LEVEL OF IMPLEMENTATION OF E-POLICING SYSTEM ON POLICE INVESTIGATION UNITS IN THE PROVINCE OF BATAAN

Danimel C. Jurado[1] **and Ronald Q. Quinto**[2]

[1]*Bataaan Police Provincial Office,* [2]*Bataan Peninsula State University*[2]

ABSTRACT

The main objective of this study is to determine the level of implementation and challenges faced by the e-policing project of the Police Investigation Units in Bataan. E-policing project includes e-Blotter or Crime Information Reporting and Analysis System (CIRAS), Case Information Database Management System (CIDMS), e-Subpoena System, e-Rogues Gallery and e-Warrant System. This research employed mixed methods design for gathering and analyzing qualitative and quantitative research and methodologies in a single study. For the quantitative part, 65 personnel assigned to the components of the e-policing project were involved. Meanwhile, the 15 participants for the qualitative portion of the study were chosen from the respondents. The findings of the study revealed that the level of implementation of the e-policing project is "Fully Implemented". However, results of qualitative investigations revealed the following challenges in the implementation of e-policing project: slow internet connection, untrained personnel in e-policing, bogging down of the system, and inaccessibility due to the volume of users. The study concludes that the widespread adoption of e-policing system underscores the need for skills and trainings in the delivery quality services for public safety and law enforcement agencies effectiveness. However, privacy and security issues must be carefully taken into account to make sure that these technologies are used in a way that fosters citizen confidence and openness. Additionally, it suggests the necessity of providing ongoing training to police personnel involved in e-policing to keep them updated. To facilitate efficient e-policing, it proposes the installation of high-speed Internet connections in police workplaces.

Keywords: e-Policing, ICT Integration, Philippine National Police, Police Management

INTRODUCTION

The global trend in governance is shifting towards e-governance, which emphasizes participatory and inclusive principles. E-governance encompasses various sectors such as e-democracy, e-health, and e-education. Its goal is to utilize information and communication technologies (ICT) to improve service delivery, promote civic engagement, and enhance the responsiveness, consistency, and efficiency of the public sector [1].

A recent development in e-governance is e-policing, which enables law enforcement agencies to utilize technology for addressing peace and order situations in

communities. The United Nations (UN) recognized the need for e-policing to advance government services that prioritize the needs of citizens and promote civic-oriented approaches [2] [3]. Through computerization, crime mapping processes have become more detailed, allowing law enforcement agencies to analyze and correlate various sources of crime data [4].

Governments worldwide are adopting e-policing due to its advantageous benefits in reducing crime rates and maintaining peaceful and orderly communities. In the Philippines, the Philippine National Police (PNP) launched e-projects in 2016, including IT solutions aimed at enhancing police services and improving crime reporting. Components of the PNP e-policing project include the enhanced e-Blotter or Crime Information Reporting and Analysis System (CIRAS), Case Information Database Management System (CIDMS), e-Subpoena System, e-Rogues Gallery, and e-Warrant System. The Directorate for Information and Communications Technology Management (DICTM) was established to unify and standardize PNP information systems and resources, further improving frontline services.

In the Province of Bataan, the implementation of e-policing is still in its early stages, with the establishment of cybercrime units to combat online crimes. While there have been notable developments, integrating these systems into the wider policing framework remains a work in progress.

Evaluation of the PNP's e-policing project over the past six years has focused on ICT efficiency, showing effective implementation leading to reduced crime rates and improved communication among stakeholders [5] [6]. However, challenges such as poor internet connectivity and a lack of trained personnel have been identified as primary issues in many areas of the country [6]. Despite the extensive implementation of e-policing in all PNP headquarters in Bataan, there is a dearth of research specifically examining its implementation in the province.

Therefore, the aim of the present study is to investigate the implementation and challenges faced by the e-policing system in Bataan, providing essential data to understand how police departments approach e-policing. The study examines how stations under the Bataan Police Provincial Office Unit implement e-policing, identifies issues that arise during implementation, and proposes potential improvements. As contemporary policing heavily relies on smart e-policing to combat technology-driven illegal activities, this research aims to contribute to the improvement of services through the use of technology by the Philippine National Police.

The main objective of this study is to determine the level of implementation and challenges faced by the e-policing system of the Police Investigation Units of the Philippine National Police in Bataan during the Fiscal Year 2022-2023. Specifically, the study sought answers to the following questions: (1) How may the implementation of the e-policing project of the Police Investigation Units of the Philippine National Police be described in

terms of: (a) interactivity, (b) operational efficiency, (c) system quality; and (d) public safety and security? (2) How may the level of implementation of the operation of the following components of the e-policing project of the Police Investigation Units of the Philippine National Police be described: (a) Enhanced e-Blotter or Crime Information Reporting and Analysis System (CIRAS), (b) Case Information Database Management System (CIDMS); (c) e-Subpoena System, (d) e-Rogues Gallery; and (e) e-Warrant System? (3) What are the challenges and issues that the Police Investigation Units of the Philippine National Police faced in the implementation of e-policing?

The findings of the study may provide assistance to the Philippine National Police in maintaining and upgrading its e-system platform for public communication between the agency and the community. This will also help resolve any conflicts or problems that may arise during the implementation of e-policing. The study's findings have the potential to play a vital role in enhancing police efficiency and community relations. By taking into account the prevailing trend of encoding, storing, monitoring, and coordinating crime incidents, as well as employing information and communication technology (ICT) for communication and dissemination of public information, the police force can improve their e-system and foster stronger community connections.

RESEARCH METHODOLOGY

The research study utilized the explanatory sequential mixed methods design to investigate the implementation and operation of the e-policing project within the investigation units of the Philippine National Police in Bataan. This method was chosen to explore and understand the e-policing project in-depth.

For the respondents of the study for the quantitative part, personnel of the Philippine National Police assigned to the components of the e-policing project were involved. They were chosen using stratified random sampling strategy. Personnel assigned to the investigation section and designated as e-projects encoders from Non-Uniformed Personnel to Police-to-Police Executive Master Sergeant were considered while Personnel assigned in the investigation section designated only as e-projects viewers from Police Corporal to Police Lieutenant Colonel were entirely disregarded. The total number of respondents is 65 (five from each of the 12 municipalities of Bataan and five from the headquarters). On the other hand, the participants for the qualitative portion of the study were chosen from the respondents using the purposive random sample technique's guiding principles. A total of 15 participants were involved in the study.

A survey questionnaire and an interview guide served as the research instruments of this study. The survey questionnaire was divided into three parts. The first part is focused on the profile of the respondents. The second part assessed the implementation of the e-policing project in terms of interactivity, operational efficiency, system quality, and public safety and security. The third part aimed to find out the operation of the following components of the e-policing project: enhanced e-Blotter or Crime Information

Reporting and Analysis System (CIRAS), Case Information Database Management System (CIDMS), e-Subpoena System, e-Rogues Gallery, and e-Warrant System. Meanwhile, in the qualitative part, an interview guide was developed to investigate the challenges faced by the e-policing project of the Police Investigation Units of the Philippine National Police in Bataan. The survey questionnaire was validated by experts in the fields of public administration, police management, and research. It was also subjected to pilot testing and the feedback from it was incorporated for the improvement of the instrument.

The survey questionnaires were personally administered to participants to ensure a high retrieval rate. On the other hand, to collect qualitative data, tools such as audio or video recording, memos, notes, and observation were used in the interview. Personal journals were also utilized in the research to remove bias.

Descriptive statistics was applied for the analysis of the qualitative data. The implementation of the e-policing project was treated using mean and descriptive rating. Using a t-test, the significant difference in the PNP personnel's perception of the Police Investigation Units of the Philippine National Police's implementation of the e-policing project was calculated. The quantitative findings of the study were supported by the qualitative data. Using the QDA software, the interviews were transcribed and coded using three coding phases: open, axial, and selected. The researcher combined the two distinct outcomes for comparisons and interpretations after assessing the quantitative and qualitative data using an interactive technique.

RESEARCH FINDINGS

1. The level of implementation of the e-policing system of the Police Investigation Units of the Philippine National Police
Interactivity

The highest rating provided by the respondents is on "The e-policing project creates opportunities for users to get involved in the system." It has a record of M=3.80 and SD=.553, Strongly Agree. On the other hand, the lowest rating is on "It combines and incorporates different types of media to present data and information clearly." It has a record of M=3.33 and SD=.73, Strongly Agree. The composite rating (M=3.50, SD=.493, Strongly Agree) indicates that the level of implementation of the e-policing project in terms of interactivity is "Fully Implemented". This means that the e-policing project of the Philippine National Police allows users to navigate the system effectively.

Moreover, the respondents of the study highlighted how interactive the project is which ultimately helps in managing the system. As one personnel shared:

"It is an information and technology tool used by PNP which is interactive. It is designed to have a higher crime solution efficiency, higher clearance efficiency. I am familiar with the e-warrant project is an electronic database on a warrant of arrest that could be used by the PNP nationwide to verify, appropriately act on and

*promptly disclose information to the
concerned law enforcement agencies."*
(S15)

Operational Efficiency

The indicator "The system enhances
security police records and improves crime
detection, analysis, and investigation."
posted the highest rating (M=3.72,
SD=.451, Strongly Agree) while "The e-
policing project offers flexibility in terms of
the transaction of services and information
between the police and citizens using the
internet." Has the lowest rating (M=3.54,
SD=.561, Strongly Agree). In general, the
rating (M=3.62, SD=.424, Strongly Agree)
implies that the level of implementation of
the e-policing project in terms of
operational efficiency is "Fully
Implemented".

As confirmed by one of the
respondents of the study, the e-policing
project poses operational efficiency to its
users:

*"Crimes become more complex and
sophisticated and having the CIDMS the
smart policing in investigation unit is
being exercised and executed through
having an organized and efficient e-
system." (S6)*

System Quality

The highest rating obtained is on "The
e-policing project provides better access to
data and information for police officers."
(M=3.72, SD=.484, Strongly
Agree).Meanwhile, the lowest indicator is
on "It provides well-defined processes for
reporting, locating, cataloging, and
counting crime events." (M=3.51,

SD=.589, Strongly Agree). As a whole, the
rating (M=3.61, SD=.415, Strongly Agree)
suggests that the level of implementation of
the e-policing project in terms of system
quality is "Fully Implemented".

The quantitative result for System
Quality was supported by the responses of
the respondents in the interview. As
verbalized by one police personnel:

*"Through utilizing the e-policing
project it helps the PNP to have a
strategic intervention to reduce crime
and increase crime clearance efficiency
and effectiveness. Its system also allows
us to easily access information that we
need." (S4)*

According to Koper[7] modern
policing must address the fundamental
challenge of comprehending the
implications of technological progress
which includes the system quality of the
program. Information technology (IT),
analytic systems, video surveillance
systems, license plate readers, DNA
testing, and other technologies that have
broad repercussions for policing have
undergone a number of significant
breakthroughs in recent decades. In the
Philippines, the utilization of ICT
integration in the system of the PNP was
initiated when e-policing was introduced.
Since law enforcement agencies at all levels
of government invest enormous sums in
technology in the hopes of increasing their
efficacy and efficiency, decisions about
technology acquisition and deployment are
of utmost importance to police.

Public Safety and Security

The highest rating is on "It employs creative strategies for utilizing instruments to improve information confidentiality and public safety." (M=3.62, SD=.521, Strongly Agree) and the lowest rating is on "The e-policing project implements an array of technological advancements to improve operational efficiency and outcomes and provide security." (M=3.48, SD=.640, Strongly Agree). The composite rating of (M=3.62, SD=.424, Strongly Agree) denotes that the level of implementation of the e-policing project in terms of public safety and security is "Fully Implemented".

> *"I believe that there are opportunities in utilizing the e-project system and brace the new technological methods in doing our job and serving the people. The continuous upgrading of the system improves the efficient reporting, coordination and sharing of timely information about public safety to the community. Its features were designed to maintain the security of the public." (S1)*

Similarly, Ibangga[8] explained that digital technology is an essential tool for public safety organizations to better protect the public, prevent and combat crime, and provide for the needs of citizens. It has the ability to change how our communities provide for public safety.

Effective, efficient, and proactive policing is made possible by the digitalization of police and other public safety agencies. Using public safety technology, law enforcement and safety organizations may properly and transparently give more data, which is a crucial first step in establishing true community policing that brings together cops, residents, and decision-makers.

2. Level of implementation of the operation of the components of the e-policing system of the Police Investigation Units of the Philippine National Police

Enhanced e-Blotter or Crime Information Reporting and Analysis System (CIRAS)

The highest rating provided is on "Encode all the crime incidents upon receipt within twenty-four (24) hours." It has a recorded response of M=3.85 and SD=.375, Strongly Agree. Meanwhile, the lowest rating is on "Provide a copy of the Incident Record Form (IRF) to the data owner/complainant and shall likewise refrain from giving out copies toother person or entities except when required by the courts." (M=3.31, SD=.751, Strongly Agree). In total, the mean rating (M=3.65, SD=.357, Strongly Agree) implies that the level of implementation of the operation of CIRAS in the e-policing project is "Fully Implemented".

The full implementation of the indicators of the CIRAS as indicated by the quantitative data was established by the qualitative data. As one said:

> *"The e-policing project is also known as the NGIS or Next Generation Investigative System under the Directorate of Investigation, Philippine National Police. I'm most familiar with e-Blotter or Crime Information Reporting and Analysis System (CIRAS). It is an electronic system wherein all inputs in blotter book were*

encoded in which you can provide data regarding to crime analysis, statistics, mapping and etc." (S3)

In a related sense, another participant of the study responded:

"The CIRAS or Crime Incident Reporting and Analysis System is an Information System is also known as e-blotter It is an electronic database system that facilitates crime documentation and systematic data storage and retrieval. It presents a quick, fast and reliable transmission of crime information from lower police units and offices of the PNP to the National Headquarters at Camp Crame, Quezon City." (S1)

In the study of Escalona[5], it was revealed that the police personnel in Laoag City were aware of the implementation of CIRAS as a component of the e-policing project of the Philippine National Police. In comparison to this investigation, both groups of respondents were deemed aware of the said system.

Case Information Database Management System (CIDMS)

The indicator "The Chief Investigator is able to submit a memorandum to the RIDMD, DIDMD, PIDMB, and CIDMB that will be signed by the Chief of Police or Head of Unit and will include the name of the outgoing Investigator, his current unit, and his prior unit" posted the highest rating (M=3.77, SD=.438, Strongly Agree) while the indicator "Monitor cases and produce reports." has the lowest rating (M=3.45, SD=.660, Strongly Agree). In general, the rating (M=3.63, SD=.390, Strongly Agree)

shows that the level of implementation of the operation of CIDMS is "Fully Implemented".

This result was complemented by the responses in the interview. One participant explained the implementation of CIDMS in their office. As emphasized:

"It is an enhanced modernized data storage system used to facilitate crime documentation, including crime incidents, criminal records, and others. CIDMS stands for Case Information Database Management System which the web-based was developed in 2016 so that the PNP units will have unified storage of case files. In which all hard copies are being digitized and put into the system and used as cross-referencing in solving some cases." (S5)

e-Subpoena System

The indicator, "Check that the police station's e-Subpoena System is used and utilized." posted the highest rating (M=3.76, SD=.438, Strongly Agree) while "An appropriately informed police officer is requested, and they should personally be at the police station to accept the subpoena." has the lowest rating (M=3.30, SD=.854, Strongly Agree). Taken as a whole, the mean rating (M=3.58, SD=.351, Strongly Agree) indicates that the level of implementation of the operation of the e-Subpoena System in the e-policing project is "Fully Implemented".

Congruently, one participant mentioned how the e-subpoena system accelerates their work in the investigation system:

Level of Implementation of E-Policing System on Police Investigation Units in the Province of Bataan

"The e-policing project is a web-based information system that speeds up the work in the investigation system. In e subpoena- system, it facilitates the issuances and expedites the transmittal of the subpoena from the court to the concerned police officers." (S7)

Another police personnel explained how this project enables the police to get court summonses and notices more quickly:

"The e-policing system is one of the new technologies acquired by the Philippine National Police for an easy recording and monitoring of incidents, crime-related information including the victims and suspects, subpoenas, photo galleries of wanted criminals and etc. which is accessible to all PNP units and stations in the Philippines. I am most familiar with the e-subpoena which quickens the transmittal of court subpoenas and notices to the police. The system particularly addresses police officers who are witnesses in criminal cases in responding to summons issued by the court." (S8)

e-Rogues Gallery

The highest rating obtained is on "Regularly update the gallery of wanted criminals." (M=3.77, SD=.438, Strongly Agree) while the lowest is on "Integrate the facial composite from the crime laboratory office." (M=3.23, SD=.832, Agree). Overall, the rating (M=3.58, SD=.369, Strongly Agree) suggests that the level of implementation of the operation of e-Rogues in the e-policing project is "Fully Implemented".

Evidently, the e-Rogues Galley is being implemented in the provincial stations of the Philippine National Police in Bataan. As detailed by one personnel:

"It is an electronic-crimefighting tool used by the PNP personnel in the investigation and detective management unit that can enhance crime solution efficiency and potentially reduce crime rates. When it comes to e-rouge, it is an electronic compilation of information, descriptions, and photos of the suspects or criminals." (S12)

Moreover, Escalona[5] explained that e-Rogues Gallery is an electronic rogues' gallery of wanted persons that will provide every police station in the country access to data on criminals to include pictures that are in the files of police units in the country. The study of Escalona confirmed the awareness of the personnel of PNP on the implementation of the e-Rouges Gallery which is comparable to the result of the current paper.

e-Warrant System

The indicator with the highest rating is "Keep the privacy and confidentiality of every piece of information." (M=3.76, SD=.438, Strongly Agree) and the lowest rating is on "Immediate access and monitoring of persons with active or pending warrants of arrest" (M=3.54, SD=.519, Strongly Agree).As a whole, the rating (M=3.66, SD=.419, Strongly Agree) infers that the level of implementation of the operation of the e-Warrant System in the e-policing project is "Fully Implemented".

In line with this, the responses of the participants in the interview illuminated the level of implementation of the e-Warrant System. As underscored:

> *"The e-policing system is the use of technology to further contributes to effective policing and crime monitoring. Like, the e-warrant system is a system where all warrants of arrest will be electronically documented so that they can be accessed through computers."* (S14)

3. Issues and Challenges that the Police Investigation Units of the Philippine National Police in the implementation of e-policing

With the arrival of digitalization in the country during the twentieth century, the world saw a fast-paced paradigm shift. Information and communication technologies (ICTs) have significantly altered public perception, and the symbiotic link between the police and the rest of society has allowed for a number of ICT-enabled policing changes. The ability to process data has increased along with the effectiveness and efficiency of the police department as a whole. Due to advances in intelligence and investigation techniques, it is now simple to find criminal histories, databases have been built to track down offenders, and old crime charts have been replaced by cutting-edge techniques for crime detection.

With the integration of ICT into the policing system, some issues and challenges arise with its implementation. Through the conduct of the interviews with the 15 respondents of the study, the following themes were taken:

Slow Internet Connection

The slow Internet connection in the Philippines serves as one of the issues in the implementation of the e-policing project in the Philippines. As shared: *"Slow internet connection and the system is sometimes not accessible sometimes."* (S5)

This was seconded by another participant as they narrated the delay in the delivery of their function because of connection problems: *"Late uploading of mug shots because of system error and slow intermittent internet connection."* (S12)

Moreover, one police personnel verbalized: "*Some of the challenges we encountered are incomplete data of the incident to be encoded, updating of the system, and poor internet connection."* (S3)

Untrained Personnel in e-Policing

One of the personnel highlighted the need for training in using the e-policing system so that the staff assigned to it may navigate it easily and effectively: *"There's no proper turn-over of duties from former e-warrant PNCO then at the same time no formal training on using the system."* (S14)

In a parallel manner, new users find it difficult to utilize the project: *"Since I am a new user of e-subpoena, I don't have formal training on the system. And it is hard to request technical assistance in a higher office if there's a query."* (S8)

Bogging Down of the System Due to Maintenance

Bogging down of the system occurs when the program is under maintenance. As Alincastre and Dalugdog [6], disclosed that the components of the e-policing system experience delay when many personnel utilize it at the same time or when it is under maintenance. This becomes an issue of the system.

The conduct of system upgrading will benefit the system. However, it sometimes causes delays in report submission. As shared: *"There were instances that the system is bogging down or not available because of the maintenance, upgrading, and adding features on the system." (S2)*

This was also the idea of other police personnel. They explained: *Some of the challenges we encountered are incomplete data of the incident to be encoded, updating of the system, and poor internet connection. (S3)*

System maintenance may also cause difficulty in accessing the sites. As stated by one of the participants: *"Inaccessibility of E-rouge at random times due to downtime or maintenance and sometimes, slow internet connection." (S10)*

Inaccessibility Due to the Volume of Users

The implementation of the e-policing system of the Philippine National Police which includes the CIRAS, CIDMS, e-Subpoena, e-Rogue Gallery, and e-Warrant System was initiated in 2016. Alincastre and Dalugdog[6] discovered that the execution of the system ran across significant issues and challenges with putting the e-project technologies into place. One of its issues is inaccessibility because of the large number of users who use it at the same time.

Correspondingly, participants of the study explained how difficult to open the system, especially during working hours: *"The system is not easy to access especially during office hours from 8:00 AM to 5:00 PM due to the volume of simultaneous users all over the country using the website." (S4)*

Another participant expressed his experiences in getting into the website of the e- policing project: *"There are also issues in accessing the website because too many users use it." (S3)*

CONCLUSIONS

The research study draws the following conclusions in light of the study's findings:

The widespread adoption of e-policing system has the potential to increase necessary skills and trainings in the delivery quality services for public safety and law enforcement agencies effectiveness. However, privacy and security issues must be carefully taken into account, and it is important to make sure that these technologies are used in a way that fosters citizen confidence and openness.

Technology framework and assets can be a useful tool to support the adoption of e-policing for boosting efforts at crime prevention and detection. The ability of law enforcement organizations to successfully incorporate these technologies into their operations and communicate with citizens to foster community support will be crucial to the success of e-policing programs.

The creation of e-policing systems in terms of efficiency and effectiveness must be based on ethical principles like respect for privacy, accountability, and transparency. To make sure that e-policing programs are implemented in a way that maintains the values and principles of a democratic society, policymakers, and law enforcement organizations should collaborate closely with people and civil society organizations.

RECOMMENDATIONS

Based on the conclusions and findings of the study, the following recommendations are given:

The data generated from the e-policing system should be used by the provincial government to improve services and plan projects in Bataan. Because of this, the integration of Information and Communication Technology, therefore, should be encouraged in police management.

New users of the e-policing components should undergo orientation on how to navigate each unit so that they will be equipped with the appropriate approaches as they use the systems. Consistent training on e-policing should be done to update the police personnel who are designated in e-policing.

Installation of a fast Internet connection in all workplaces with at least 25 Mbps of download speed and 3 Mbps of upload speed should be made so that police personnel can conduct their daily e-policing duty.

Recognizing the limits of this study, the researcher suggests a replication of this study. However, it is recommended to widen the scope and locality. This will produce a clearer and more accurate picture of the implementation of the e-policing system.

REFERENCES

[1] UNESCO. (2003). [Online]. http://portal.unesco.org/ci/en/ev.php URL_ID=4404&URL_DO=DO_ TOPIc&URL_SEcTION=201.html

[2] Ben, E. R., & Schuppan, T. (2016). *E-government and the transformation of professionalism: The case of the police.* In System Sciences (HICSS), 2016 49th Hawaii International Conference on IEEE. (pp. 2667-2676).

[3] Sachdeva, N., & Kumaraguru, P. (2014*). Online social media and police in India: Behavior, perceptions, challenges.* arXiv preprint arXiv:1403.2042.

[4] Mammalian, C.A. (2014). *The Use of computerized crime mapping by law enforcement: survey results.* National Institute of Justice, Research Review. Crime Mapping Research Center.

[5] Escalona, J. (2020). *E-Policing in the PNP Laoag City Police Station: Case Study.* International Journal of Innovative Science and Research Technology, ISSN No:- 2456-2165.

[6] Alincastre, G.D. & Dalugdog, W.D. (2022). Internal stakeholders' evaluation of the Philippine National Police electronic – project systems. *International Journal of Academe and Industry Research, 3*(1):93-109. DOI: https://doi.org/10.53378/352859

[7] Koper, C.S., Lum, C., Willis, J.J., Woods, D.J., and Hibdon, J. (2010). *Realizing the potential of technology in policing: A multisite study of the social, organizational, and behavioral aspects of implementing policing technologies.* https://cebcp.org/wp-content/technology/ImpactTechnologyFinalReport.pdf.

[8] Ibanga, I. (2022). *Technology: A game changer for public safety and security.* https://www.premiumtimesng.com/opinion/509169-technology-a-game-changer-   for-public-safety-and-security-by-inyene-ibanga.html?tztc=1