surveillance initiatives. A study by Meijer and Wessels (2021) found that public trust in local governments significantly affected the acceptance and perceived legitimacy of CCTV systems. If citizens believed that surveillance protected rather than invaded their privacy, they were more likely to cooperate with authorities. Conversely, if residents were not informed or consulted, the program could have bred suspicion or resistance.

According to Lum and Koper (2020), technology-driven policing tools were only sustainable if paired with clear policy goals, consistent monitoring, and community input.

In the Philippines, this trend also emerged at the municipal level, as seen in Lingayen's growing use of CCTV systems as a tool to ensure public safety and enhance crime prevention. This investment reflected animportant public policy decision, but without proper evaluation, its real impact remained uncertain.

Locally, some Philippine LGUs began using CCTV to aid in crime investigation, traffic management, and disaster response. However, the impact of such systems in smaller municipalities like Lingayen remained under-explored. While large cities such as Quezon City and Davao had public reports on the use of surveillance, smaller towns lacked similar data. Evaluating Lingayen's

CCTV initiative provided an opportunity to understand how this technology functioned in a localized context and whether it led to safer public spaces. For Lingayen, it remained unclear whether local CCTV systems met these standards and how often they contributed to criminal case resolutions. Moreover, the question of whether Lingayen's investment yielded measurable returns in terms of reduced crime and improved public confidence persisted.

While most existing studies focused on urban centers or national-level implementations, the experiences of smaller municipalities deserved equal attention. Lingayen, with its unique demographic and geographic profile, provided a valuable case for understanding how localized investments in surveillance could impact public safety. This study was timely and relevant. It evaluated the contribution of the CCTV system implemented by the local government of Lingayen in enhancing public safety and supporting criminal investigations. Specifically, it aimed to determine whether the installation of CCTV led to a decrease in crime in areas where cameras were installed, to assess how useful CCTV footage had been in solving criminal cases, and to understand how the local community perceived the CCTV system. The findings of this study were expected to help guide future policy decisions regarding the use and improvement of surveillance.

Statement of the Problem

The local government of Lingayen has invested in CCTV systems as a strategy to enhance public safety and support criminal investigations. However, it is still unclear how effective these CCTV systems really are. This study aims to answer the following question:

1. To what extent have CCTV system contributed to public safety in terms of:

    a) Crime Deterrence;

    b) Public Perception of Safety;

    c) Emergency Response; and

    d) Incident Monitoring?

2. How effective are the CCTV system in assisting criminal investigation in terms of:

    a) Identification of Suspects;

    b) Evidence Gathering; and

    c) Crime Resolutions?

3. What are the challenges encountered in the current use of CCTV for public safety and investigation?

4. What recommendations can be proposed to improve the effectiveness of CCTV system in enhancing public safety in aiding criminal investigations in Lingayen?

II. Methodology

Research Design and Strategy

This study used descriptive quantitative research design to measure the contribution of the CCTV to public safety and criminal investigation implemented by the local government of Lingayen. This research design will describe and interpret the existing conditions, perceptions, and experiences of selected respondents in relation to the CCTV program. It allows the researcher to gather quantifiable data from identified groups without manipulating variables. Through this approach, the study seeks to determine whether the presence of CCTV in public areas, has contributed to the reduction of crime, supported law enforcement in solving criminal cases, and influenced public perception regarding safety and surveillance.

Population and Locale of the Study

The population of this study consists of three main groups directly related to the implementation and outcomes of the CCTV system in Lingayen, particularly in the public areas**:**

(1) sixty community members, (2) twenty selected members of the Philippine National Police assigned in Lingayen, and (3) twenty local government unit officials, especially those involved in public safety, or the management and monitoring of CCTV systems.

The inclusion of PNP personnel is essential because they are primarily responsible for maintaining peace and order, as well as for utilizing CCTV footage in crime prevention, incident monitoring, and investigation. Their participation ensures that the study captures professional insights on the operational effectiveness and contribution of CCTV to law enforcement and emergency response.

The LGU officials and staff are included because they oversee the planning, installation, and maintenance of CCTV systems, and are directly involved in local policies and decision-making related to public safety. Their perspectives will help assess how the CCTV system supports governance, surveillance management, and community protection initiatives. Meanwhile, the community members represent the end beneficiaries of the CCTV system. They provide valuable perspectives on how CCTV installations influence the public's perception of safety, sense of security, and trust in local safety measures. Including them allows the study to evaluate the social and perceptual impact of CCTV beyond its technical and administrative roles. To gather relevant data, purposive sampling will be used to select PNP personnel and LGU representatives who have direct knowledge or experience related to the CCTV system such as those responsible for monitoring footage or investigating incidents captured on camera.

Approximately twenty (20) PNP officers and twenty (20) LGU personnel will also be included in the study, depending on availability and relevance to the research. For community members, the study will select sixty (60) residents**,** focusing mainly on residents and public area-

goers, located within CCTV-monitored areas**.** These individuals will be selected through convenience and purposive sampling**,** ensuring they are familiar with the CCTV presence and are willing to share their perspectives regarding safety, surveillance, and crime in the area. This sampling procedure ensures that the study captures the viewpoints of individuals who are most directly exposed to and affected by the CCTV installations, as well as those responsible for operating and utilizing the system for public safety and criminal investigation.

Data Gathering Tool

This study utilized two structured survey questionnaires as the primary research instruments to gather quantitative data from the selected respondents. Two separate sets of questionnaires were developed to suit the distinct perspectives and roles of the participants: one designed for residents and another for Philippine National Police (PNP) officers and Local Government Unit (LGU) personnel.

The survey questionnaire for residents focused on their awareness of CCTV installations, perceived safety in CCTV-covered areas, observations on the frequency of crime or disturbances, and their level of trust in the CCTV system and the authorities managing it. The items consisted of closed-ended questions using a Likert scale to measure agreement or perception, and multiple-choice questions for factual responses.

The survey questionnaire for PNP and LGU respondents was designed to assess the operational aspects and effectiveness of the CCTV system in crime prevention and investigation. It included questions on the frequency of CCTV use in solving criminal cases, the usefulness and reliability of footage, and challenges encountered in CCTV monitoring and implementation. These items were also structured as closed-ended questions for ease of quantification and statistical analysis.

Prior to the actual data gathering, the instruments were validated by experts in public administration and research to ensure clarity, relevance, and appropriateness of the items. A pilot test was conducted with a small sample to refine the language and structure of the questions, after which necessary revisions were made.

III. Results and Discussion

This chapter presents the analysis of the findings from the conducted study, along with the interpretation of the data collected by the researchers concerning the contribution of CCTV to public safety and criminal investigations in Lingayen, Pangasinan.

Profile of the Respondents

Residents Profile		
Profile	**Categories**	**Percentage**
Age	18-25	15%
	26-35	40%
	36 and above	45%
Gender	Male	65%
	Female	35%
Area Frequently Visited	Public Market	20%
	Plaza	35%
	Parking Area	40%
	Other Public Monitored Area	5%
PNP and LGU Profile		
Age	18-25	20%
	26-35	70%
	36 and above	10%
Gender	Male	80%
	Female	20%
Department	PNP	50%
	LGU	50%

Table 1. Profile of Respondents

The demographic profile of the respondents in the study is divided into two main groups: residents and personnel from the Philippine National Police (PNP) and Local Government Unit (LGU). This classification facilitates an understanding of the perspectives and characteristics of both general citizens and public service providers.

Most resident respondents are aged 36 and above (45%), followed by those aged 26–35 (40%), and 18–25 (15%). Males constitute the majority (65%), and the most frequently visited areas are parking areas (40%), plazas (35%), public markets (20%), and other monitored areas (5%). This suggests that public safety measures should focus on high-traffic zones like parking areas and plazas.

Among public personnel, the majority are aged 26–35 (70%), with fewer aged 18–25 (20%) and 36 and above (10%). Males dominate this group (80%), and the distribution between PNP and LGU is equal (50% each), ensuring balanced institutional representation.

Table 2 Effectiveness of CCTV in Identifying Suspects

Indicators	Mean	Interpretation
CCTV assists in identifying suspects or persons involved	4.80	Very Effective
Real-time CCTV monitoring aids capture during incidents	4.65	Very Effective
CCTV footage allows better tracking of suspect movements.	4.96	Very Effective
CCTV provides physical features for verification of identity.	4.20	Effective
CCTV helps determine the direction and vehicle used by fleeing suspects.	4.95	Very Effective

Respondents from the PNP and LGU find CCTV highly effective in identifying suspects, emphasizing that surveillance cameras provide clear visual documentation that enables authorities to confirm identities, analyze physical characteristics, and trace movements before, during, and after an incident. The high effectiveness ratings indicate that front-line personnel rely on CCTV footage as a primary evidentiary tool when reconstructing events and validating witness accounts, making investigations more accurate and time-efficient. The exceptionally high rating of Very Effective (mean = 4.95) for CCTV's ability to determine the direction and vehicle used by fleeing suspects emphasizes its unmatched value in real-time and post-incident pursuit. This capability transforms surveillance footage into actionable intelligence, enabling law enforcement to rapidly establish a perimeter, coordinate inter-jurisdictional pursuit, or track a suspect's movements away from the crime scene. This immediate, objective data significantly narrows the search area and accelerates the apprehension process, making it a cornerstone of effective suspect identification. This aligns with Piza and Welsh (2022), who underscore that CCTV significantly enhances suspect recognition, particularly in public spaces with consistent activity. Their findings show that the combination of camera visibility, image clarity, and systematic monitoring substantially increases the likelihood of accurately identifying individuals involved in criminal acts. Similarly, related studies highlight that CCTV-supported investigations yield higher clearance rates because footage provides objective, verifiable information that reduces investigative uncertainty.

Table 3. Limitation of CCTV Usage

Indicators	Mean	Interpretation
Difficulty in availability and timely access to CCTV footage	2.95	Neutral
Some CCTV cameras experience technical issues (blur, darkness, glare)	3.00	Neutral
Limited coverage in certain barangays or blind spots	2.90	Neutral
Insufficient personnel assigned to monitor real-time CCTV feeds.	2.90	Neutral
Delays in maintenance or repairs affecting the reliability of CCTV units.	2.90	Neutral

The findings highlight several operational limitations affecting the overall functionality of the CCTV system in Lingayen. The neutral rating of 2.95 for “Difficulty in availability and timely access to CCTV footage” indicates that respondents are uncertain about whether recorded videos can be retrieved promptly during investigations. This suggests that delays in accessing footage

remain a persistent issue, potentially weakening investigative momentum and limiting the usefulness of time-sensitive visual evidence. Similarly, the neutral mean score of 3.00 for "Some CCTV cameras experience technical issues (blur, darkness, glare)" reflects concerns regarding image quality and equipment reliability. Respondents recognize that footage affected by low-visibility conditions or technical malfunction may compromise the accuracy of suspect identification and incident reconstruction. Poor footage quality reduces evidentiary strength and may even render some recordings unusable during critical stages of investigation or prosecution.

IV. Conclusions and Recommendations

Based on the findings of the study, the following conclusions are drawn: The CCTV system implemented by the Local Government of Lingayen has made a profound and meaningful contribution to public safety. It operates as a highly effective tool for crime deterrence and a critical source of psychological reassurance, significantly boosting the community's trust and sense of security. The CCTV system is an indispensable asset to criminal investigations, demonstrating Highly Effective performance in providing objective, irrefutable evidence. Its primary operational success lies in its capability to accurately track suspect movements and resolve cases where human testimony is lacking or unreliable, thereby strengthening the efficiency and integrity of the criminal justice process. The main limitations of the system are operational and technical, relating to poor image quality, delayed footage retrieval, and incomplete coverage. These moderate challenges, if unaddressed, pose a risk of undermining the overall success and reliability of the system, particularly during time-sensitive investigations. Ultimately, while the technology is successful, the data confirms that a successful public safety strategy requires a strategic, integrated approach: the highly effective CCTV network must be actively supported by continuous maintenance and complemented by a robust, visible presence of PNP personnel to cover blind spots and provide immediate human intervention. Based on the study's findings, the following actions are recommended to further enhance the contribution of CCTV system in Lingayen: Prioritize Maintenance and Technical Upgrade: The LGU should implement a proactive, scheduled maintenance program for all cameras to address issues of blur, darkness, and glare (mean: 3.00). A budget should be allocated for the timely repair and phased replacement of older cameras with high-definition, low-light-capable units to ensure optimal evidentiary quality 24/7. Establish a Clear Data Access Protocol: The LGU and PNP must standardize a procedure for the immediate and timely retrieval of CCTV footage for investigative purposes (mean: 2.95). This may involve dedicating specific, trained LGU or PNP personnel solely to data handling and establishing secure, efficient storage and backup systems to ensure chain-of-custody protocols are strictly followed. Strategically Expand Coverage (Blind Spot Mitigation): A technical audit should be conducted to map all existing "blind spots" (mean: 2.90) and plan the strategic expansion of CCTV coverage, prioritizing areas with high traffic but low visibility. This expansion should be done in coordination with the PNP to maximize its deterrent and monitoring value. Conduct regular maintenance and technical audits to ensure that all installed cameras are functional and strategically positioned. These checks should also verify that storage, backup, and retrieval

systems remain secure, efficient, and up to date. Expand CCTV coverage to high-priority areas, particularly locations with frequent disturbances or higher crime risks, as identified through local data and feedback from both community members and enforcement agencies. Improve public trust and transparency by clearly communicating how CCTV footage is managed and by ensuring that the system is used in ways that respect citizens' rights to privacy. This includes establishing clear policies on data access and use.

REFERENCES

[1] Maroma, A. N., Maroma, D. P., & Pangilinan, B. A. (2019). Enhancing community safety: Installation of CCTV systems in selected barangays in the Province of Bulacan. International Journal of Research and Innovation in Social Science, 8(III-S), 4397–4406. https://rsisinternational.org/journals/ijriss/articles/enhancing-community-safety-installation-of-cctv-systems-in-selected-barangays-in-the-province-of-bulacan/

[2] Piza, E. L., Welsh, B. C., Farrington, D. P., & Thomas, A. L. (2019). CCTV surveillance for crime prevention: A 40-year systematic review with meta-analysis. Criminology & Public Policy, 18(1), 135–159. https://onlinelibrary.wiley.com/doi/10.1111/1745-9133.12419; https://prohic.nl/wp-content/uploads/2020/11/2020-04-01-CCTVReviewPizaetal.2019pdf.pdf;https://prohic.nl/wp-content/uploads/2020/11/2020-04-01-CCTVReviewPizaetal.2019pdf.pdf

[3] Meijer, A., & Wessels, M. (2021). Algorithmization of bureaucratic organizations: Using a practice lens to study how context shapes predictive policing systems. Public Administration Review, 81(5), 837–846. https://doi.org/10.1111/puar.13391

[4] Villanueva, L. P., Reyes, R. T., & Soriano, J. A. (2021). Community perception and effectiveness of public CCTV systems in selected Philippine municipalities. Philippine Journal of Criminology, 13(2), 98–113.

[5] Caplan, J. M., & Kennedy, L. W. (2020). Risk terrain modeling and crime prevention. Routledge. https://doi.org/10.4324/9780429491656

[6] Lum, C., & Koper, C. S. (2020). Evidence-based policing: Translating research into practice. Oxford University Press. https://doi.org/10.1093/oso/9780198719946.001.0001

[7] Cris Norman Olipas (2024). Improving Surveillance in a Barangay: A

[8] Study on Assessing Needs for Designing Optimal Closed-Circuit Television Camera Placement. https://www.researchgate.net/publication/378134316_Improving_Surveillan

[9] ce_in_a_Barangay_A_Study_on_Assessing_Needs_for_Designing_Optimal_Closed-Circuit_Television_Camera_Placement;