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SOCO INVESTIGATORS' COMPETENCIES: A FRAMEWORK FOR BEST PRACTICES

A Dissertation

Presented to

The Faculty of the Graduate School

Philippine College of Criminology

In Partial Fulfillment

of the Requirements for the Degree

Doctor of Philosophy in Criminology

By

Robert Balibat Momo

May 2025

Approval Sheet

This DISSERTATION entitled "**SOCO Investigators' Competencies: A Framework for Best Practices"** prepared and submitted by ROBERT B MOMO, in partial fulfilment of the requirements for the degree of Doctor of Philosophy in Criminology, has been examined and is recommended for approval.

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ROBERT B. MOMO
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Abstract

This study investigated the competencies of Scene of the Crime Operatives (SOCO) investigators within the Eastern Police District Forensic Unit (EPDFU) in Metro Manila, Philippines. It developed a framework for best practices in forensic investigation. Recognizing the growing complexity of crime scene investigations and the evolving role of forensic science, this research assesses investigators' technical capabilities, adherence to protocols, and access to forensic resources and tools. A concurrent mixed-methods design was employed, integrating quantitative data from Individual Performance Evaluation Ratings (IPER) and competency assessments with qualitative insights from semi-structured interviews to explore operational challenges. Findings reveal significant disparities in resource availability, with many investigators lacking access to modern forensic equipment and advanced training. While competencies in basic crime scene procedures were generally adequate, gaps persisted in areas requiring advanced forensic knowledge and inter-agency coordination. The study established a strong correlation between resource adequacy and investigator performance, highlighting the systemic impact of logistical and procedural limitations on evidence handling and crime resolution. This research contributes to the criminology literature by contextualizing global forensic standards within local constraints, offering a practical framework for modernizing forensic operations. It underscores the importance of equipping investigators with both skills and tools to ensure credible, efficient, and timely crime scene investigations—ultimately reinforcing public trust and judicial integrity.

Keywords: *SOCO investigators, forensic competencies, crime scene investigation, resource adequacy, Eastern Police District Forensic Unit*

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In my twenty-two years of service in the government as a police officer, I have achieved many goals in life. One of these is to continue my studies and complete my Master of Science in Criminology at the Republican College. I was allowed to enroll in a Doctor of Philosophy in Criminology Course at the Philippine College of Criminology to develop my knowledge, and I hoped that I could use it as another career path in teaching.

First of all, I would like to thank my loving wife and children who served as my strength and inspiration in achieving my dreams to finish these studies.

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Above all, I thank the Lord God that no matter what trials come into my life, He is there guiding and protecting me.

ROBERT B. MOMO
Researcher

Dedication

I dedicate this dissertation to my beloved wife and children, who have been tireless in supporting me when I needed them. To my loving mother, who guided me, and to my late father, who was also a law enforcement officer, who inspired me to become a good police officer.

ROBERT B. MOMO
Researcher

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Introduction

1.1 Background of the Study

1.1.1 Introduction. Modern criminal justice systems use crime scene investigation to bridge evidence collection and successful case resolution in most countries. Forensic science is an important aspect for a country like the Philippines, considering the multiple challenges its law enforcement agencies face in maintaining justice. Still, persistent gaps in the training process, resource access, and operational efficiency persist. Despite the continued development of forensic tools and methodologies, outdated practices and resource deficiencies prevail in this country, affecting not only the accuracy but even the admissibility of evidence.

The Eastern Police District Forensic Unit (EPDFU), which operates in Metro Manila's most populous and crime-prone areas, is vital in handling complex cases in very challenging situations. The pressures on Scene of the Crime Operatives (SOCO) in this district are sharply keen because of the volume of cases and their complexity, limited resources, and fewer opportunities for training. These all contribute to inefficiencies in evidence management and case resolution, which dent public confidence in the administration of justice.

To achieve this, this study determines the competencies of investigators handling SOCO cases in the EPD Forensic Unit, especially regarding technical competence, number of resources, and concerns during operations. The program for modernization by the Philippine National Police (PNP) hopes to address some of these concerns, but until now, no systematic investigation of the

skills, tools, and ways undertaken has been conducted. The study will fill this gap by giving an overall assessment of the present situation concerning the practices of CSI, which could promote better forensic services in the Philippines.

Establishing the Gap and Need for the Study

Forensic science has transformed criminal investigation worldwide using new and improved tools from DNA and digital forensics to 3-D crime reconstruction. The integration of these new technologies in other countries, such as America and England, has succeeded, but it needs to catch up to challenges such as skill gaps or resources. Contrarily, it is compounded problems for countries such as the Philippines because their budget is lower, and fewer tools and training resources are available for forensic providers.

In the local context, the prevailing literature underscores considerable areas for improvement in forensic units' resources and operational structures. Despite these obstacles, minimal attempts have been made to comprehensively assess the competencies of SOCO investigators, especially in high-pressure districts such as the EPD. Existing research predominantly emphasizes systemic issues, overlooking frontline investigators' specific capabilities and resource requirements. This neglect generates a significant void in comprehending the interactions among competencies, resource accessibility, and operational difficulties within the Philippine forensic system.

Significance of Addressing the Gap

This research intends to fill the specific gaps identified through a systematic evaluation of the relevant competencies of SOCO investigators in the

EPD Forensic Unit. The study looks into dimensions such as technical proficiency, adherence to protocols for evidence handling, and access to resources to spot specific areas for improvement. The findings are likely to inform the development of a cognate set of actions, such as the design of training programs, allocation of resources, or the reform of structures and policies to enhance the efficiency and effectiveness of CSI practices.

In addition to that, it also plans to contribute towards the wider effort of modernizing the Philippine forensic system. The move is a step towards localizing international standards to the country's unique context and making a more functional yet feasible forensic framework. Over time, the confidence in evidence when presented in court should be improved, and not only should the criminal justice system be strengthened, but the public's trust in law enforcement should also be strengthened.

In summary, this study is both timely and necessary. It tackles major shortcomings in the competencies and capabilities of SOCO investigators and delivers practical intervention programs to improve forensic services in the Eastern Police District and elsewhere. In doing so, it provides the foundation for a more effective, robust, and justice-based CSI system in the Philippines.

1.1.2 International Background. Modern forensic science development worldwide stems mainly from technological breakthroughs combined with advancing use of scientific methods in legal investigations. The United Nations Office on Drugs and Crime (UNODC), together with the International Criminal Police Organization (INTERPOL) and the International Association of Forensic

Sciences (IAFS), has become instrumental in promoting best practices of forensic work through its efforts for evidence collection and preservation and analysis development. These organizations have created guidelines and protocols to strengthen forensic process reliability because they matter most for transnational crime investigations and complex forensic cases (UNODC, 2023).

Digital forensics and forensic DNA analysis have become prominent criminal investigation tools during recent years because they enhance conviction rates via evidence-based prosecutions (Ayers et al., 2023). Jurisdictions throughout the world maintain major differences in their forensic capabilities particularly in nations and regions with limited resources.

The Philippines along with other developing nations encounters obstacles when trying to access state-of-the-art forensic technologies that include DNA profiling and digital forensics and 3D crime scene reconstruction which developed nations effectively utilize. The UNODC has determined that many regions face three critical obstacles that negatively impact forensic work quality, which include resource limitations and training gaps and laboratory modernization needs (UNODC, 2023). Criminal investigations receive diminished forensic reliability from operational inefficiencies that encompass weak inter- agency coordination system together with logistical deficiencies and chain of custody inconsistencies according to INTERPOL (2022).

Studies demonstrate that developing countries face two major challenges in forensic science because outdated investigative methods combine with limited access to modern forensic databases which reduces the efficiency of criminal

investigations (Gogolin, 2021). The Philippine National Police (PNP) Scene of the Crime Operatives (SOCO) unit has become more important in Philippine crime investigations.

Research shows that multiple issues still affect forensic services because of limited resources and incomplete training standards and unstandardized procedures. The forensic practitioners operating in the country show advanced competency skills but restricted efficiency stems from staffing shortages and insufficient training and infrastructure resources according to Santos (2024). An improvement in investigative practices has led to a 61.87% decrease in national crime statistics during the period from 2022 to 2024, according to Sigales (2024).

The PNP Crime Laboratory suffers from insufficient funding which blocks its ability to obtain modern forensic equipment and technology (PNP, 2021). The international forensic community faces present-day difficulties, which include moral questions about artificial intelligence in evidence assessment as well as escalating digital forensics intricacy and changes in legal structures to which forensic science must adjust. These emerging issues have minimal investigation regarding their impact on developing forensic systems across the world including in the Philippines.

Forensic DNA analysis in the country has shown improvement according to Rodriguez et al. (2021) but operational challenges still prevent its regular use in sexual assault investigations and disaster victim identification (Ungria et al., 2022). The research investigates SOCO investigator competencies within the

Eastern Police District (EPD) of the Philippines to evaluate their operational challenges and resource adequacy and technical abilities. The study contextualizes worldwide forensic benchmarks to Philippine crime scene investigation standards while advancing forensic science and crime management research about Philippine forensic standards.

1.1.3 National Background. The criminal justice system in the Philippines is incomplete without forensic science, and the PNP Forensic Group (formerly the Crime Laboratory) is the lead agency in crime scene investigations. However, the PNP Forensic Group faces a number of challenges that hinder it from effectively and efficiently performing its work.

The PNP has been asked repeatedly to improve its forensic science services to meet global standards. DNA analysis and digital forensics tools which are advanced lack in the Philippines create significant obstacles for SOCO teams in their work at complex crime scenes. The criminal investigations of Cauayan City face obstacles because their Crime Laboratory Office lacks necessary DNA analysis tools while having insufficient qualified DNA analysts without a specialized DNA testing facility (Bautista, 2024).

The main drawback exists in the insufficient training received by forensic investigators at the SOCO unit. Quiape et al. (2023), in their study, illustrate how Philippine National Police investigators struggle with forensic examinations, particularly through dactyloscopy, since their forensic experience remains low. Assessing the work output of police detectives who investigate crime scenes

with forensic technology remains challenging because it ensures public trust in public officials according to principle.

Poor coordination, high caseloads, and inconsistent adherence to protocols massively impact the quality of forensic investigations. Under the PNP standard operating procedure on crime scene investigation, first responders, investigators, and SOCO teams help maintain evidence integrity. The need for strict protocol compliance stands out as critical because procedural breakdowns produce evidence-handling inconsistencies and slow down case progressions, according to Osman et al. (2021). These operational challenges undermine forensic investigations, but even more so, they undermine public confidence in the justice system.

The credibility and efficiency of forensic investigations are founded on public trust in law enforcement agencies. In public surveys, confidence in the system eroded as investigations were delayed or botched. These issues need to be addressed to rebuild trust and ensure that justice is delivered on time and reliably.

1.1.4 Local Background. One of the most noticeable was the EPD, which covers Mandaluyong, Marikina, Pasig, and San Juan in Metro Manila and has reduced crime rates. In October 2022, the EPD was noted to have the lowest crime rate and the least number of incidents of eight key crimes (murder, homicide, robbery, theft, physical injuries, carnapping and rape) in the National Capital Region (NCR). In this, the district furthered its campaign to keep the peace and order in one of the most populous cities in the country as well (Manila

Bulletin, 2022). However, the number of major crimes reported in the first quarter of 2023 is down dramatically from the same period in 2022, which indicates the EPD's continued work on public safety (Journal News, 2023).

While these advances have been made, the EPD Forensic Unit, which would provide the scientific support needed for criminal investigations, has many operational challenges. A review of the PNP Crime Laboratory indicated resource, training, and infrastructure gaps impeding effective forensic investigation. For example, the EPD cannot process complicated cases using portable DNA analyzers and digital crime scene reconstruction equipment (SSRN, 2021). Timely evidence collection and analysis are critical in high-crime urban settings, and these resource constraints are particularly acute.

Many investigators, however, need access to specialized training programs that evolve with the state of the art in forensic technology. General forensic training is offered, yet lacking continuous professional development opportunities, they cannot cope with emerging challenges such as cybercrime and organized criminal activities (SSRN, 2021). In addition, the EPD's forensic operations are inefficient operationally - understaffed, lacking office space, and lacking logistical support. Not only do these challenges slow down investigations, but they also put the evidence at risk.

Forensic investigations also face a critical community trust issue. Investigations are frequently tied to public confidence in the justice system and to their perceived reliability and timeliness. Yet resource and operational delays can erode trust, and it is necessary to close these gaps. Resource augmentation,

enhanced training, and better infrastructure are needed to strengthen the capacity of the EPD Forensic Unit to sustain public confidence and fast-track the resolution of criminal cases.

1.2 Related Literature

1.2.1 Foreign Literature. SOCO or CSI are multifaceted and indispensable personnel to criminal investigations. Scientific collection and analysis of physical evidence is their primary responsibility and they follow the Locard Exchange Principle that every contact has a trace (Singh, 2022). Forensic investigations are mainly effective if they have the capacity to systematically inspect crime scenes to avoid the destruction of crucial evidence (Badiye et al., 2023).

The first thing which the role of these people is to secure the crime scene, so that the scene doesn't get contaminated and the integrity of the evidence is preserved (Badiye et al., 2023). After securing the scene, SOCOs document the scene extensively, including photographing, sketching, taking notes, and advanced recording techniques like UAVs (drones) and laser scanning to record the scene as it was (Deshmukh et al., 2023). Proper documentation is important because it preserves the context of the crime scene, and all observations and collected evidence can be used in court (Ayers et al., 2023).

Furthermore, SOCOs gather evidence through various means, including picking, lifting and vacuum sweeping which depends on the type of evidence (Singh, 2022). In addition, they must coordinate different forensic disciplines such as fingerprint analysis, forensic chemistry and DNA forensics to provide a

complete and accurate reconstruction of events (Badiye et al., 2023). One of the major parts of their role is crime scene reconstruction through scientific reasoning and in laboratory testing, to eliminate unlikely scenarios and determine the most plausible chain of events (Tietjen, 2023).

Crime scene investigations have definitely benefited from the use of cutting-edge technology as it has greatly improved the accuracy, efficiency and reliability of crime scene investigations. In the current situation, the Augmented Reality (AR) and Virtual Reality (VR) technologies facilitate the investigators to virtually revisit crime scene and improve the accuracy of statement documentation and forensic analysis (Sharma et al., 2023).

The trusted records schemes have been developed to ensure data integrity and protect the credibility of digital crime scene data and prevent evidence tampering (Yang et al., 2020). Furthermore, drones loaded with AI- driven cameras are vitally employed to gather real time evidence by means of automatic collection, which allows the forensic teams to reach those dangerous areas with safely and gather the information without intruding on the crime scene (Gur et al., 2020).

Designed with the use of a digital crime scene management platform, ARCRIME system, (a) the real-time intelligence, simulations and evidence organization (Haque & Saleem, 2020) improve the efficiency of SOCOs (b). Computer trends of use on crime trend predictions, forensic analysis, and investigative decision making (Saini & Kaur, 2023; Saravanan et al., 2021) moreover instrumentalized artificial intelligence (AI) as well as machine leaning

(ML). SOCO efficiency is improved by these AI driven models that aids in the detection of patterns of criminal activities thereby allowing investigators to focus on high-risk crime zones. Surveillance systems have improved greatly also. With the help of AI powered CCTV analytics one can now identify suspicious behaviors in real time and send alerts to law enforcement in case of potential threat and help them to respond fastly (Gorgas, 2022).

Nevertheless, the issue of cost and accessibility still remains a great hurdle for those advancements. Although, many law enforcement agencies do not have access to these same LIDAR scanning, VR, and AI-based forensic tools due to their high cost, particularly those functioning in areas undergoing development (Deshmukh et al., 2023). The National Forensic Centre in Sweden has ventured into 3D modeling and VR visualization of forensic investigations, but time and effort to produce realistic models is still lacking (Engström, 2020). Moreover, the utilization of AI in digital forensic analysis has led to considerable enhancement in productivity and precision, but such implementation needs the availability of highly qualified workforce and high capital outlay (Chen, 2020).

Although technological advances have made crime scene investigations easier, SOCOs are still faced with major operation challenges. Handling hazardous crime scenes, for example sour gas well testing sites that are prone to toxic gases like H_2S and CO_2, is one of the biggest concerns (Ahmad et al., 2022).

Furthermore, the logistical constraints still prevent a forensic analysis. Poor logistics management in forensic operations, especially in offshore crime

scene investigation, can result into poor collection of evidence and overall safety (Igbeka et al., 2024). Challenges in the cybercrime investigations lie in having to deal with vast amounts of the digital data, overcoming the prejudice of AI systems in security, and maintaining clarity with regards to the cyber forensic methodologies (Montasari, 2024). In addition, crime scenes associated with low permeability and sour reservoirs bring technical challenges, and forensic teams have to use specialized equipment and perform investigations under very strict environmental and safety regulations (Edmonstone et al., 2020).

It is also a major issue in finding balance between security demand and procedural fairness. SOCOs offices are often based out of high-risk environments where they must work within legal constraints, bureaucratic roadblocks, and unforeseen complications in the field. In these cases, the law enforcement agencies may resort to informal operational accommodations when dealing with unpredictable situations (La Porte, 2020).

Currently, however, forensic science is rapidly developing and new solutions and ways of analysis are being provided to solve the problems of crime scene management and evidence analysis. Moreover, development of trusted processing scheme for forensic records, especially those that are based on cryptographic security standards will enhance the credibility of digital forensic evidence and facilitate legal proceedings (Yang et al., 2020).

It is likely that AI driven forensic platforms will become the standard tool for SOCO teams to analyze crime scene data, profile the suspects and evidence correlation (Saini & Kaur, 2023; Saravanan et al., 2021). Additionally, VR based

training programs for forensic investigators may fill in knowledge gaps by expanding to cover the latest forensic methodologies and technological skills that new SOCO recruits must be trained with (Deshmukh et al., 2023).

Nevertheless, law enforcement agencies have to put forensic modernization funding as a priority, improve forensic training programs, and remove the policy barriers that limit the use of new forensic technologies (Chen, 2020).

1.2.2 Local Literature. Forensic science serves as a vital pillar in the Philippine criminal justice system of having investigations and legal proceedings scientifically based and evidence driven. The past three decades have seen the proliferation of forensic disciplines including forensic pathology, digital forensics, and forensic linguistics, all of which have become useful tools in resolving crimes and making sure serious crimes are not ruled out with respect to serious crimes and serious criminals are brought to book. Nevertheless, there are issues in areas of competency, resource allocation, and policy implementation that mitigates forensic investigations from achieving full potential of delivering accurate and effective legal proceedings (Dalugdog et al., 2023). Crime scene management and evidence preservation are of the main concern in forensic investigations.

SOCO units of the PNP are dedicated to the scientific collection, preservation and analysis of physical evidence for the purpose of supporting criminal investigations. Their duties are crime scene photography, fingerprint dusting, forensic sampling, and postmortem examinations. Mejia (2024) states

that SOCO operatives investigate blood traces, hair fibers, pieces of clothing, paint, glass, and other physical matter left at crime scenes.

Specialized services like DNA analysis, ballistics examination and fingerprint identification are also provided by the PNP Crime Laboratory, which is very important in forensic investigations. There are currently five NCR District Crime Laboratory Offices, sixteen Regional Crime Laboratory Offices, and one hundred and one Provincial Crime Laboratory Offices in the Philippines. These offices provide services such as autopsy, drug testing, DNA examination, examination of altered or erased documents, counterfeit bills, fingerprinting, handwriting identification, histopathological examination, macro-etching examination, polygraph examination, semen determination, serology examination, signature identification, stencil tracing, virginity determination, and SOCO evidence processing (Benter and Cawi, 2021). Nevertheless, it is still affected by funding inadequacies, outdated forensic equipment and shortages of trained forensic personnel. Forensic science is considered of significant value in crime case resolution. Santos (2024) in his study points out the shortages in manpower, infrastructure and technical training that greatly affect forensic efficiency in the country.

Philippine crime exists as a complex issue which develops through various economic and socio-political factors. Nojor et al. (2022) noted a decreasing crime trend throughout Philippine territory since 2016 when the initial crime rate reached 8.93 until it reached 6.47 in 2018 indicating more than 20% annual reduction rates. Also, the crime rate in Manila stands higher than those of other

ASEAN cities in 2022 (Nojor et al., 2022). Last year, the incidence of national crime rates drops significantly, evidently which is due to the influence of forensic science within the crime prevention and law enforcement. The national crime rate during the first two years of President Ferdinand R. Marcos Jr. administration decreased by 62 percent, the PNP reported. Between 2016 and 2018, crime incidents peaked at 217,830 cases, but between 2022 and 2024, they fell to 83,059 cases, which is a huge improvement in terms of public safety (DILG, 2024). Forensic driven law enforcement strategies have resulted in 27% increase in PNP's crime clearance efficiency rate and 10% increase in crime solution efficiency rate.

Furthermore, all Metro Manila police station now has on-site SOCO teams which has enhanced their forensic investigation capabilities. Police Major General Debold Sinas has established special SOCO teams in every city of NCR to achieve response times from 5 to 10 minutes for forensic evidence recovery at crime sites (Reyes, 2020).

They further establish the role of forensic science in crime reduction, on the basis of regional statistics. According to the NCRPO, the crime rate in Metro Manila from November 2024 to mid-January 2025 declined by 23.73 percent, with index crimes dropping from 1,007 to 768 cases (Rita, 2025). From July 2022 to July 2024, the PNP recorded a 61.87 percent decline in the index crime rate, crimes against persons were reduced by 55.69 percent while property crimes went down by 66.81 percent (Sigales, 2024). Investigative capabilities of SOCO teams keep growing. In 2020, the PNP recorded 775,356 forensic assistances

requests while it conducted 926,783 laboratory examination. These are growing numbers, and demonstrate the way forensic science has increasingly come to be depended on in solving a case. Nevertheless, logistical constraints, budgetary constraints, and shortages of forensic manpower (especially in provincial areas) are still very much an issue (PNP, 2021).

Among the most prominent of the forensic discoveries made in the country was the falsifying of death certificates in drug war cases. Exhumed remains that Raquel Fortun found bore bullet holes, something not in official records that put their deaths down to natural causes. The practice of verbal autopsy was the main cause of this issue, which the Department of Justice (DOJ) had to admit to the widespread falsification of drug war death certificates (Talabong, 2022).

However, forensic science performs a humanitarian function as well in disaster response. The security threats, booby trapped bodies and extreme weather conditions made it very challenging to retrieve and identify human remains from the Marawi siege. Retrieval operations were led by the Bureau of Fire Protection (BFP) while PNP-SOCO personnel documented the remains. Specialized forensic training was provided to the Philippine Red Cross and ICRC for dignified management of the deceased (Ubelaker, Parra, & Zapico, 2020). DNA samples gathered in Iligan City were sent to PNP DNA laboratories in Manila to properly identify missing persons.

DNA forensics in the Philippines is still underfunded and underutilized, especially in the cases of sexual assault and disaster victim identification. Forensic DNA testing is carried out by three government institutions, namely, the

PNP Crime Laboratory which specializes on criminal casework, the National Bureau of Investigation which is responsible for forensic investigations, and the University of the Philippines DNA Analysis Laboratory (UP-DAL) which deals with forensic genetics research (Rodriguez et al., 2021).

This was evidenced by a study on the Cauayan City Crime Laboratory Office (CCCLO) that stated that inadequate DNA analysis core equipment, shortages of trained DNA analysts, and lack of a dedicated DNA laboratory facility impedes forensic efficiency (Bautista, 2024). But the country's forensic capabilities are limited by the high cost of DNA testing equipment and the lack of government funding.

The digital forensics has become all more important with rise of ransomware attacks, online scams, identity theft, Denial of Service (DoS) attacks etc. Currently, forensic investigators are now concerned with obtaining, processing, and analyzing electronic data as evidence in legal proceedings (Blancaflor et al., 2023). Nevertheless, digital forensic investigations become more complex, the rapidly evolving cybercrime technologies are out of pace with the law enforcement agencies (Blancaflor et al., 2023). However, to further improve forensic objectivity, the National Police Commission (NAPOLCOM) suggested that SOCO be taken out of PNP so that forensic investigations are separate and free from external influences (Bajo, 2021). It also caused concerns over forensic accuracy, particularly as the PNP had introduced first embalming before autopsy as part of its COVID-19 protocols. To prevent contamination of

toxicology samples, forensic expert Dr. Raquel Fortun stressed that autopsies should always come before embalming (Marquez, 2021).

The Philippine criminal investigations have been revolutionized by forensic science which has helped in the resolution of crimes, public safety, and humanitarian efforts. Nevertheless, the field still lacks some funding, forensic infrastructure and training. These systemic challenges are tackled through similar modernization of forensic systems, policy reforms and professional training (Fruto, 2023). With the growth in forensic science, constant improvement in forensic policy, increase in funding of scientific crime investigation methods and imparting forensic studies is crucial to ensure justice is meted out with efficiency and evidence based.

1.2.3 Synthesis of the Related Literature. The CSI is a progressive process involving the adherence of protocols, need for workforce coordination, and use of forensic tools for evidence collected, preserved, and analyzed in a crime scene. Literature reviewed points out forensic investigation competencies, importance of inter-agency coordination, contribution of forensic resources and the problems forensics units are faced with. SOCO investigators capabilities include securing the crime scene, collecting and preserving physical evidence and reconstructing the crime scene.

Forensic training in crime scene and photographic processes, forensic biology, entomology, and toxicology improves the accuracy of an investigation project, as well as the professional standards and the considerations of human rights in forensic accuracy and natural law. As in the Philippine setting, the

SOCO investigators fall in line with the PNP Standard Operating Procedures for crime scene investigations for the sake of uniformity and for legal compliance.

A key aspect into seamless exchanging of information and expertise between SOCO investigators and the duty Investigator on Case (IOC) is effective coordination. Proper documentation and authentication of forensic evidence is necessary in court proceedings, given that such factors will determine the reliability and admissibility of findings. With the greater tendency to use digital evidence increasingly from IoT devices, skills to process digital evidence are also increasing and an organized coordination is fundamental needed for proper handling and presentation of digital evidence in legal cases. Furthermore, the enhancement in forensic technology like UAV, laser scanners and blockchain based evidence management plays a significant role in the documenting and securing the evidence. The forensic team can now easily pick up and warrant evidence but will be able to keep a secure chain of custody to make sure there is no tampering with the evidence or contamination.

Availability and adequacy of forensic resources form an important part in crime scene investigations. The success of the SOCO investigators depends on their access to modern forensic equipment, crime laboratories and logistical support. Advanced forensic tools, e.g. laser measurement device and blockchain based evidence tracking, are used with advanced forensic capabilities and to increase the security. On the other hand, in the Philippine setting, the regular performance of forensic investigations is hampered by lack of access to crime laboratories, long turnaround times on the processing of the evidence, and

logistical difficulties. The sooner forensics can be accomplished, the more likely they will be completed in an instantaneous, rather than in a hoard of days process. This affects whether the forensics are done in a timely and accurate fashion that leads to fair and just legal proceedings.

Forensic investigations also carry the performance evaluation of SOCO investigators as the crucial aspect. Individual Performance Evaluation Rating (IPER) is a standardized measure of investigator effectiveness, encompassing competence in the investigative aspects, efficient coordination and adherence to forensic protocols in handling of evidence items. It is therefore important to note that the quality of forensic investigation affects judicial outcome and therefore meticulous documentation, non-partiality and adherence to scientific methodology are indispensable.

Operational challenges faced by SOCO investigators include limited resources of forensic teams, changing technologies of crime scenes, and constraints in processing of evidence. With advancing digital forensics and IoT evidence becoming part of crime scene investigation, investigators face new challenges because of increased complexity of crime scene investigation. Forensic documentation, frequently in high profile cases, will determine outcomes in the law in such a way that accuracy, reliability, and procedural integrity are critical to the fair trial process.

However, with these challenges in place, intervention strategies should address increasing SOCO investigators capacities, resource accessibility to the forensics, as well as simplification the crime scene investigation process. Should

include implementing capacity building programs to build the competencies of investigators in especially emerging forensic fields. It will also invest in essential modern forensic tools such as automated evidence tracking systems and digital forensic training in order to boost forensic capabilities. It will also ensure that there is a more efficient investigative process through the establishment of standardized policies and protocols for improving coordination between the SOCO teams and duty investigators.

The research attempts to assess the competencies of SOCO investigators in the Eastern Police District Forensic Unit (EPDFU), evaluate the availability and adequacy of the resources in both capacities, evaluate the performance of investigators in terms of performance indicators which are administered in order to measure the capability of an investigator to examine a crime scene, and gauge its relationship with the competencies, and the availability of resources.

In addition, the study aims at uncovering the operational challenges encountered by SOCO investigations and designing a structured intervention program to enhance forensic investigations and enhancing inter-agency coordination. The research aims to narrow these gaps and contribute to improvement in forensic investigation practices so that they are reliable, insofar as crime scene analysis is concerned, and overall, of criminal justice integrity.

1.3 Related Studies

1.3.1 Foreign Studies. The preservation and protection of evidence collected by SOCO team at a crime scene is a composite process, which

involves both traditional and modern technological processes that will guarantee the evidence admissibility in a court of law.

Blockchain and cloud computing technologies have been integrated as a major improvement in safeguarding and storing crime scene evidence integrating data authenticity and safety in a framework that falls in line with Sustainable Development Goals (SDGs) (Verma et al., 2023). Blockchain technology protects digital evidence through its decentralized ledger system that maintains unalterable records which helps legal cases and forensic work (Johri, 2024). Digital forensic evidence management challenges find resolution through blockchain technology because it provides an unalterable system which maintains evidence transparency while tracking its origin during forensic investigation process (Chauhan et al., 2024).

The research by Sathyaprakasan (2021) presents an algorithm with framework for Blockchain Technology adoption in forensic evidence management digitalization to protect evidence integrity and security through Chain of Custody protocols. The study demonstrates how Hyperledger Fabric serves as a consortium blockchain framework to provide forensic evidence managers with an unalterable and transparent system which guarantees evidence authenticity and stops cases from dismissal because of chain of custody-related issues.

Cloud computing works together with forensic investigations by offering expandable data storage solutions and processing power that help manage extensive forensic data quantities (Pirjade & Dhotre, 2024). This is important

because it ensures the integrity of evidence especially trace DNA which can be contaminated. This is best achieved by ensuring that there is a clear chain of custody.

In particular, electronic chain of custody (eCOC) systems and automated DNA analysis technologies can greatly increase the such evidence (Salem, 2023). Improper collection and the storage of biological evidence can result in degradation and the poor-quality DNA profiles. Biological evidence should be managed at the crime scene based on preventing contamination and deterioration to maintain its value in legal proceedings (Kumar, et al., 2023). The adherence of the Federal District Civil Police to Law 13.964/2019 underscores the critical importance of a well-constituted chain of custody in preventing evidence invalidation (Nascimento et al., 2022).

The chain of custody is a procedural safeguard that documents the collection, transportation, storage, and analysis of evidence, thereby maintaining its reliability and credibility (Badiye et al., 2021). With the evolving role of Crime Scene Investigators (CSIs) to incorporate digital evidence, which is being regarded more and more as trace evidence, new training and governance standards are needed (Butler, 2024).

Standardized procedural protocols must be followed because inaccurate forensic analysis emerges from improper collection techniques and delayed analyses thus leading to possible erroneous judicial decisions. (Teotia et al., 2024). Finally, the use of digital proof collective model and integrated fusion data model that requires secure channel and data analytics in handling digital

evidence to protect it and perform deduplication in its management in the domain of forensic investigation (Senthil & Selvakumar, 2021). Combined, these approaches highlight how often technology and procedure both come into play in order to preserve and protect crime scene evidence.

Criminal cases benefit from successful coordination between Scene of Crime Officers (SOCO) and duty Investigator on Case (IOC) since this relationship enables the integration of forensic and investigative processes to achieve successful case investigation and closure. High-quality information and evidence collection depends on this essential partnership between Scene of Crime Officers and the duty Investigator on Case to conduct criminal investigations (Thallapureddy et al., 2024). Modern technology alongside clear communication and mutual trust enables police forces to exchange information in real-time and overcome national and international legal and geographical barriers according to Cucoreanu (2024).

Several elements like technological resources and training and standard operating procedures influence the availability and effectiveness of tools and resources used by EPD SOCO Investigators during crime scene management and documentation along with search procedures. Crime scene processing happens through a standardized procedure for evidence collection and analysis following SOPs which guarantee both thorough and uniform police investigations (Osman et al., 2021). Advanced technologies including both forensic DNA phenotyping and genetic genealogy help solve cases nowadays while their practical use faces constraints from resource limitations and specific crime

characteristics (Cerqueira 2024). Crime scene documentation remains essential to preserve evidence context by using methods that include photography and videography and sketching because both maintain scene integrity (Chong, 2023). Augmented reality (AR) technology offers solutions to enhance crime scene investigator training through flexible educational methods that develop both decision-making ability and motor skills according to Wilkins et al. (2024). The application of digital forensics along with forensic psychology would strengthen evidence collection and analysis but needs trained personnel and sufficient resources according to Anggraeny et al. (2024). The success of modern crime scene investigation tools depends on achieving proper training standards and resource availability and maintaining strict adherence to agreed-upon protocols according to Hibbitt & Shaw (2023).

1.3.2 Local Studies. The ways shown by forensic science in the Philippines have been one sensible part of the criminal justice system. Most of these studies and articles make more richly articulated understandings of the competencies needed by forensic practitioners, the problems faced by forensic practitioners, as well as ways to more completely provide the forensic practitioner with the best possible care possible. Overall, these works are useful for the study's objectives of examining the capabilities, operational impediments, and availability of resources of the forensic investigators.

Securing crime scene in the Philippines has a series of series of methodical steps which are very important in preserving the evidence of the scene. Thus, the procedure starts with the immediate securing of the area to

forestall contamination or amount of proof, something that is fundamental for every single forensic science-based wrongdoing scene examination made out of PNP (Quiape, 2023). In this case, a perimeter is set up and access to the scene is controlled by military or police personnel (who are skilled in security practices as well as the Incident Command System (ICS) in order to comply with safety procedures) (Quiape 2023). As forensic practice is mandatory in the investigation of PNP, ballistics, photography, dactyloscopy should be used that may also require the enhancement of some methods that are within challenge like dactyloscopy which needs much training and more resources (Quaipe, 2023).

The national security strategies under President Duterte's administration are characterized by a strong law enforcement response to crime (Utama, 2021) that extends to the focus on the war on drugs. This has been controversial, with significant human rights and marginal community treatment implications (Utama, 2021). However, with this, the integration of forensic science and observance of international security standards are considered imperative in uplifting the felon investigation effectiveness of the crime scene investigations and dispensing of justice in the Philippines (Fruto, 2023).

The Philippine National Police Crime Laboratory's advanced forensic services (DNA and ballistics identification) were specifically examined in detail by solutions to shortcomings in manpower and facilities are also accentuated in the study. The study aims to address the same issue of knowing the resources that limit the forensic unit and their influence on the success of the units. All of these

are surmountable and will help to make a forensic investigation even more reliable and efficient.

Philippines have modern forensic equipment, but it is available and accessible unevenly and there are also problems with the actual implementation of forensic equipment in different forensic branches. Adequate laboratory facilities for drug testing have been adopted by the country with the number of screening laboratories in the country standing at over 1,000 and limited numbers of institutions with confirmatory testing facilities which uses sophisticated methods, such as Gas Chromatography - Mass Spectrometry (GC-MS), and Liquid Chromatography-Mass Spectrometry (LC-MS) (Dioquino & Gerona, 2022). Despite efforts to implement local sexual assault investigation kits (Rodriguez et al., 2021), Philippines has developed local DNA forensics community with kits for collection and preservation of biological samples for DNA testing, poor government support and high costs prevent their routine use in the investigations. DNA technology in drug investigations is also being looked into to facilitate later DNA analysis, and researches are making researches into better methods of storing urine samples. Despite these great advances, with essential diagnostics still a challenge, especially in rural, where there are logistical issues and poor infrastructure (Alberto et al., 2022). However, the country does not have an adequate and science-based medico legal death investigation system to address such cases and render justice (Ungria et al., 2022). In general, even if the Philippines now possesses the modern forensic equipment and

methodologies, the its application and realization is not yet complete because of financial, infrastructural, or systemic limitations.

Many factors are contributing to the limitation of access to crime laboratories in the Philippines: underdeveloped infrastructure, sparse distribution, and limited finances. The country has more than 1000 drug screening laboratories, only 7 of which have capabilities to perform confirmatory testing using technologies like gas chromatography mass spectrometry (GC-MS) or liquid chromatography mass spectrometry (LC-MS) (Dioquino & Gerona, 2022).

Further, in this limited capacity demonstrates broader issues in the landscape of diagnostic and forensic, in which essential diagnostics are rarely accessible to people in both the rural and remote areas. The diagnostic facility resources are unevenly distributed and can be concentrated in urban centers, for example, Luzon, while leaving from Visayas and Mindanao, from few diagnostic units per capita (Alberto et al., 2022).

Additionally, the existence of specialized forensic tool such as the local sexual assault investigation kit necessitates the improvement of systems in terms of organizing and processing forensic evidence. Although the DNA technology was available since 1997, the high costs and the absence of a national system of sample collection and performance prevent its routine application in sexual assault cases (Ungria et al., 2022) (Rodriguez et al., 2021).

The case presented by Calaca et al. (2022) shows how DNA testing provides essential support for prosecutors to obtain convictions when sexual assault investigation kits are unavailable and samples are collected with local

medical materials. The paper established itself as a crucial Philippine case that led to the creation of the 2007 Philippine Rule on DNA Evidence which established legal DNA evidence procedures for criminal investigations and improved the judicial process in sexual assault cases. Research conducted by Victoria (2024) demonstrated the success of mitochondrial DNA (mtDNA) analysis of teeth in identifying every disaster victim through this method. The dental sample analysis results matched data obtained from family members which validated the use of dental materials in victim identification for forensic investigations after natural disasters.

The forensic science practices in the Philippines demonstrate multiple applications that respond to the specific legal and technological requirements of the country. The legal system depends heavily on forensic linguistics because both language selection and policy requirements become essential during police investigations and courtroom trials. The social aspects of legal language usage in forensic linguistics have been studied to develop future research pathways in Philippine forensic linguistics according to Rañosa-Madrunio and Martin (2023).

Digital forensics stands as a critical field because it fights against increasing cybercriminal activities including online scams and illegal content viewing on audiovisual platforms. The implementation of digital forensics in the Philippines depends heavily on building essential infrastructure to match current and expected cyber threats in the future (Blancaflor et al., 2023 and Blancaflor et al., 2024). The application of forensic DNA testing remains crucial in sexual

assault investigations despite practical and systematic obstacles in handling evidence across the country (Rodriguez et al., 2021).

Law enforcement received important drug trafficking intelligence through forensic profiling of methamphetamine found in Chinese teabags which showed a new drug trafficking trend linked to the Golden Triangle Drug Syndicate according to Salvador (2022). A systematic medico-legal death investigation system based on science remains essential because it helps resolve extrajudicial killing cases and other death cases while providing justice and preventing false convictions (Jose & Ungria, 2021). These studies demonstrate that forensic science in the Philippines exists in multiple dimensions because they show the existing applications and the necessary development and support requirements.

The study conducted by Obenza, et al. (2025) through critical discourse analysis uncovers how standards and guidelines of conversation get violated in Philippine senate investigations about People's Initiative. The research investigated the maxims violations which occur within Grice's framework of cooperative principle. The investigation employs critical discourse analysis as part of forensic linguistics through two 4-hour senate probes about People's Initiative while analyzing spoken legal discourse with corpus linguistics. The analysis showed that among the four maxims violations in the collected corpora quality maxims were violated 23% of the time and quantity maxims 23% of the time while relevance and manner maxims were violated 34% and 20% respectively. The research outcomes demonstrate the intricate nature of linguistic

patterns within the studied data which helps explain the discourse related to People's Initiative in the Philippines.

Rey (2023) demonstrated in his paper that criminal identification procedures require extended durations because of geographical obstacles. The Mobile Automated Fingerprint Identification System (MAFIS) was developed to resolve such issues. MABIS represents the Mobile Automated Biometric Identification System which results from integrating face recognition into MAFIS. Through MABIS law enforcers can identify law offenders by searching criminal records with both face recognition and fingerprint identification. Relevant criminal records obtained from the database will be used for investigation purposes. The system will create a new record when it fails to locate any existing information. The paper aims to merge an open-source facial recognition technology into current MAFIS infrastructure.

Lastly, the paper of Joshi et al. (2023) demonstrates that introducing the SmartVA Auto-Analyse tool established standardized death certification protocols for Philippine out-of-facility passings which enhanced cause of death information quality. Standardization procedures help Municipal Health Officers achieve accurate death diagnoses and certifications while decreasing cases of ill-defined deaths and improving policy-related health statistics. The pilot study proved that verbal autopsy decision support tools work effectively which makes them suitable for expansion to other low and middle-income nations. The structured interview received positive feedback from MHOs demonstrating its potential to become a

workflow-compatible solution which strengthens health information systems and generates better public health results.

1.3.3 Synthesis of the Related Studies. Traditional and modern technological approaches that take place in preserving and protecting the Scene of Crime Officers (SOCO) collected evidence to ensure the integrity and admissibility of evidence in court. Blockchain and Cloud computing technologies integration has brought on a revolution in evidence management system by streamlining data authenticity and gearing towards the achievement of Sustainable Development Goals (SDGs). Electronic systems maintain clear chain of custody, and anti-contamination measures ensure the reliability of trace evidence, with DNA being the most reliable evidence there. Biological and electronic evidence were properly handled utilizing strict protocols for handling steps (biological and electronic) and strict adherence to Standard Operating Procedures. These advancements have compulsory implications for SOCO investigators to adjust to updated issues including taking care of advanced computerized proof and coordinating new innovations though keeping extreme formal procedures.

It is equally critical that there be effective coordination between SOCO investigators and the duty Investigator on Case (IOC). Complex investigation of organized crime, illegal drugs, and/or economic offences require collaborative approaches that are based on exclusive shared goals and methods. Enhanced communication networks and adherence to procedural structured procedures allow for the cohesive way that investigative teams operate even given high

stakes or emergency scenarios. This emphasizes the need for the clarity of communication, shared objective, and adaptive mechanisms to guarantee the success of the crime scene investigations.

Forensic science in the Philippine context serves to make possible the criminal justice system, but has not easily achieved such purpose because of uneven distribution of resources, meager infrastructure and insufficient funding. Modern forensic equipment and methodologies including DNA and drug testing systems are available but are only accessible by high costs and a lack of logistics mostly in rural areas. Deficiencies in manpower and facility are emphasized in studies which require accreditation, quality assurance and improvements in training. Examples of initiatives that reduce challenges into interdisciplinary initiatives include joint projects with international forensic experts that highlight opportunities for collaboration on technical and operational problems.

Collectively, these insights motivate the study's objectives to assess SOCO investigators competencies, to assess resource adequacy, to examine the effectiveness of coordination mechanisms, and to determine operational challenges. Therefore, the study proposes Intervention program for these gaps of the gaps to improve the capabilities of SOCO Investigators, Resources of forensic and to assure the reliability and integrity of crime scene investigation. A contribution to the development of forensic practices is the aim of this approach, which is meant, in turn, to contribute to justice and to the rule of law.

1.4 Theoretical Framework

This research was built on the competency-based theory, resource-based view (RBV), and system theory, all of which form a strong theoretical framework that enables assessment of the competencies of SOCO investigators, the resources available to them, and operating systems. These theories were related and provided an integrated framework for conceptualizing and designing the study's aims and objectives.

The competency-based theory was inspired by the work of David C. McClelland (1973), who stated that the only way to predict people's performance is by measuring their competencies, which are reliable skills, knowledge, and personal characteristics. McClelland put forward his theory that competencies, or foci of relevance, are more valid predictors of success as compared to IQs and credential letter ratings. The theory is based on individual knowledge, skills, and abilities towards improving organizational performance. This theory supports the study as it aims at understanding the competencies of SOCO investigators, especially in technical expertise, evidence handling, and SOCO adherence to the law and regulations. Through assessing these competencies, the study is relevant to this theory to determine which of the competencies need training and professional development.

The Resource-Based View is also known as the Penrose Theorem, attributed to Edith Penrose in the Theory of the Growth of the Firm (1959). Further development of the concept was done by Jay Barney (1991). Resources are also a source of competitive advantage if they can be considered valuable,

rare, inimitable, and non-substitutable (VRIN framework). Experience with RBV influences the study of the availability and accessibility of resources and tools for SOCO investigators. By evaluating the performance enhancement of resource inputs like forensic equipment and logistical support, the study complies with Barney's stance on how organizational resources can contribute to optimal efficiency and effectiveness.

Systems theory was first articulated by Ludwig von Bertalanffy (1950), a biologist who proposed that systems are composed of interrelated and interdependent parts that function as a whole. Based on this theory, the study of operational challenges and stakeholder perception can be supported, and the interactions of human resources, tools, processes, and external factors are examined. Systems theory highlights integration in the structure and operation of the EPD Forensic Unit and with other organizations as a core focus, something that is in line with the purpose of the research to enhance systems thinking.

This integration of these theories allows the competencies of SOCO investigators and the system factors at play in their performance to be evaluated holistically. The evaluation of the individual capabilities is based on competency-based theory and, in part, on the resource-based view, which is devoted mainly to organizational resources. Furthermore, systems theory is based on the interaction of competencies, available resources, and operating conditions. Together, these theories give a sufficient theoretical framework for mapping out the objectives of the study and guarantee that both the results and the recommendations will be meaningful and useful.

Philosophically speaking, the Competency-Based Theory (CBT), Resource-Based View (RBV), and Systems Theory converge in their pursuit of optimization, namely, by the human resources' enhancement, by leveraging organizational resources, and by improving systemic functionality. These theories parallel the pragmatist stance, focusing on operational deliverables. The three work together in providing a comprehensive framework for analyzing challenges that the Eastern Police District (EPD) Forensic Unit finds itself facing, and these challenges range from individual competencies to resource availability and systemic inefficiencies.

This study uses CBT to direct competency assessment of the SOCO investigators to determine the skill and knowledge gaps. RBV serves as the basis for resource evaluation, where emphasis is on the adequacy and strategic value of forensic tools, logistical support, and laboratory access. Then systems theory will be applied to operational analysis to identify bottlenecks and propose improvements. These theories are integrated to make it holistic and practical for the performance enhancement of the EPD Forensic Unit.

1.5 Conceptual Framework

The conceptual framework adopted in this study was the Input-Process-Output (IPO) model of the study components flow. This model contributes to the clarity of structures linking the input variables, analysis mechanisms, and the expected results so as to form a systematic way of evaluating SOCO investigators' competencies at the EPD Forensic Unit.

The input part of the framework comprises the key predictors of the performance of SOCO investigators. In response to this study, the inputs consist of competence that embraces technical working knowledge in the use of forensic tools and methods, skill in the collection and preservation of evidence in practice, and adherence to policy and administrative compliance and legal and regulatory compliance. Also, the adequacy and accessibility of resource requirements, which include modern forensic equipment, a crime laboratory, and evidence processing logistical support, make up part of the inputs. There are also some operational challenges, such as caseload and workload management, the impact of fatigue on investigative processes, and coordination among the unit and external agencies, thereby influencing investigative context and an indication of overall performance.

The process stage involves the evaluation of the competency of SOCO investigators, the adequacy and accessibility of resources, operational challenges, and analyzing the relationship of these variables with the SOCO investigators' IPER.

The output refers to the outcomes of the given work and may contain the work's prompt conclusion as well as the long-term recommendations. The principal outcome is an assessment of SOCO investigators with reference to crime scene investigation performance effectiveness. Alongside that, it provides details of the efficiency of crime scene operations carried out by investigators, the quality and admissibility of evidence collected, and the level of community acceptance of forensic activities.

Moreover, regarding the output, the study seeks to present a targeted intervention program for improving the competencies, resources, and operational efficiency of SOCO investigators in the EPD Forensic Unit.

Collectively, these recommendations are anticipated to improve the performance of the overall forensic practices of the EPD Forensic Unit and may prove helpful to other forensic units.

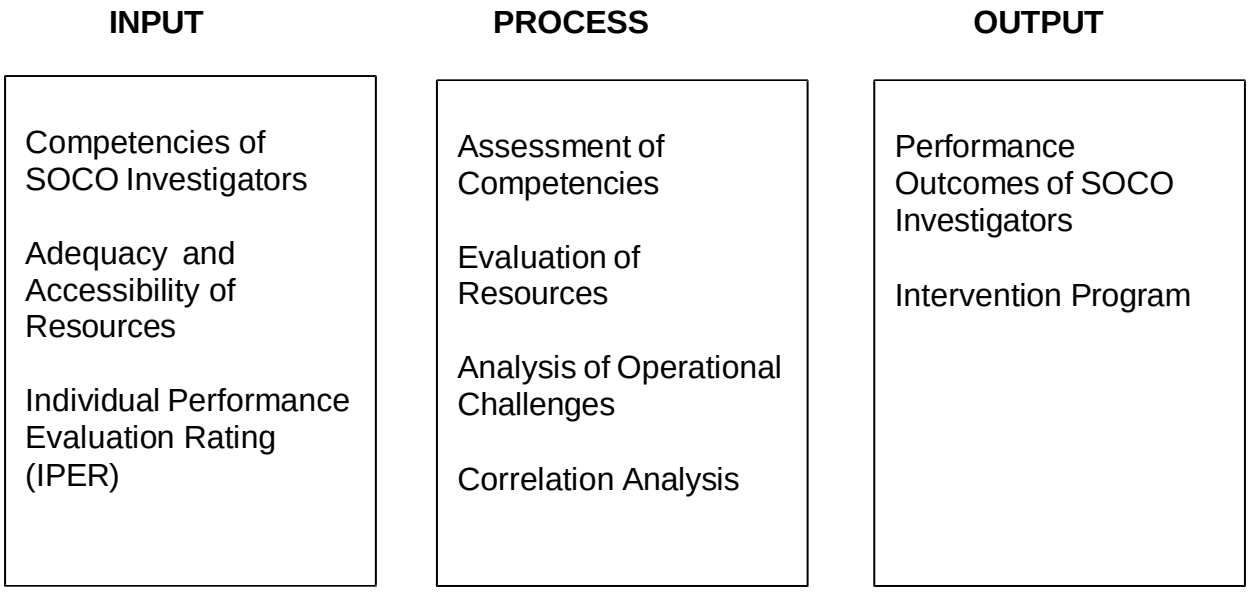

Figure 1. *Conceptual Paradigm of the Study*

1.6 Significance of the Study

This study documents some important contributions to the stakeholders involved in crime scene investigations, law enforcement, and the criminal justice system. By evaluating the competencies of Scene of the Crime Operatives (SOCO) investigators and addressing gaps in resources and operational challenges, the findings benefited the following stakeholders:

For SOCO Investigators at the EPD Forensic Unit. By identifying their strengths in technical knowledge, practical skills, and legal and procedural compliance, the outcomes of the program will serve to develop training programs designed to strengthen their competencies, improve their evidence-handling performance, and maximize their skill set in their investigation of crime scenes. In addition, resource allocation and access to modern forensic tool improvements will optimize their process and help improve job satisfaction and performance.

For supervisors or key personnel in the EPD Forensic Unit. This will provide clearer insight into operational challenges faced by SOCO investigators, and they will better understand their teams' challenges, such as workload management, resource constraints, and coordination. This study will offer data-driven insights on how resources should be allocated, what decisions to make about training programs, and how to manage the internal as well as the external operations. These improvements will enhance the performance of the units and enable supervisors to deal with the causes of inefficiency and make investigative processes much smoother.

For Community Members and Stakeholders. The study will indirectly benefit the community members and stakeholders through increased efficiency, reliability, and timeliness in the investigation of crime scenes from the EPD Forensic Unit. It will help in promoting trust and confidence in the law enforcement agencies, as enhanced forensic practices will be followed and the criminal cases will be resolved faster. The study attempts to improve community perceptions of the police as a whole and improve the relationship between police

and the community that they serve by addressing public concerns of delays or inefficiencies.

For the Philippine National Police (PNP). The study in turn will benefit the PNP, as the study will help towards the broader objective of modernizing the practices of forensics in its SOCO units. Through the recommendations, the PNP can use gaps that are identified in training, resources, and operational protocols to standardize procedures and improve the effectiveness of the total forensic services provided by them. Results of the study can also be used as a benchmark in evaluating the work of other forensic units both in the country and internationally and inform future policies and initiatives leading to the improvement of all PNP forensic units through capacity building.

For the policymakers and government agencies. The data-driven insights from the study will offer the opportunity to create policies or programs to close resource and training gaps in the forensic field based on the data provided. And informed by recommendations for enhanced infrastructure, such as better-equipped crime laboratories and logistical support, budgetary decisions and administrative reforms can be made. The findings of the study will help the government to achieve its aim of keeping high standards in the justice system and maintaining the integrity of evidence collected during investigations.

For the Researchers and Academics. One of the high potentials of the study is that the researchers and academics will benefit from the study, as it contributes to the already existing body of knowledge on forensic science and crime scene investigation in the Philippine context. By extending the capabilities

to additional communities, this research can function as a reference for future studies and provide new questions for possible new inquiries into similar topics in that scenario, such as community perception of law enforcement and the mix of technology in the criminal investigations. This study addresses gaps in localized forensic science research to add to academic discourse and to build on it.

For the Judicial System and Legal Practitioners. More reliable and admissible forensic evidence will result as a consequence of enhanced evidence collection and handling practices. This will significantly minimize the number of cases that are dismissed on procedural grounds because such actions will enhance the perceived legitimacy of the judicial process. The recommendations will be of use to legal practitioners to improve the quality of the forensic evidence delivered and provide superior case outcomes whilst assisting in the delivery of justice.

1.7 Definition of Terms

The following terms were defined operationally and conceptually:

Accessibility of Crime Laboratories. This refers to the frequency of facilities capable of analyzing and processing forensic evidence for a case.

Competencies. These are knowledge, skills, and abilities needed by SOCO investigators to successfully accomplish their particular functions, responsibilities, and procedures using crime scene investigation, including coordination and evidence preservation.

Evidence Processing Logistical Support. There is a reference to the resources, infrastructure, and systems used for the transportation, storage, and processing of forensic evidence.

Individual Performance Evaluation Rating (IPER). It refers to the standardized measure used to evaluate and test the ability and capacity of SOCO investigators in doing their functions.

Intervention Program. It means a set of planned actions or initiatives intended to address the gaps found, increase the availability of competency resources, and overcome operational challenges in forensic investigation.

Modern Forensic Equipment. It is defined as tools and devices that have advanced technological capability suitable for use to improve the accuracy, efficiency, and reliability of a forensic investigation.

Operational Challenges. This refers to the resource limitations and the inefficiencies of a procedure that SOCO investigators are faced with during their forensic investigation.

Preservation and Protection of Evidence. Meaning of the ways and means of ensuring the integrity, authenticity, and admissibility of evidence obtained from a crime scene.

Proper Coordination. The process refers to the collaborative engagement between SOCO investigators and the IOC to enable seamless exchange of information, resources, and expertise to accomplish a thorough investigation and close working solutions.

Specific Functions, Responsibilities, and Procedures. Standard roles and duties that SOCO investigators follow, like securing the crime scene, thorough documentation of the place, and physical evidence collection done under guidelines.

1.8 Statement of the Problem

This study sought to evaluate SOCO investigators' competencies at the Eastern Police District Forensic Unit.

Specifically, it aims to answer the following research questions:

1. What is the level of competency of SOCO investigators in the Eastern Police District Forensic Unit (EPDFU) in terms of specific crime scene processing procedures?

1.1 Crime scene approach;

1.2 Preliminary crime survey;

1.3 Physical evidence assessment;

1.4 Narrative description of the scene;

1.5 Crime scene documentation;

1.6 Crime scene search;

1.7 Physical evidence recording and collection;

1.8 Final crime scene survey;

1.9 Post-crime scene processing; and

1.10 Case conference.

2. What is the level of accessibility and adequacy of resources and tools available to EPD SOCO Investigators in terms of:

2.1 Crime Scene Processing Specific Procedures

2.2 Crime Scene Documentation Procedure

2.3. Crime Scene Search Procedure

2.4. Evidence Collection Tools and Equipment

3. What is the performance of the SOCO Investigators as reflected in their Individual Performance Evaluation Rating (IPER)?

4. Is there a significant relationship between competencies of EPD SOCO investigators, accessibility and adequacy of available resources and tools, and their performance?

5. What are the operational challenges faced by SOCO investigators in the EPD?

6. Based on the results, what intervention program may be proposed?

1.9 Hypothesis

This hypothesis was tested: There is no significant relationship between competencies of EPD SOCO investigators, accessibility and adequacy of available resources and tools, and their performance.

Chapter 2
Methodology

This chapter presents the research design, method, study population, locale, scope and limitations, data-gathering instruments and procedures, data treatment, ethical considerations, and dissemination of findings.

2.1 Research Design

The method adopted for this study is concurrent mixed-method research that combines both quantitative and qualitative methods to respond to the research objectives. The quantitative component measures the competencies of SOCO investigators, the adequacy and availability of resources, and the investigator's IPER for the past year.

Concurrently, the qualitative part examines operational challenges and points out possible ways for intervention programs to cope with such types of challenges. Therefore, semi-structured interviews will be conducted, and a thematic analysis will be performed to pinpoint its patterns and insights. By collecting and analyzing quantitative and qualitative data simultaneously, real-time triangulation will give a holistic view of the competencies, challenges, and resources that SOCO investigators have, and from that, evidence-based intervention programs can be recommended.

2.2 Research Method

A concurrent mixed-method approach will be used to gain a thorough understanding of the competencies, resource adequacy and accessibility, operational challenges, and performance of SOCO investigators.

Using the study instruments, the investigators will be measuring specific indicators that pertain to the investigators' functions and coordination, as well as evidence preservation with the use of forensic tools and logistical support.

The qualitative method will complement the quantitative data by posing operational challenges in which SOCO investigators are confronted via semi-structured interviews. It will thus yield more profound insights into prevailing issues and context factors impacting their performance, which may not be quantifiable.

By conducting both types of data collection and analysis concurrently, this will ensure that the results from one analysis can shape and add to the lessons learned from other means. The integration of competencies and challenges for SOCO investigators allows for a holistic assessment and establishes a solid foundation, facilitating the development of a specific intervention program.

2.3 Population of the Study

The primary objective of this study is to assess the competencies of the SOCO investigators in the Forensic Unit of the Eastern Police District (EPD), gauge the adequacy and accessibility of the resources, analyze their performance, and offer specific intervention programs that could address the challenges encountered by them. In order to achieve these objectives, respondents have been identified such that insights can be offered from multiple perspectives. SOCO investigators and supervisors or key personnel from the cities under the EPD—San Juan, Mandaluyong, Pasig, and Marikina City—form the respondents. These groups will bring a well-rounded understanding of the

competencies, resources, performance, and operational challenges of the forensic operations of the EPD Forensic Unit.

For this study, I used total enumeration sampling, which simply means I included all SOCO investigators and supervisors assigned to the Eastern Police District Forensic Unit (EPDFU). This way, I could get a full picture of the situation without leaving out any voices from selective sampling. The main goal was to truly understand their level of competency and the actual conditions they face.

I used both structured questionnaires and semi-structured interviews to gather data. The questionnaires helped capture quantifiable aspects like skill levels, while the interviews allowed me to listen to their stories, challenges, and suggestions in their own words.

To measure how competent the investigators felt and were perceived to be, I used a five-point Likert scale. This is a widely accepted tool in research to measure opinions, attitudes, and levels of expertise.

5 – Expert: They can do the task confidently and even train others.

4 – Proficient: They can handle the task well with little to no help.

3 – Competent: They manage with occasional guidance.

2 – Developing: They still need support to perform the task.

1 – Novice: They are new and not yet confident in the task.

This scale was chosen because it provides a clear, straightforward way for respondents to rate their skills. It also helps summarize the general level of competence across the team while still respecting individual differences.

Table 1.

Sample Size Distribution of Respondents by Type

Type of Respondents	Sample Size
SOCO Investigators	61
Supervisors	15
Total	76

2.4 Locale of the Study

The study was undertaken in the EPD Forensic Unit head office in Mandaluyong City, with the study sample being officers assigned to crime scenes in EPD jurisdiction that includes crime scenes from the cities of San Juan, Mandaluyong, Pasig, and Marikina. These cities offered a logical mix of urban environments with different socio-economic characteristics and crime rates that allowed assessment of competencies and organizational conditions of work for SOCO investigators.

The EPD is a police district under the National Capital Region Police Office of the Philippine National Police. It acts as the main police force of the Mandaluyong, Marikina, Pasig, and San Juan City Police Departments. The office of the EPD was the central command in the supervision and direction of law enforcement elsewhere. The EPD was formed from the merging of the police departments of Mandaluyong, Marikina, Pasig, and San Juan. This integration process was effected in 1975 by Presidential Decree No. 765. The EPD has since then developed into one of the important districts for policing in Metro

Manila and handling crime scenes in one of the most congested areas in the country.

It is hoped that this study will derive results on areas of competency deficiencies, resources available, and organizational effectiveness. These areas are vital for the study, as San Juan, Mandaluyong, Pasig, and Marikina offer different population density rates, different crime rates, and availability of logistics. The findings of the study were, thus, designed to encourage enhancement of forensic measures and subsequently the functioning of the EPD force operations.

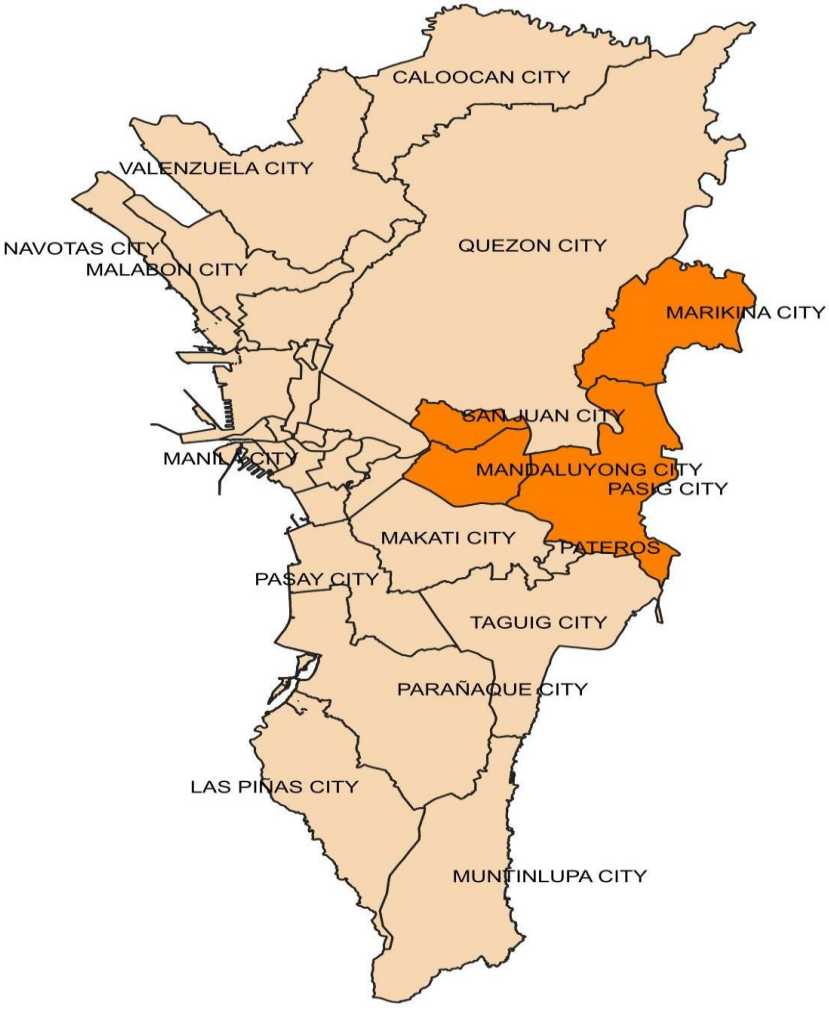

Figure 2. *Map of the National Capital Region (NCR), Philippines*

2.5 Scope and Limitation of the Study

This focused on evaluating competencies, accessibility of the resources, adequacy of the tools, and the operational challenges for the SOCO investigators in the Eastern Police District Forensic Unit of the Police Office. In addition to this, the performance of SOCO investigators was studied according to their Individual Performance Evaluation Ratings (IPER) and their supervisors' or key personnel's perspective. The purpose of this comprehensive evaluation was to find gaps and make an evidence-based intervention program to improve the efficiency of the forensic operations of EPD.

It places geographic limits only on the four cities under the EPD jurisdiction, namely San Juan, Mandaluyong, Pasig, and Marikina City. SOCO investigators are the primary respondents because their technical expertise and ‘real-time’ response experiences are vital to estimating the skill sets, practical abilities, and resource constraints of the potential responders. In addition, supervisors or key personnel within the forensic unit are also included to understand their oversight roles in influencing procedural compliance and availability of resources, as well as the organizational issues.

The study analyzed in depth the competencies and their operational challenges and was limited by its reliance on only one point of view of the respondents within EPD. The results may not be applicable outside of other police districts or forensic units confronted with different working environments and problems. In addition, the sample size was composed of 61 SOCO

investigators and 15 supervisors, which could reduce the statistical power of quantitative results.

Another limitation was being focused on current practice and resources, which do not take into account the rapid development of forensic technology and techniques that may affect future operations.

2.6 Data Gathering Tool/s

This study employed both structured questionnaires and interview guides as the means of data collection. The structured questionnaire was developed and completed by SOCO investigators and their supervisors.

The content of the research tools was extracted from the different research questions, forensic science manuals, procedural guidelines for SOCO investigators, and previous literature on competencies of forensic services, adequacy of resources, and operational challenges.

The Eastern Police District Forensic Unit (EPDFU) utilized the Standard Operating Procedure (SOP) on Conduct of Crime Scene Investigation and determines the competence level of Scene of Crime Operation (SOCO). The list of items includes essential duties and functional elements and protocol requirements from the SOP, which correspond to established forensic examination standards.

The inter-item reliability of the questionnaire was estimated based on Cronbach's alpha. This sort of reliability test helped to ascertain that the questions contained in the current tool are stable indicators of the intended variables.

Following the recommendations of many authors, reliability testing was applied only to the questionnaires concerning the SOCO investigators and supervisors. The tools went through content validation, where information is assessed to determine if the questions capture the constructs under study and the objectives of the study.

Experts were consulted in order to get feedback and improve the tools. The tools were validated by three professionals with the relevant educational background to the topic. The validators included (1) one from academe with an ability in research methods and data collection instruments, and (2) two from a police operatives or management persons who have background in police operations and law enforcement. The validators reviewed the contents of the draft tools and look for clarity and relevance to research objectives. The feedback received was then be incorporated on the appropriateness and reliability of the tools that was used in the study.

2.7 Data Gathering Procedure

The implementation of the data collecting process for this research study will comprise a systematized approach that will enable the collection of reliable and relevant information in regard to the set goals of the research. The first of them was acquiring formal permits and clearances from the EPD Forensic Unit and other overseeing bodies as may be required. Letters of intent or letters of request for participation in the study were written alongside details of the study's objectives, methodology, and the associated ethics. Once permissions are obtained, the research tools in question were subjected to face validation to

ensure the clarity, relevance, and resonance of the study tools. Subsequently, a pilot study involving a limited number of participants will be carried out to adjust the instruments to their practical applicability.

The actual data collection process is also going to be time-bound to an extent. The frame of the study covered nearly a month, and the data were collected between the second and fourth weeks of the selected duration. At this time, a questionnaire was administered to all SOCO Investigators and Supervisors in the EPD Forensic Unit. These were self-administered questionnaires, though the researcher was available to clarify the questions and answer any questions that may arise to enhance completion of the questionnaires in the appropriate format.

2.8 Treatment of the Data

The data in this study were analyzed using quantitative as well as qualitative methods, such that the objectives of the research are addressed in a comprehensive manner. Analysis of the quantitative data gathered through structured questionnaires and performance evaluation records was summarized by applying descriptive analysis. The level of competencies among SOCO investigators, particularly concerning their function in the coordination of work and evidence preservation, were gauged by computation of frequencies, median, and standard deviations. These were also used to evaluate the adequacy and accessibility of forensic resources and modern equipment and other resources in laboratory and logistical support.

The study also examined the relationship between the competencies of SOCO investigators, the adequacy of resources, and their performance as measured in Individual Performance Evaluation Ratings (IPER). By using these factors, analysis was made to provide insights on how factors such as the investigator's competencies and resource availability and adequacy relate to the overall performance of SOCO investigators as measured by their IPER.

Qualitative analysis was done for the qualitative data collected through semi-structured interviews. First, the transcription of the interview responses occurred, and seconded, the repetitive themes analyzing the operational challenges were identified and coded. Then, thematic interpretation was conducted to explore underlying agendas and potential improvement areas based on the qualitative insights at a greater depth.

2.9 Ethical Considerations

There are several important concerns with regard to ethics in this study, especially because the participants are SOCO investigators and supervisors in the EPD Forensic Unit. To ensure the voluntary participation of all the respondents, an informed consent form was used. This form included information regarding the purpose, methods, and possible risks of the research as well as its advantages. It stressed the fact that involvement is done voluntarily and that the subject has the right to pull out from the study at whatever time without experiencing any consequences. In the case of the SOCO investigators and supervisors, the consent form preceded the structured questionnaires.

The study was not in any way interfere with or counteract the decisions of those who refuse to participate in the study. Respondents were used in the study in the following ways, but none of the respondents were forced or compelled to join the study. Any individual, whether a SOCO investigator or the supervisor, who does not wish to participate, was not considered for data collection. In the same way, if a participant starts to give his or her consent but changes his/her mind later, this decision is honored, and no data from such a participant are used. This helps to guarantee the meeting of such participation as remaining entirely voluntary and ethical.

When collecting the data, both the structured questionnaires and semi-structured interview guides were used. The identity of all anonymous respondents giving replies and responses remained concealed and not disclosed. For every SOCO investigator and supervisor, no information identifying them or anyone close to them will be collected; all responses were coded. Participants were told that, unlike earlier, they can also skip any question if they are uncomfortable responding, which continue to protect participants' well-being.

These ethical considerations are aimed at preserving the research in its deserved ethical state while protecting the rights and welfare of all the respondents concerning the Eastern Police District.

2.10 Dissemination of the Research Outcome

The results of this study are going to be shared in several ways to make better dissemination to the relevant stakeholders and potentially contribute to the existing knowledge in the forensic sciences and the policing fraternity. A report

containing the research procedures, results, and recommendations shall be drafted and submitted to the EPD Forensic Unit and other stakeholders of the PNP in the Philippines. Also, the essential points and practical suggestions of the research will be presented in a separate document and conveyed to the recipients, such as EPD leadership, supervisors, and other stakeholders, in the form of a letter of the results obtained.

In order to generalize the results of the study, the presentation of the results will be made at professional conferences, seminars, or conventions held regarding forensic science, police, or criminal justice. These presentations will inform the findings of the study on SOCO investigators' competencies, resource sufficiency, operation enablers and impediments, and stakeholder perception for professionals and academics in these fields. In addition, the study will undergo the process of peer review to meet the goal set for the project of sharing the findings of the study, as well as the recommendations and outcomes achieved, with several specialists in the field, including academicians, legislators, and practitioners of forensic science and law enforcement occupations.

The main users of this dissemination are SOCO investigators as well as supervisors from the EPD Forensic Unit, who will get ideas on how to improve in certain aspects and how to make the unit better in its operations. The PNP, as an institution, will benefit from 'evidence-informed' recommendations for policy and resource input. The indirect stakeholders of the community may benefit from enhanced practices in crime scene investigation and increased confidence in the legal process due to the study's practice. Such dissemination efforts seek to

increase the practical application of the research in the improvement of forensic practices and hence increase public safety.

Chapter 3
Results and Discussion

This chapter presents the discussion and analysis of the data gathered from the respondents.

3.1 What is the level of competency of SOCO investigators in the Eastern Police District Forensic Unit (EPDFU) in terms of specific crime scene processing procedures?

This section presents the level of competency of SOCO investigators in the Eastern Police District Forensic Unit (EPDFU) in terms of specific crime scene processing procedures: Crime scene approach, Preliminary crime survey, Physical evidence assessment, Narrative description of the scene, Crime scene documentation, Crime scene search, physical evidence recording and collection, Final crime scene survey, post-crime scene processing, and Case conference.

3.1.1 Crime scene approach

Table 2 presents the level of competency of SOCO Investigators in the Eastern Police District Forensic Unit (EPDFU) in terms of crime scene approach. When looking at the results of the table, an overall of 4.68 for supervisors and 5.00 for SOCO investigators indicates that both types of respondents see that the level of competency of SOCO investigators of the EPDFU is at an expert level. The highest of these from the perspective of supervisors are that through correct utilization of Personal Protective Equipment (PPE), the Investigator can successfully perform a comprehensive search and collection task (4.69); that the Investigator can systematically identify and properly document discarded evidence during crime scene processing (4.68); and that the Investigator can

independently evaluate team safety, analyze adverse ground conditions, and assess weather factors before entering the crime scene (4.66).

Table 2.

Level of Competency of SOCO Investigators in the Eastern Police District Forensic Unit (EPDFU) in terms of Crime Scene Approach

A. Crime Scene Approach	**Supervisor**		**SOCO Investigator**	
	Med	**Int**	**Med**	**Int**
1. I/The Investigator am/is able to independently evaluate team safety, analyze adverse ground conditions, and assess weather factors before entering the crime scene.	4.66	E	5.00	E
2. I/The Investigator am/is able to properly establish the staging area and coordinate effectively with the Investigator-on-Case (IOC) upon arrival at the crime scene.	4.65	E	5.00	E
3. Through photography or videography, I/The Investigator has the capability of making instant records and documentation of crime scene conditions.	4.65	E	4.93	E
4. Through correct utilization of Personal Protective Equipment (PPE) I/The Investigator can successfully perform a comprehensive search and collection task.	4.69	E	4.93	E
5. I/The Investigator am/is able to systematically identify and properly document discarded evidence during crime scene processing.	4.68	E	5.00	E
Overall	**4.68**	**E**	**5.00**	**E**

Legend: N – Novice, D – Developing, C – Competent, P – Proficient, E – Expert.

Median (Med*):* Represents the middle value of the ratings given by respondents (Supervisor and investigator).

Interpretation (Int): Shows the qualitative assessment of the median value, in this case, “E” which stands for **Expert**.

The highest of these from the perspective of SOCO investigators are that the investigator can independently evaluate team safety, analyze adverse ground conditions, and assess weather factors before entering the crime scene (5.00); that the investigator can properly establish the staging area and coordinate effectively with the Investigator-on-Case (IOC) upon arrival at the crime scene (5.00); and that the investigator can systematically identify and properly document discarded evidence during crime scene processing (5.00).

This suggests that both supervisors and investigators are rated as experts in the crime scene approach.

This indicates the highest-rated competency among supervisors is the correct utilization of Personal Protective Equipment (PPE) to successfully perform a comprehensive search and collection task (4.69). This highlights the importance of safety and contamination control in forensic investigations. Another highly rated competency is the ability to systematically identify and properly document discarded evidence during crime scene processing (4.68), emphasizing the role of meticulous evidence handling. Supervisors also rated highly the investigator's ability to independently evaluate team safety, analyze adverse ground conditions, and assess weather factors before entering the crime scene (4.66), underscoring the necessity of situational awareness and risk assessment. The crime scene approach generally means a systematic and procedural approach in assessing, identifying, and evaluating a crime scene before thoroughly investigating all the necessary details and gathering important information to solve a case. According to the study of Zahra (2022), the proper

and organized handling of the crime scene is essential for collecting and preserving physical evidence that can link suspects to crimes and support prosecution. This crime scene approach becomes an integral part in determining various important information that will be relevant and useful in solving the case.

3.1.2 Preliminary Crime Scene Survey

This suggests that both supervisors and investigators are rated as experts in preliminary crime scene surveys.

Table 3 presents the level of competency of SOCO Investigators in the Eastern Police District Forensic Unit (EPDFU) in terms of crime scene approach. When looking at the results of the table, an overall of 4.70 for supervisors and 5.00 for SOCO investigators indicates that both types of respondents see that the level of competency of SOCO investigators of the EPDFU is at an expert level.

The highest of these from the perspective of supervisors are that the investigator can establish primary and secondary crime scene boundaries based on initial observations (4.70), that the investigator can coordinate with first responders and obtain preliminary statements relevant to the crime scene investigation (4.69), and that the investigator can determine the initial sequence of crime scene processing based on available evidence (4.69).

The highest of these from the perspective of SOCO investigators are that the investigator can conduct an initial walk through to determine the scope of the crime scene and assess necessary resources (5.00); the investigator can coordinate with first responders and obtain preliminary statements relevant to the

crime scene investigation (4.93); and the investigator can determine the initial sequence of crime scene processing based on available evidence (4.93).

Table 3.

Level of Competency of SOCO Investigators in the Eastern Police District Forensic Unit (EPDFU) in terms of Preliminary Crime Scene Survey

B. Preliminary Crime Scene Survey	Supervisor		SOCO Investigator	
	Med	Int	Med	Int
1. I/The Investigator am/is able to conduct an initial walk through to determine the scope of the crime scene and assess necessary resources.	4.66	E	5.00	E
2. I/The Investigator am/is able to identify potential hazards and implement control measures before processing the crime scene.	4.58	E	4.87	E
3. I/The Investigator am/is able to establish primary and secondary crime scene boundaries based on initial observations.	4.70	E	4.86	E
4. I/The Investigator am/is able to coordinate with first responders and obtain preliminary statements relevant to the crime scene investigation.	4.69	E	4.93	E
5. I/The Investigator am/is able to determine the initial sequence of crime scene processing based on available evidence.	4.69	E	4.93	E
Overall	**4.70**	**E**	**5.00**	**E**

Legend: N – Novice, D – Developing, C – Competent, P – Proficient, E – Expert.

Median (Med): Represents the middle value of the ratings given by respondents (Supervisor and investigator).

Interpretation (Int): Shows the qualitative assessment of the median value, in this case, “E” which stands for **Expert**.

This indicates that among supervisors, the highest-rated competency is the ability to establish primary and secondary crime scene boundaries based on initial observations (4.70), which highlights the importance of securing the crime scene to preserve evidence integrity. This is followed by the ability to coordinate

with first responders and obtain preliminary statements relevant to the crime scene investigation (4.69), reinforcing the need for collaboration in the early stages of an investigation.

Similarly, the ability to determine the initial sequence of crime scene processing based on available evidence (4.69) ranks highly, emphasizing the role of critical decision-making in structuring the forensic process. The preliminary crime scene survey is often known as the walk through, which focuses on an initial assessment of a crime scene in order to establish a plan and a process to follow in conducting a full investigation. This survey is to potentially identify potential evidence, ensure the integrity of the scene, and assess the scope and location of the crime scene.

In the study of Harris and Lee (2019), the preliminary survey is one of the most important and most challenging steps in a crime scene investigation. This is because the walk through of a crime scene may offer investigators a guide on how to proceed with the processing of a crime scene, may reveal and identify different types of evidence more likely to be linked to the case, and may provide a basis for other integral details that are relevant to the scene. Overall, the findings of this table further highlight the importance of the preliminary survey of a crime scene and how integral and important it is in discovering new information and evidence necessary for the case and how it can further assist in solving it.

3.1.3 Physical Evidence Assessment

This suggests that both supervisors and investigators are rated experts in physical evidence assessment.

Table 4 presents the competency level of SOCO Investigators in the Eastern Police District Forensic Unit (EPDFU) in terms of physical evidence assessment. The overall scores indicate that supervisors rated investigators at 4.71, while SOCO investigators rated themselves at 5.00, both of which fall under the expert level. This suggests that SOCO investigators are highly skilled in handling, evaluating, and preserving physical evidence at crime scenes.

Table 4.

Level of Competency of SOCO Investigators in the Eastern Police District Forensic Unit (EPDFU) in terms of Physical Evidence Assessment

C. Physical Evidence Assessment	Supervisor		SOCO Investigator	
	Med	Int	Med	Int
1. I/The Investigator am/is able to identify and categorize different types of physical evidence present at the crime scene.	4.71	E	5.00	E
2. I/The Investigator am/is able to evaluate the forensic significance of each piece of evidence and determine priority collection.	4.65	E	5.00	E
3. I/The Investigator am/is able to apply proper collection techniques for biological, chemical, and trace evidence.	4.69	E	4.93	E
4. I/The Investigator am/is able to ensure that fragile evidence is documented and collected with minimal contamination risk.	4.71	E	4.93	E
5. I/The Investigator am/is able to determine the best method of preserving different types of evidence for forensic analysis.	4.69	E	4.87	E
Overall	**4.71**	**E**	**5.00**	**E**

Legend: N – Novice, D – Developing, C – Competent, P – Proficient, E – Expert.

Median (Med): Represents the middle value of the ratings given by respondents (Supervisor and investigator).

Interpretation (Int): Shows the qualitative assessment of the median value, in this case, “E” which stands for **Expert**.

Among the competencies, supervisors rated the highest at 4.71 in two areas: identifying and categorizing physical evidence and ensuring that fragile evidence is properly documented and collected with minimal contamination risk. On the other hand, SOCO investigators rated all competencies highly, with two receiving a perfect score of 5.00: the ability to identify and categorize physical evidence present at the crime scene and the ability to evaluate the forensic significance of each piece of evidence and determine priority collection. These results highlight that SOCO investigators prioritize evidence identification and evaluation, as these are crucial in building strong forensic cases.

Physical evidence assessment is a key part of crime scene investigation, as it ensures that crucial pieces of evidence are collected properly and remain admissible in court. According to Ayers, Roberts, and Pettolina (2023), an investigator’s ability to accurately assess and handle evidence significantly impacts the success of forensic analysis and legal proceedings. Similarly, Salem (2023) emphasizes that proper documentation and anti-contamination procedures are critical in maintaining the integrity of evidence throughout the investigation process. The expert-level ratings in Table 1.3 reflect that SOCO investigators follow best practices in evidence handling, reinforcing the reliability of forensic findings.

These findings demonstrate the high competency of SOCO investigators in managing physical evidence, which is essential for crime solutions. Their ability to accurately identify, document, and preserve evidence ensures that forensic results remain credible and legally defensible. Additionally, ongoing training programs can help maintain expertise and keep up with new forensic challenges.

3.1.4 Narrative Description of the Scene

This suggests that both supervisors and investigators are rated as experts in the narrative description of the scene.

Table 5 presents the competency level of SOCO Investigators in the Eastern Police District Forensic Unit (EPDFU) in terms of the narrative description of the scene. The overall results show that supervisors rated the investigators at 4.68, while SOCO investigators rated a perfect 5.00, both categorized under the expert level. This indicates that investigators have a high level of skill in documenting crime scenes, ensuring accuracy and consistency in reports.

Among the specific competencies, SOCO investigators rated themselves highest at 5.00 in three areas: accurately document victim and suspect position for physical evidence at the scene, incorporate initial witness statements into the crime scene narrative, and ensure consistency between the crime scene narrative, sketches, and photographic documentation. Supervisors also rated these competencies highly, with scores ranging from 4.64 to 4.69, reinforcing the strong documentation skills of investigators. The ability to provide a detailed

written description of the crime scene, including environmental conditions, received the lowest supervisor rating at 4.64, though it still falls under expert- level competence.

Table 5.

Level of Competency of SOCO Investigators in the Eastern Police District Forensic Unit (EPDFU) in terms of Narrative Description of the Scene

D. Narrative Description of the Scene	Supervisor		SOCO Investigator	
	Med	Int	Med	Int
1. I/The Investigator am/is able to provide a detailed written description of the crime scene, including environmental conditions.	4.64	E	4.93	E
2. I/The Investigator am/is able to record the position, appearance, and condition of physical evidence before collection.	4.69	E	4.93	E
3. I/The Investigator am/is able to accurately document victim and suspect positions with respect to physical evidence at the scene.	4.68	E	5.00	E
4. I/The Investigator am/is able to incorporate initial witness statements into the crime scene narrative.	4.65	E	5.00	E
5. I/The Investigator am/is able to ensure consistency between the crime scene narrative, sketches, and photographic documentation.	4.67	E	5.00	E
Overall	**4.68**	**E**	**5.00**	**E**

Legend: N – Novice, D – Developing, C – Competent, P – Proficient, E – Expert

Median (Med): Represents the middle value of the ratings given by respondents (Supervisor and investigator).

Interpretation (Int): Shows the qualitative assessment of the median value, in this case, “E” which stands for **Expert**.

Accurate documentation of a crime scene is essential in forensic investigations, as it helps reconstruct events and strengthens legal proceedings. According to Ayers, Roberts, and Pettolina (2023), a well-documented crime

scene allows investigators and forensic analysts to create a clear and precise account of what transpired, reducing uncertainties in court. Additionally, Thallapureddy, Sherratt, Hallowell, and Bhandari (2024) highlight that effective information collection, including statements and physical evidence descriptions, plays a crucial role in criminal investigations. The high ratings in Table 5 suggest that SOCO investigators adhere to best practices in crime scene documentation, ensuring the accuracy and consistency of their reports.

These findings demonstrate the strong documentation skills of SOCO investigators, which are critical in preserving the integrity of crime scene evidence. Continuous training and exposure to advanced documentation techniques can further enhance their ability to provide reliable and detailed crime scene narratives.

3.1.5 Crime Scene Documentation

This suggests that both supervisors and investigators are rated as experts in crime scene documentation.

Table 6 presents the level of competency of SOCO Investigators in the Eastern Police District Forensic Unit (EPDFU) in terms of crime scene documentation. The table evaluates their ability to document crime scenes accurately, including photography, sketches, labelling, and report writing. The overall results show that SOCO investigators (M=4.93) rated themselves at the expert level, while supervisors (M=4.72) also assessed them as experts, indicating high proficiency in crime scene documentation.

Table 6.

Level of Competency of SOCO Investigators in the Eastern Police District Forensic Unit (EPDFU) in terms of Crime Scene Documentation

E. Crime Scene Documentation	Supervisor		SOCO Investigator	
	Med	Int	Med	Int
1. I/The Investigator am/is able to systematically photograph and sketch the crime scene before evidence collection.	4.87	E	4.93	E
2. I/The Investigator am/is able to ensure all documentation corresponds with forensic reports and case files.	4.67	E	5.00	E
3. I/The Investigator am/is able to properly label, index, and store crime scene photographs and sketches.	4.71	E	4.87	E
4. I/The Investigator am/is able to apply the correct procedures for generating written crime scene reports.	4.71	E	4.80	E
5. I/The Investigator am/is able to validate crime scene documentation through peer review or secondary analysis.	4.68	E	4.93	E
Overall	**4.72**	**E**	**4.93**	**E**

Legend: N – Novice, D – Developing, C – Competent, P – Proficient, E – Expert.

Median (Med): Represents the middle value of the ratings given by respondents (Supervisor and investigator).

Interpretation (Int): Shows the qualitative assessment of the median value, in this case, “E” which stands for **Expert**.

Among the five indicators, the highest-rated competency among SOCO investigators is ensuring all documentation corresponds with forensic reports and case files (M=5.00). This suggests that they are well-trained in maintaining consistency and accuracy in crime scene records, which is essential for legal proceedings (Singh, 2021). Supervisors also rated this aspect positively (M=4.67), reflecting confidence in the investigators’ documentation skills. Similarly, the ability to systematically photograph and sketch the crime scene before evidence

collection received high ratings from both groups (M=4.93 for SOCO investigators, M=4.87 for supervisors), emphasizing the importance of visual records in forensic investigations (Badiye et al., 2023).

The lowest-rated indicator for both groups is the ability to apply the correct procedures for generating written crime scene reports, with SOCO investigators scoring (M=4.80) and supervisors rating them slightly higher (M=4.71). While still at the expert level, this suggests a minor gap in report writing that may require further refinement. Clear and well-documented reports are crucial for ensuring evidence integrity and supporting legal proceedings (Ayers et al., 2023).

3.1.6 Crime Scene Search

This suggests that both supervisors and investigators are rated as experts in crime scene searches.

Table 7 presents the competency level of SOCO Investigators in the Eastern Police District Forensic Unit (EPDFU) in terms of crime scene search. The table highlights key skills required for an effective search process, including choosing the best search method, minimizing contamination, documenting evidence, maintaining chain of custody, and securing the crime scene. The results show that SOCO Investigators scored an overall mean of 4.87, categorized as "Expert," while Supervisors had a slightly lower mean of 4.72, also within the "Expert" category. These findings suggest that both groups demonstrate a high level of proficiency in conducting crime scene searches, ensuring the integrity of evidence collection and scene security.

Table 7.

Level of Competency of SOCO Investigators in the Eastern Police District Forensic Unit (EPDFU) in terms of Crime Scene Search

F. Crime Scene Search	Supervisor		SOCO Investigator	
	Med	Int	Med	Int
1. I/The Investigator am/is able to determine the most effective crime scene search method based on the scene's characteristics.	4.65	E	4.87	E
2. I/The Investigator am/is able to conduct a systematic crime scene search while minimizing contamination risks.	4.67	E	4.93	E
3. I/The Investigator am/is able to ensure all evidence is located, properly marked, and documented during the search.	4.71	E	4.87	E
4. I/The Investigator am/is able to ensure chain of custody protocols are maintained while handling evidence.	4.71	E	4.93	E
5. I/The Investigator am/is able to conclude searches effectively and secure the scene for forensic analysis.	4.70	E	4.87	E
Overall	**4.72**	**E**	**4.87**	**E**

Legend: N – Novice, D – Developing, C – Competent, P – Proficient, E – Expert.

Median (Med): Represents the middle value of the ratings given by respondents (Supervisor and investigator).

Interpretation (Int): Shows the qualitative assessment of the median value, in this case, “E” which stands for **Expert**.

Among the indicators, the highest rating is for SOCO Investigators (4.93), who can conduct a systematic crime scene search while minimizing contamination risk and are able to ensure chain of custody protocols are maintained while handling evidence. This reflects their strong adherence to forensic protocols that ensure the reliability of physical evidence (Cerqueira, 2024). Supervisors, on the other hand, had their highest score (4.71) in multiple areas, able to ensure all evidence is located, properly marked, and documented

during the search and ensure chain of custody protocols are maintained while handling evidence, indicating a well-established understanding of search procedures. However, their lowest-rated skill (4.65) was being able to determine the most effective crime scene search method based on the scene's characteristics, suggesting a possible need for further refinement in tactical decision-making.

The effectiveness of crime scene searches is crucial in forensic investigations, as it directly affects evidence integrity and case resolution. According to Butler (2024), proper crime scene search methods help prevent contamination, misplacement, or loss of crucial evidence, ultimately strengthening legal proceedings. The data from this table aligns with this perspective, as both groups display a high level of competency in handling evidence properly. However, continuous training on crime scene assessment techniques may further enhance search efficiency, particularly in selecting the most effective search methods tailored to specific cases.

3.1.7 Physical Evidence Recording and Collection

This suggests that both supervisors and investigators are rated as experts in physical evidence recording and collection.

Table 8 presents the level of competency of SOCO Investigators in the Eastern Police District Forensic Unit (EPDFU) in terms of physical evidence recording and collection. The data indicates that both supervisors and SOCO investigators have been rated at an expert level (E) in all competencies related to handling physical evidence. The overall competency rating for supervisors is 4.71,

while SOCO investigators have a slightly higher score of 5.00. These findings highlight a high degree of proficiency in properly tagging, labeling, packaging, and securing physical evidence to ensure forensic integrity.

Table 8.

Level of Competency of SOCO Investigators in the Eastern Police District Forensic Unit (EPDFU) in terms of Physical Evidence Recording and Collection

G. Physical Evidence Recording and Collection	Supervisor		SOCO Investigator	
	Med	Int	Med	Int
1. I/The Investigator am/is able to tag, label, and record all physical evidence in accordance with standard forensic protocols.	4.71	E	5.00	E
2. I/The Investigator am/is able to ensure proper documentation of evidence, including time, date, and location of collection.	4.69	E	5.00	E
3. I/The Investigator am/is able to select appropriate packaging for different types of physical evidence to prevent contamination.	4.71	E	5.00	E
4. I/The Investigator am/is able to verify that all collected evidence is properly stored and prepared for forensic analysis.	4.71	E	4.93	E
5. I/The Investigator am/is able to maintain accurate chain of custody records for all evidence collected.	4.70	E	5.00	E
Overall	**4.71**	**E**	**5.00**	**E**

Legend: N – Novice, D – Developing, C – Competent, P – Proficient, E – Expert.

Median (Med): Represents the middle value of the ratings given by respondents (Supervisor and investigator).

Interpretation (Int): Shows the qualitative assessment of the median value, in this case, “E” which stands for **Expert**.

Among supervisors, three indicators received the highest ratings of 4.71, namely the ability to select appropriate packaging for different types of evidence, verify that all collected evidence is properly stored, and accurately tag and label and record physical evidence under standard forensic protocols. These

competencies reflect a strong adherence to forensic protocols that prevent evidence contamination and ensure chain of custody reliability. The lowest-rated competency among supervisors was ensuring proper documentation of evidence, including time, date, and location of data (4.69). Meanwhile, SOCO investigators consistently rated their competencies at 5.00 across all areas, except for verifying proper storage and preparation for forensic analysis, which received a slightly lower score of 4.93. This suggests that while SOCO investigators are highly confident in their ability to document and package evidence, there may be minor concerns regarding the storage process before forensic examination.

The results align with forensic best practices that emphasize proper evidence handling as a fundamental component of crime scene investigation (Badiye et al., 2023). A structured system for tagging, packaging, and maintaining the chain of custody is essential in ensuring the admissibility of evidence in court proceedings (Bajo, 2021). The slight gap in documentation scores among supervisors suggests a potential area for reinforcement, particularly in ensuring detailed and standardized recording procedures that minimize discrepancies in forensic reports.

3.1.8 Final Crime Scene Survey

This suggests that both supervisors and investigators are rated as experts in the final crime scene survey.

Table 9 presents the level of competency of SOCO Investigators in the Eastern Police District Forensic Unit (EPDFU) in terms of the Final Crime Scene Survey.

Table 9.

Level of Competency of SOCO Investigators in the Eastern Police District Forensic Unit (EPDFU) in terms of Final Crime Scene Survey

H. Final Crime Scene Survey	Supervisor		SOCO Investigator	
	Med	Int	Med	Int
1. I/The Investigator am/is able to conduct a final walkthrough of the crime scene to verify that all evidence has been documented and collected.	4.56	E	4.87	E
2. I/The Investigator am/is able to confirm that all scene documentation, including photographs and sketches, are complete and accurate.	4.63	E	4.93	E
3. I/The Investigator am/is able to identify any overlooked evidence before releasing the scene.	4.71	E	4.86	E
4. I/The Investigator am/is able to ensure that all evidence packaging is properly sealed and labeled for transport.	4.66	E	4.87	E
5. I/The Investigator am/is able to complete final documentation and formally release the crime scene in coordination with the Investigator-on-Case.	4.60	E	5.00	E
Overall	**4.64**	**E**	**4.93**	**E**

Legend: N – Novice, D – Developing, C – Competent, P – Proficient, E – Expert.

Median (Med): Represents the middle value of the ratings given by respondents (Supervisor and investigator).

Interpretation (Int): Shows the qualitative assessment of the median value, in this case, “E” which stands for **Expert**.

The table shows that the overall competency rating for supervisors is 4.64, while SOCO investigators have a slightly higher rating of 4.93. These scores indicate that both groups recognize the investigators' competency at an expert level (E) in conducting the final crime scene survey. This stage is critical in

ensuring that all evidence has been properly documented, collected, and accounted for before the scene is released.

Among supervisors, the highest-rated competency is the ability to identify any overlooked evidence before releasing the scene (4.71), followed by the ability to ensure that all evidence packaging is properly sealed and labelled for transport (4.66). In contrast, the lowest-rated competency among supervisors is the ability to complete final documentation and formally release the crime scene in coordination with the Investigator-on-Case (4.60). On the other hand, SOCO investigators rated the ability to complete final documentation and formally release the crime scene as the highest (5.00), showing their confidence in this aspect of their work. The lowest score from SOCO investigators was 4.86, still at the expert level, for identifying overlooked evidence before releasing the scene. The comparison between the two groups indicates that while SOCO investigators view their final crime scene processing as highly proficient, supervisors see minor gaps in documentation and formal release procedures.

The findings align with forensic science principles that emphasize thorough documentation and proper evidence handling to maintain the integrity of the crime scene (Ayers et al., 2023). Properly finalizing a crime scene is essential to ensuring that no evidence is left behind and that all collected items are properly packaged and transported (Badiye et al., 2023). The slightly lower rating on final documentation from supervisors could suggest the need for continued reinforcement of reporting procedures and coordination with the investigator-on-case to ensure a seamless handover process.

3.1.9 Post Crime Scene processing

This suggests that both supervisors and investigators are rated experts in post-crime-scene processing.

Table 10 presents the level of competency of SOCO Investigators in the Eastern Police District Forensic Unit (EPDFU) in terms of post-crime scene processing. The data reveal that both supervisors and SOCO investigators demonstrate expert (E) levels across all assessed competencies. The overall competency score for supervisors is 4.70, while SOCO investigators achieved a perfect 5.00, indicating a high level of proficiency in handling post-crime scene responsibilities such as evidence transfer, documentation, debriefing, and case reporting.

Among supervisors, the highest-rated indicators (4.70) pertain to participation in debriefing sessions, maintenance of evidence storage areas, and adherence to procedures when handing over crime scene control to authorized authorities. These ratings suggest strong compliance with forensic protocols that ensure proper communication, storage, and case finalization. The lowest-rated competency among supervisors was the ability to submit preliminary findings and case notes to superiors for assessments (4.64).

In contrast, SOCO investigators scored 5.00 in two key areas: participation in debriefing sessions and evidence storage maintenance following forensic preservation requirements. The only slightly lower score (4.93) was for the ability to follow established procedures when handing over control of the

crime scene to authorized authorities and submitting preliminary findings and case notes to superiors for assessment.

Table 10.

Level of Competency of SOCO Investigators in the Eastern Police District Forensic Unit (EPDFU) in terms of Post Crime Scene processing

I. Post Crime Scene Processing	Supervisor		SOCO Investigator	
	Med	Int	Med	Int
1. I/The Investigator am/is able to properly log and document the transfer of evidence to forensic laboratories.	4.66	E	4.87	E
2. I/The Investigator am/is able to submit preliminary findings and case notes to superiors for assessment.	4.64	E	4.93	E
3. I/The Investigator am/is able to participate in debriefing sessions to discuss observed challenges and encountered difficulties.	4.70	E	5.00	E
4. I/The Investigator am/is able to ensure proper maintenance of evidence storage areas in accordance with forensic preservation requirements.	4.70	E	5.00	E
5. I/The Investigator am/is able to follow established procedures when handing over control of the crime scene to authorized authorities.	4.70	E	4.93	E
Overall	**4.70**	**E**	**5.00**	**E**

Legend: N – Novice, D – Developing, C – Competent, P – Proficient, E – Expert.

Median (Med): Represents the middle value of the ratings given by respondents (Supervisor and investigator).

Interpretation (Int): Shows the qualitative assessment of the median value, in this case, “E” which stands for **Expert**.

These findings align with forensic research emphasizing the importance of post-crime scene procedures in maintaining evidence integrity and ensuring smooth case transitions (Bautista, 2024). Proper debriefing sessions and meticulous storage practices play a crucial role in avoiding evidence

contamination and maintaining an unbroken chain of custody (Badiye et al., 2023). The slightly lower scores in preliminary report submission suggest that enhancing documentation protocols and streamlining report-writing processes could further strengthen efficiency in case assessments.

3.1.10 Case Conference

This suggests that both supervisors and investigators are rated as experts in case conferences.

Table 11 presents the competency level of SOCO investigators in conducting case conferences. The overall ratings of 4.70 for supervisors and 5.00 for SOCO investigators indicate that both groups consider themselves highly proficient in this aspect.

Among SOCO investigators, all indicators received a perfect expert rating (5.00), reflecting their confidence in handling case discussions. Supervisors rated the ability to properly document every resolution point and discussion outcome from the case (4.73) and the provision of recommendations for additional forensic tests when necessary (4.70). The high ratings emphasize the importance of case conferences in forensic investigations. These sessions allow investigators to analyze evidence, review findings, and coordinate investigative strategies with forensic experts and legal authorities.

According to Badiye et al. (2023), effective communication and documentation during case conferences are essential for ensuring the accuracy and reliability of forensic interpretations. Additionally, proper documentation of

resolutions and discussion outcomes strengthen investigative transparency and legal proceedings (Bautista, 2024).

Table 11.

Level of Competency of SOCO Investigators in the Eastern Police District Forensic Unit (EPDFU) in terms of Case Conference

J. Case Conference	Supervisor		SOCO Investigator	
	Med	Int	Med	Int
1. I/The Investigator am/is able to present evidence reports and findings to forensic experts and investigators.	4.67	E	5.00	E
2. I/The Investigator am/is able to actively contribute to crime scene analysis sessions to establish connections between different cases.	4.62	E	5.00	E
3. I/The Investigator am/is able to review crime scene documentation and witness testimonies throughout the conference.	4.62	E	5.00	E
4. I/The Investigator am/is able to provide recommendations for additional forensic tests when necessary.	4.70	E	5.00	E
5. I/The Investigator am/is able to properly document every resolution point and discussion outcome from the case conference.	4.73	E	5.00	E
Overall	**4.70**	**E**	**5.00**	**E**

Legend: N – Novice, D – Developing, C – Competent, P – Proficient, E – Expert.

Median (Med): Represents the middle value of the ratings given by respondents (Supervisor and investigator).

Interpretation (Int): Shows the qualitative assessment of the median value, in this case, “E” which stands for **Expert**.

The consistently high ratings suggest that SOCO investigators are well-equipped to handle case conferences, reinforcing their role in the judicial process. Continuous training and structured documentation protocols can enhance the

effectiveness of these discussions, ensuring that case resolutions are thorough and evidence-based.

3.2 What is the level of accessibility and adequacy of resources and tools available to EPD SOCO Investigators in terms of identified variables?

This section presents the level of accessibility and adequacy of resources and tools available to EPD SOCO Investigators in terms of crime Scene Processing Specific Procedures, crime Scene Documentation Procedure, crime Scene Search Procedure, and evidence Collection Tools and Equipment

3.2.1 Crime Scene Processing Specific Procedures

This suggests that both supervisors and investigators are rated as highly accessible and adequate in crime scene processing-specific procedures.

Table 12 presents the level of accessibility and adequacy of resources and tools available to EPD SOCO Investigators in terms of crime scene processing-specific procedures. When looking at the results of the table, an overall of 3.82 for supervisors and 3.93 for SOCO investigators indicates that both types of respondents see that the level of accessibility and adequacy of the resources and tools available to SOCO investigators is highly accessible and adequate.

The highest of these, from the perspective of supervisors, are that the investigator can place crime scene barriers like police line tape, cones, and barricades (3.83); that the investigator can place crime scene evidence markers (3.82); and that the investigator can provide emergency response tools such as first-aid kits and decontamination stations (3.82).

Table 12.

Level of Accessibility and Adequacy of Resources and Tools Available to EPD SOCO Investigators in terms of Crime Scene Processing Specific Procedures

2.1. Crime Scene Processing Specific Procedures	**Supervisor**		**SOCO Investigator**	
	Med	**Int**	**Med**	**Int**
1. I/The Investigator am/is able placed crime scene barriers (police line tape, cones, barricades).	3.83	HAA	3.93	HAA
2. I/The Investigator am/is able produced portable lighting systems for low-visibility scenes.	3.75	HAA	3.67	HAA
3. I/The Investigator am/is able used forensic kits (fingerprinting kits, blood detection kits, gunshot residue kits).	3.73	HAA	3.57	HAA
4. I/The Investigator am/is able to utilized mark vehicle for transportation of SOCO investigators (crime scene response vehicles).	3.80	HAA	3.86	HAA
5. I/The Investigator am/is able to placed crime scene evidence markers.	3.82	HAA	4.00	HAA
6. I/The Investigator am/is able to provide emergency response tools (first-aid kits, decontamination stations)	3.82	HAA	3.87	HAA
7. I/The Investigator am/is able to used digital devices for evidence capture (body-worn cameras, handheld devices for notes).	3.75	HAA	3.79	HAA
8. I/The Investigator am/is able to properly used communication devices (radios, mobile phones, satellite phones).	3.78	HAA	3.50	HAA
9. I/The Investigator am/is able produced crime scene reference guides and procedural checklists.	3.75	HAA	3.87	HAA
10. I/The Investigator am/is able to performed case conference after conducting crime scene.	3.78	HAA	4.00	HAA
Overall	**3.82**	**HAA**	**3.93**	**HAA**

**Legend*: NAI – Not Accessible & Inadequate, LAI – Limited Accessibility & Adequacy, AA – Accessible and Adequate, HAA – Highly Accessible and Adequate*

Median (Med): Represents the middle value of the ratings given by respondents (Supervisor and investigator).

Interpretation (Int): Shows the qualitative assessment of the median value, in this case, “HAA” which stands for **Highly Accessible and Adequate**.

The highest of these from the perspective of SOCO investigators are that the investigator can place crime scene evidence markers (4.00), that the investigator can perform case conferences after conducting a crime scene (4.00), and that the investigator can place crime scene barriers such as police line tape, cones, and barricades (3.93).

This indicates that crime scene processing-specific procedures involve the systematic examination, documentation, and collection of evidence from a crime scene. These procedures are essential for ensuring the integrity of physical evidence, maintaining the chain of custody, and facilitating accurate forensic analysis.

According to Fisher and Bright (2020), proper crime scene processing requires efficient scene management, systematic documentation, and the availability of essential forensic tools to ensure accuracy and reliability in criminal investigations. The high ratings given to crime scene barriers and evidence markers suggest that investigators recognize the fundamental role of scene control and evidence preservation in forensic work.

Likewise, the emphasis on case conferences indicates that SOCO investigators value collaborative post-investigation discussions, which aid in evidence interpretation and case resolution. These findings align with studies by Blancaflor et al. (2023) and Dalugdug et al. (2023), which emphasize that crime scene efficiency is dependent on proper scene security, accurate evidence

documentation, and post-scene evaluations. Furthermore, Santos (2023) highlights that investigator preparedness, procedural standardization, and resource availability significantly influence forensic accuracy.

3.2.2 Crime Scene Documentation Procedure

This suggests that both supervisors and investigators are rated as highly accessible and adequate in the crime scene documentation procedure.

Table 13 presents the level of accessibility and adequacy of resources and tools available to SOCO investigators in terms of crime scene documentation procedures. The overall ratings indicate that supervisors (3.83) and SOCO investigators (3.61) both perceive the available resources as highly accessible and adequate.

Among the highest-rated indicators from the supervisors' perspective are being able to provide high-resolution scanning or digital imaging tools and being able to provide data storage devices for digital documentation (external hard drives, cloud storage), both rated (3.77); standardized templates for crime scene documentation (3.75); and the ability to perform inventory sheets and logbooks (3.73).

Meanwhile, among the highest perspectives from SOCO investigators were the ability to produce weather-resistant documentation materials (waterproof notebooks, ink pens) (3.77), the ability to perform evidence inventory sheets and logbook (3.75), and the ability to use standardized templates for crime scene documentation (3.64).

Table 13.

Level of Accessibility and Adequacy of Resources and Tools Available to EPD SOCO Investigators in terms of Crime Scene Documentation Procedure

2.2. Crime Scene Documentation Procedure	**Supervisor**		**SOCO Investigator**	
	Med	**Int**	**Med**	**Int**
1. I/The Investigator am/is able provide crime scene sketching tools (graphing paper, digital sketching software).	3.72	HAA	3.54	HAA
2. I/The Investigator am/is able provide photographic documentation equipment (DSLR cameras, macro lenses, tripods).	3.70	HAA	3.58	HAA
3. I/The Investigator am/is able to performed video recording devices for continuous documentation.	3.68	HAA	3.22	AA
4. I/The Investigator am/is able create automated evidence logging systems (barcode scanners, electronic databases).	3.68	HAA	3.30	HAA
5. I/The Investigator am/is able to performed evidence inventory sheets and logbooks.	3.73	HAA	3.75	HAA
6. I/The Investigator am/is able provide high-resolution scanning or digital imaging tools	3.77	HAA	3.58	HAA
7. I/The Investigator am/is able to produced weather-resistant documentation materials (waterproof notebooks, ink pens)	3.69	HAA	3.77	HAA
8. I/The Investigator am/is able performed drones or overhead cameras for aerial documentation.	3.71	HAA	2.86	HAA
9. I/The Investigator am/is able to used standardized templates for crime scene documentation.	3.75	HAA	3.64	HAA
10. I/The Investigator am/is able provide data storage devices for digital documentation (external hard drives, cloud storage).	3.77	HAA	3.62	HAA
Overall	**3.83**	**HAA**	**3.61**	**HAA**

**Legend: NAI – Not Accessible & Inadequate, LAI – Limited Accessibility & Adequacy, AA – Accessible and Adequate, HAA – Highly Accessible and Adequate*

Median (Med): Represents the middle value of the ratings given by respondents (Supervisor and investigator).

Interpretation (Int): Shows the qualitative assessment of the median value, in this case, “HAA” which stands for **Highly Accessible and Adequate**.

These results highlight the importance of accurate and efficient crime scene documentation in forensic investigations. Digital imaging tools and automated evidence logging systems ensure precise recording of crime scene details, reducing human errors and enhancing the integrity of evidence (Badiye et al., 2023). The use of standardized templates and water-resistant materials further supports the consistency and durability of records, which are critical for legal proceedings. The slightly lower rating from SOCO investigators suggests potential gaps in accessibility or adequacy, possibly due to the limited availability of certain tools in field operations.

3.2.3 Crime Scene Search Procedure

This suggests that both supervisors and investigators are rated as highly accessible and adequate in the crime scene search procedure.

Table 14 presents the accessibility and adequacy of resources available to EPD SOCO investigators for crime scene search procedures. The overall ratings of 3.77 for supervisors and 3.88 for SOCO investigators suggest that both groups perceive these resources as highly accessible and adequate.

Among the highest-rated indicators from the supervisors’ perspective are being able to use UV light and forensic alternate light sources (ALS) (3.78), being able to place protective barriers to prevent cross-contamination during searches (3.75), and being able to provide swab kits for trace evidence collection (3.73).

Table 14.

Level of Accessibility and Adequacy of Resources and Tools Available to EPD SOCO Investigators in terms of Crime Scene Search Procedure

2.3. Crime Scene Search Procedure	Supervisor		SOCO Investigator	
	Med	Int	Med	Int
1. I/The Investigator am/is able to performed search pattern templates (grid, spiral, zone, strip search guides)	3.72	HAA	3.93	HAA
2. I/The Investigator am/is able to placed metal detectors and ground-penetrating radar for hidden evidence	3.68	HAA	3.62	HAA
3. I/The Investigator am/is able to used thermal imaging or night vision tools for low-light conditions.	3.68	HAA	3.22	AA
4. I/The Investigator am/is able to cooperated to K9 forensic units for evidence search assistance.	3.60	HAA	2.67	HAA
5. I/The Investigator am/is able to used magnification tools for small evidence detection.	3.72	HAA	3.46	HAA
6. I/The Investigator am/is able to used UV light and forensic alternate light sources (ALS).	3.78	HAA	3.71	HAA
7. I/The Investigator am/is able to provide swab kits for trace evidence collection.	3.73	HAA	3.87	HAA
8. I/The Investigator am/is able to used mapping and survey equipment for accurate scene measurements.	3.72	HAA	3.86	HAA
9. I/The Investigator am/is able provide decontamination kits for biological hazard searches	3.72	HAA	3.67	HAA
10. I/The Investigator am/is able to placed protective barriers to prevent cross-contamination during searches.	3.75	HAA	3.86	HAA
Overall	**3.77**	**HAA**	**3.88**	**HAA**

**Legend: NAI – Not Accessible & Inadequate, LAI – Limited Accessibility & Adequacy, AA – Accessible and Adequate, HAA – Highly Accessible and Adequate*

Median (Med): Represents the middle value of the ratings given by respondents (Supervisor and investigator).

Interpretation (Int): Shows the qualitative assessment of the median value, in this case, “HAA” which stands for **Highly Accessible and Adequate**.

The highest of these from the perspective of SOCO investigators are the ability to perform search pattern templates (grid, spiral, zone, and strip search guides) (3.93); the ability to provide swab kits for trace evidence collection (3.87); and the ability to use mapping and survey equipment for accurate scene measurements and to place protective barriers to prevent cross-contamination during searches, both rated (3.86).

The high ratings for these tools highlight their crucial role in enhancing the accuracy and efficiency of crime scene investigations. Ground-penetrating radar significantly aids in locating buried evidence, making it an invaluable tool for forensic searches (Badiye et al., 2023). Meanwhile, forensic ALS technology improves the detection of trace evidence such as bodily fluids, fingerprints, and gunshot residues, which are critical in reconstructing crime events (Bautista, 2024). The collaboration with K9 forensic units further enhances search operations, particularly in locating drugs, explosives, and decomposed remains.

3.2.4 Evidence Collection Tools and Equipment

This suggests that both supervisors and investigators are rated as highly accessible and adequate in evidence collection tools and equipment.

Table 15 presents the level of accessibility and adequacy of evidence collection tools and equipment available to EPD SOCO investigators. The overall mean scores indicate that supervisors (3.77) and SOCO investigators (3.93) perceive these resources as highly accessible and adequate.

Table 15.

Level of Accessibility and Adequacy of Resources and Tools Available to EPD SOCO Investigators in terms of Evidence Collection Tools and Equipment

2.4. Evidence Collection Tools and Equipment	Supervisor		SOCO Investigator	
	Med	Int	Med	Int
1. I/The Investigator am/is able provide evidence collection bags and containers (paper bags, plastic vials, rigid boxes)	3.80	HAA	3.93	HAA
2. I/The Investigator am/is able provide DNA collection kits (buccal swabs, sterile gloves, FTA cards).	3.72	HAA	3.93	HAA
3. I/The Investigator am/is able Latent fingerprint development kits (dusting powders, cyanoacrylate fuming chambers)	3.72	HAA	4.00	HAA
4. I/The Investigator am/is able used ballistics evidence kits (bullet trajectory rods, comparison microscopes)	3.79	HAA	4.00	HAA
5. I/The Investigator am/is able to provide biological evidence preservation tools (refrigerated storage, transport coolers)	3.69	HAA	3.54	HAA
6. I/The Investigator am/is able used adhesive lifters and gelatin lifters for trace evidence.	3.69	HAA	3.62	HAA
7. I/The Investigator am/is able used electrostatic dust print lifters.	3.71	HAA	3.54	HAA
8. I/The Investigator am/is able provide drug testing and toxicology kits.	3.77	HAA	3.93	HAA
9. I/The Investigator am/is able provide fire debris collection kits (arson accelerant detection kits)	3.76	HAA	3.58	HAA
10. I/The Investigator am/is able to used documentation materials for evidence labeling and chain of custody tracking.	3.77	HAA	3.87	HAA
Overall	**3.77**	**HAA**	**3.93**	**HAA**

**Legend: NAI – Not Accessible & Inadequate, LAI – Limited Accessibility & Adequacy, AA – Accessible and Adequate, HAA – Highly Accessible and Adequate*

Median (Med): Represents the middle value of the ratings given by respondents (Supervisor and investigator).

Interpretation (Int): Shows the qualitative assessment of the median value, in this case, “HAA” which stands for **Highly Accessible and Adequate**.

Among the highest-rated indicators from the supervisors' perspective are being able to provide the evidence collection bags and containers (paper bags, plastic vials, rigid boxes) (3.80); being able to use ballistics evidence kits (bullet trajectory rods, comparison microscopes) (3.79); being able to provide drug testing and toxicology kits; and being able to use documentation materials for evidence labelling and chain of custody tracking, both rated (3.77).

The emphasis on evidence packaging and storage tools reflects their fundamental role in maintaining evidence integrity from collection to laboratory analysis. According to Almora et al. (2022), proper evidence containment, particularly for biological and chemical samples, is crucial in preventing contamination and degradation. The high rating of ballistics kits and toxicology kits aligns with the increasing forensic demand for firearm and drug-related investigations.

Underwood and Phillips (2021) highlight that forensic labs frequently process toxicology and firearms evidence, necessitating specialized tools for accurate crime scene assessments. However, the relatively lower rating of biological evidence preservation tools (3.69 for supervisors, 3.54 for SOCO investigators) suggests potential gaps in cold storage and transport solutions, which could hinder DNA and bodily fluid analysis, as also noted by Bautista (2024).

3.3. What is the performance of the SOCO Investigators as reflected in their Individual Performance Evaluation Rating (IPER)?

Table 16 presents the performance of SOCO investigators based on the Individual Performance Evaluation Rating (IPER). The average IPER score of supervisors is 90.49, with a standard deviation of 1.286.

From the supervisors' perspective, their scores range from the lowest being 87.918 to the highest being 90.776. The SOCO investigators have a slightly higher average of 91.53, with a standard deviation of 1.552. Among the SOCO investigators' perspectives, their scores range from the lowest being 89.978 to their highest being 93.082. This suggests that SOCO investigators have a more variable range of scores compared to supervisors, whose ratings are more consistent.

Table 16.

Performance of the SOCO Investigators Based on Individual Performance Evaluation Rating (IPER)

Type of Respondent	Total Number of Respondents	Average IPER	Standard Deviation
Supervisor	15	90.49	1.286
SOCO Investigator	61	91.53	1.552

The IPER serves as an essential metric for assessing the effectiveness and competency of forensic investigators in handling crime scene investigations. According to Santos (2023), performance evaluation in forensic work is crucial in ensuring that investigators adhere to standard procedures, maintain accuracy in evidence handling, and contribute to successful case resolutions. The slightly higher average IPER for SOCO investigators may indicate their hands-on

involvement in evidence collection and crime scene management, as noted by Benter and Cawi (2021), who emphasized the importance of field experience in forensic competency.

3.4. Is there a significant relationship between competencies of EPD SOCO investigators, accessibility and adequacy of available resources and tools, and their performance?

3.4.1 Crime Scene Processing Specific Procedures

Table 17 is the relationship between the level of competency of SOCO Investigators in the Eastern Police District Forensic Unit (EPDFU) and the level of accessibility and adequacy of resources and tools available to EPD SOCO Investigators in terms of crime scene processing specific procedures. The factors of the level of competency of SOCO Investigators in the Eastern Police District Forensic Unit include crime scene approach, preliminary crime scene survey, physical evidence assessment, narrative description of the scene, crime scene documentation, crime scene search, physical evidence recording and collection, final crime scene survey, post-crime scene processing, and case conference.

In determining whether there is a significant relationship between the two factors, the Spearman-rho non-parametric test was used, wherein a p-value of less than or equal to 0.050 will indicate that the relationship was significant.

When looking over the results of the table, it highlights how there is a moderate to high relationship between the level of competency of SOCO Investigators in the EPDFU and the level of accessibility and adequacy of resources and tools available to EPD SOCO Investigators in terms of crime

scene processing-specific procedures. And with a p-value of 0.000 on the relationship between all factors, this relationship is significant.

Table 17.

Relationship between the Level of Competency of SOCO Investigators in the Eastern Police District Forensic Unit and the Level of Accessibility and Adequacy of Resources and Tools Available to EPD SOCO Investigators in terms of Crime Scene Processing Specific Procedures

Predictor (Level of Competency)	**Response (Level of Accessibility)**	**Spearman-rho ρ Coefficient Value**	**Interpretation**	**p-Value**
Crime Scene Approach	Crime Scene Processing Specific Procedures	0.681	Moderate Correlation	0.000*
Preliminary Crime Scene Survey		0.703	High Correlation	0.000*
Physical Evidence Assessment		0.714	High Correlation	0.000*
Narrative Description of the Scene		0.755	High Correlation	0.000*
Crime Scene Documentation		0.714	High Correlation	0.000*
Crime Scene Search		0.692	Moderate Correlation	0.000*
Physical Evidence Recording and Collection		0.714	High Correlation	0.000*
Final Crime Scene Survey		0.695	Moderate Correlation	0.000*
Post Crime Scene Processing		0.769	High Correlation	0.000*
Case Conference		0.779	High Correlation	0.000*

**significant @ ≤ 0.05*

This means that when the level of accessibility and adequacy of tools and resources related to crime scene processing specific procedures is high, it further

improves and enhances the level of competency of SOCO investigators in the EPDFU along the various factors.

The strongest correlation is found in Narrative Description of the Scene (ρ = 0.755, p = 0.000), followed by Crime Scene Search (ρ = 0.892, p = 0.000), suggesting that resource adequacy plays a crucial role in the effectiveness of these procedures. Conversely, the Crime Scene Approach (ρ = 0.681, p = 0.000) shows the lowest correlation, indicating that initial investigative strategies may depend more on individual skill and experience rather than resource availability. The results align with previous studies emphasizing the role of resources in forensic investigation efficiency. According to Dalugdog et al. (2023), well-equipped forensic teams significantly enhance investigative outcomes. Furthermore, Blancaflor et al. (2023) highlight that digital forensic advancements rely heavily on accessible and sufficient tools.

3.4.2 Crime Scene Documentation Procedures

Table 18 presents the relationship between SOCO investigators' competency levels and the accessibility and adequacy of resources and tools in crime scene documentation procedures. The results indicate that all predictors exhibit a low correlation with resource availability, as measured by Spearman-rho (ρ) coefficient values and statistical significance (p-values).

The highest correlation is found in Crime Scene Search (ρ = 0.537, p = 0.000), suggesting that while resources contribute to effective search, investigators' skills and training may play a more dominant role. The lowest correlation is seen in Crime Scene Approach (ρ = 0.391, p = 0.000) and Narrative

Description of the Scene (ρ = 0.391, p = 0.000), indicating that the ability to assess and describe a crime scene may rely more on investigative experience than on resource availability.

Table 18.

Relationship between the Level of Competency of SOCO Investigators in the Eastern Police District Forensic Unit and the Level of Accessibility and Adequacy of Resources and Tools Available to EPD SOCO Investigators in terms of Crime Scene Documentation Procedures

Predictor (Level of Competency)	**Response (Level of Accessibility)**	**Spearman-rho ρ Coefficient Value**	**Interpretation**	**p-Value**
Crime Scene Approach	Crime Scene Documentation Procedures	0.391	Low Correlation	0.000*
Preliminary Crime Scene Survey		0.414	Low Correlation	0.000*
Physical Evidence Assessment		0.424	Low Correlation	0.000*
Narrative Description of the Scene		0.391	Low Correlation	0.000*
Crime Scene Documentation		0.487	Low Correlation	0.000*
Crime Scene Search		0.537	Low Correlation	0.000*
Physical Evidence Recording and Collection		0.424	Low Correlation	0.000*
Final Crime Scene Survey		0.411	Low Correlation	0.000*
Post Crime Scene Processing		0.406	Low Correlation	0.000*
Case Conference		0.414	Low Correlation	0.000*

**significant @ ≤ 0.05*

These findings are consistent with the studies of Dalugdog et al. (2023) and Blancaflor et al. (2023), which emphasize that forensic tools enhance investigative work. “The study made by Verma and Chaudhary (2024) highlighted that Crime Scene Investigation in establishing and preserving crime scenes through proper documentation, photographs, sketches, and detailed notes is vital.

The results highlight that crime scene search relies more on investigator expertise than on available resources. The low correlation values indicate that investigators must be highly trained in search techniques, as resource adequacy alone does not significantly improve performance in this aspect. These findings reinforce the importance of continuous training in crime scene investigation standards and procedures to ensure accuracy and consistency in responding to a crime.

3.4.3 Crime Scene Search Procedures

Table 19 presents the correlation between SOCO investigators’ competency levels and the accessibility and adequacy of resources and tools in crime scene search procedures. The results indicate a moderate correlation across all indicators, as reflected in the Spearman-rho (ρ) coefficient values, all of which are statistically significant ($p = 0.000$).

The highest correlation is observed in Physical Evidence Recording and Collection ($\rho = 0.617$, $p = 0.000$) and Crime Scene Search ($\rho = 0.579$, $p = 0.000$). These findings suggest that access to resources significantly supports the systematic search and handling of physical evidence, reinforcing the importance of specialized equipment in forensic investigations.

Table 19.

Relationship between the Level of Competency of SOCO Investigators in the Eastern Police District Forensic Unit and the Level of Accessibility and Adequacy of Resources and Tools Available to EPD SOCO Investigators in terms of Crime Scene Search Procedures

Predictor (Level of Competency)	**Response (Level of Accessibility)**	**Spearman-rho ρ Coefficient Value**	**Interpretation**	**p-Value**
Crime Scene Approach	Crime Scene Search Procedure	0.517	Moderate Correlation	0.000*
Preliminary Crime Scene Survey		0.539	Moderate Correlation	0.000*
Physical Evidence Assessment		0.550	Moderate Correlation	0.000*
Narrative Description of the Scene		0.517	Moderate Correlation	0.000*
Crime Scene Documentation		0.550	Moderate Correlation	0.000*
Crime Scene Search		0.579	Moderate Correlation	0.000*
Physical Evidence Recording and Collection		0.617	Moderate Correlation	0.000*
Final Crime Scene Survey		0.581	Moderate Correlation	0.000*
Post Crime Scene Processing		0.531	Moderate Correlation	0.000*
Case Conference		0.539	Moderate Correlation	0.000*

**significant @ ≤ 0.05*

Conversely, the lowest correlation is found in Narrative Description of the Scene (ρ = 0.517, p = 0.000) and Crime Scene Approach (ρ = 0.517, p = 0.000), indicating that while resources are beneficial, investigator expertise and procedural knowledge remain crucial factors in these aspects.

These results align with Blancaflor et al. (2023) and Dalugdog et al. (2023), who emphasize that crime scene search efficiency depends on a combination of resources, standardized protocols, and investigator competency. Similarly, Santos (2023) highlights that forensic searches require both technical skills and adequate tools to ensure accuracy in evidence recovery.

3.4.4 Evidence Collection of Resources and Tools for SOCO Investigators

Table 20 presents the correlation between SOCO investigators' competency levels and the accessibility and adequacy of resources and tools in evidence collection. The results indicate a moderate correlation across all indicators, as reflected in the Spearman-rho (ρ) coefficient values, all of which are statistically significant ($p = 0.000$).

The highest correlation is observed in Physical Evidence Recording and Collection ($\rho = 0.679$, $p = 0.000$) and Final Crime Scene Survey ($\rho = 0.647$, $p = 0.000$). These findings suggest that access to resources significantly enhances the ability of SOCO investigators to assess and systematically search crime scenes, reinforcing the importance of well-equipped forensic units.

The study by Benter and Cawi (2021) informs that forensic chemistry is frequently used within the PNP Crime Laboratory, utilizing advanced technology like Gas Chromatography-Mass Spectrometry (GC-MS), being employed for drug testing and toxicology. However, challenges like insufficient personnel, facilities, and office space block the effectiveness of this operation.

Table 20.

Relationship between the Level of Competency of SOCO Investigators in the Eastern Police District Forensic Unit and the Level of Accessibility and Adequacy of Resources and Tools Available to EPD SOCO Investigators in terms of Evidence Collection of Resources and Tools for SOCO Investigators

Predictor (Level of Competency)	**Response (Level of Accessibility)**	**Spearman-rho ρ Coefficient Value**	**Interpretation**	**p-Value**
Crime Scene Approach	Evidence Collection of Resources and Tools for SOCO Investigators	0.576	Moderate Correlation	0.000*
Preliminary Crime Scene Survey		0.598	Moderate Correlation	0.000*
Physical Evidence Assessment		0.609	Moderate Correlation	0.000*
Narrative Description of the Scene		0.576	Moderate Correlation	0.000*
Crime Scene Documentation		0.609	Moderate Correlation	0.000*
Crime Scene Search		0.586	Moderate Correlation	0.000*
Physical Evidence Recording and Collection		0.679	Moderate Correlation	0.000*
Final Crime Scene Survey		0.647	Moderate Correlation	0.000*
Post Crime Scene Processing		0.589	Moderate Correlation	0.000*
Case Conference		0.598	Moderate Correlation	0.000*

**significant @ ≤ 0.05*

Conversely, the lowest correlation is found in Crime Scene Approach and Narrative Description of the Scene ($\rho = 0.576$, $p = 0.000$) and Crime Scene Search ($\rho = 0.586$, $p = 0.000$). This suggests that while resources are essential, investigator expertise and procedural adherence remain crucial in these areas.

These results align with Ayers, Roberts, and Pettolina (2023), who emphasize the importance of a structured crime scene approach, highlighting that meticulous documentation and adherence to established protocols are essential for preserving evidence integrity. Similarly, Badiye et al. (2023) underscore the significance of comprehensive crime scene investigations, noting that a thorough understanding of the scene aids in reconstructing events and establishing factual narratives.

Chapter 4

Summary of Findings, Conclusion and Recommendations

This chapter presents the summary of findings based on the results of the study, followed by the conclusions drawn from these findings and the recommendations formulated to enhance the competency of SOCO investigators and the adequacy of resources used in crime scene investigations. The study examined the competency levels of SOCO investigators in various crime scene procedures, assessed the accessibility and adequacy of resources available to them, and explored the relationship between competency and resource availability.

4.1 Summary of Findings

The salient findings of the study were as follows: When assessing the competency of SOCO investigators in crime scene investigations, both supervisors and SOCO investigators evaluated the competency level as “Expert” across all procedures, including crime scene approach, preliminary survey, physical evidence assessment, scene documentation, and final processing.

In the self-assessment of SOCO investigators, they rated their competency at the highest possible level (5.00) in several key areas, such as conducting an initial walk through, identifying and categorizing physical evidence, documenting suspect/victim positions and witness statements, ensuring all evidence documentation corresponds with reports, conducting systematic searches while maintaining the chain of custody, and participating in debriefing sessions and evidence storage maintenance.

From the perspective of supervisors, SOCO investigators were also rated as highly competent, with slightly lower ratings in specific areas. Supervisors provided their highest ratings in aspects such as the proper utilization of PPE for evidence search and collection, establishing crime scene boundaries, ensuring fragile evidence is properly handled, systematically photographing and sketching the crime scene, and tagging, labelling, and properly storing evidence. These findings suggest that SOCO investigators are highly skilled, with minor variations in ratings reflecting differences in self-perception and supervisory evaluation.

When evaluating the accessibility and adequacy of resources and tools available to SOCO investigators, both supervisors and SOCO investigators rated resource accessibility as “Highly Accessible and Adequate” across all major categories, including crime scene processing, documentation, search, and evidence collection tools.

The highest accessibility and adequacy ratings were observed in crime scene processing procedures, where both groups agreed that resources were readily available and sufficient. However, the lowest ratings were recorded in crime scene documentation procedures, indicating that while documentation tools were available, there was room for improvement in efficiency and accessibility.

To assess the individual performance of SOCO investigators, the study analyzed their Individual Performance Evaluation Rating (IPER) scores. Results revealed that SOCO investigators had a slightly higher average performance rating (91.53) compared to the supervisors' evaluation of them (90.49). This

suggests that SOCO investigators perceive themselves as highly capable, and their performance aligns closely with supervisory assessments, further reinforcing their expert-level competency.

The study established a significant relationship between SOCO investigators' competency levels and the accessibility and adequacy of resources available to them. The strongest relationship was found in the Narrative Description of the Scene ($\rho = 0.755$), indicating that investigators perform significantly better when adequate resources for scene documentation are available. A moderate relationship was observed in other crime scene investigation aspects, suggesting that resource adequacy directly impacts investigator competency.

4.1.2 Conclusion

Based on the findings of the study, it was concluded that SOCO investigators in the Eastern Police District Forensic Unit (EPDFU) exhibit a high level of competency in all aspects of crime scene investigation, as assessed by both self-evaluation and supervisory evaluation. Their expertise ensures efficient and accurate crime scene processing, from approach and evidence collection to documentation and final scene closure.

The results also indicate that the accessibility and adequacy of resources play a crucial role in the competency of SOCO investigators. While crime scene processing tools and general resources are deemed highly adequate, slight gaps exist in the accessibility of crime scene documentation tools, which could benefit from enhancements.

Moreover, the strong correlation between competency and resource adequacy suggests that improvements in resource availability, particularly in documentation, could further enhance the performance of SOCO investigators. This underscores the necessity of continuous resource evaluation and training enhancements to maintain and improve their expertise.

4.1.3 Recommendations

1. Based on the findings of this study, several important recommendations are put forward to help improve both the competency of SOCO investigators and the availability of necessary resources during crime scene investigations. First and foremost, there is a need to further develop the skills and preparedness of investigators, particularly as they approach and begin work at a crime scene. Investigators should be made to feel fully equipped and supported, both physically and mentally, to assess the situation, conduct walkthroughs, and begin evidence handling with care and confidence. Sufficient time and structured guidelines should be provided to help them observe the scene thoroughly and determine the proper way to document and collect evidence without the risk of contamination.

2. Another key point is the importance of accuracy in documentation. Investigators should be consistently trained and reminded to properly describe, label, and match every piece of evidence to their reports. They should also follow a systematic search plan and be encouraged to double-check all collected materials before completing the operation. Teamwork and idea-sharing among

investigators should be promoted to strengthen coordination and improve outcomes at every scene.

3. In terms of resources, it's clear that while many tools are available, improvements can still be made. Investigators must have access to the right tools for crime scene mapping, sketching, and documenting—whether it's traditional graph paper or more modern digital software. They should also be equipped with reliable devices for evidence detection, high-quality collection gear, and protective equipment to maintain safety and evidence integrity. Modernization in these areas will reduce inefficiencies and ensure smoother field operations.

4. Regarding performance evaluations, it is recommended that SOCO investigators participate in regular training and assessment programs. These programs will allow for continuous improvement and ensure that the standards reflected in their Individual Performance Evaluation Rating (IPER) remain high.

5. The study also revealed a strong link between investigator performance and the availability of adequate resources. With this in mind, it is vital to invest in tools and equipment that directly enhance performance—especially in areas like documentation where some gaps remain. By addressing these needs, the overall quality and reliability of crime scene investigations can improve significantly.

6. Finally, the operational challenges that investigators face—including outdated tools, limited funding, and transportation issues—must be addressed. It is recommended that additional budget allocation be considered, particularly for advanced forensic technologies, essential chemicals, and vehicle maintenance. An intervention program should also be introduced. This program should focus

on modernizing forensic practices, enhancing training, ensuring better access to resources, and implementing reforms that respond to real challenges observed in the field.

Together, these recommendations aim to elevate the performance of SOCO investigators, strengthen the effectiveness of crime scene investigations, and ultimately support the broader goals of justice, safety, and public trust.

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Appendix A
Letter to the Dean of Graduate School

March 6, 2025

Jezreel B. Vicente, PhD
Dean, Graduate School
Philippine College of Criminology
641 Sales St., Sta Cruz, Manila

Dear **Dean Vicente**:

A pleasant day.

The undersigned is a student of Doctor of Philosophy in Criminal Justice and is currently writing a dissertation entitled **SOCO Investigators' Competencies: A Framework for Best Practices**. I had my dissertation proposal defense last December 20, 2024. The members of the dissertation examination committee approved my proposal paper last March 4, 2025.

In this regard, may I ask permission from your office to commence the data gathering? Upon the approval of your office of this letter, I will write a letter to the concerned key personalities to coordinate the data gathering.

Thank you.

Respectfully yours,

Mr. Robert Balibat Momo
Researcher

Noted by:

Paulo Lumanlan, PhD
Adviser

Approved:

Jezreel B. Vicente, PhD
Dean

Appendix B
Letter to the Chief, Eastern Police District Forensic Unit

March 6, 2025

PLTCOL MARIANNE S EBDANE
Chief, EPDFU
Nueve De Pebrero Street
Brgy. Mauway, Mandaluyong City

Dear **PLTCOL EBDANE**:

The undersigned is a student of Doctor of Philosophy in Criminal Justice and is currently writing a dissertation entitled **SOCO Investigators' Competencies: A Framework for Best Practices** as the terminal requirement to finish the degree. The purpose of this research is to know the level of competencies and best practices of the SOCO Investigators and Supervisors assigned to the Eastern Police District Forensic Unit.

Relative to this research, may I ask permission from your good office for me to administer the questionnaires, conduct interviews with selected personnel, and request documents needed for my research? Rest assured that I will abide by the rules of ethics of research and be bound by the rules of confidentiality as I gather the data. I will only use the data for research purposes. I will furnish you with a copy of my research after my final defense.

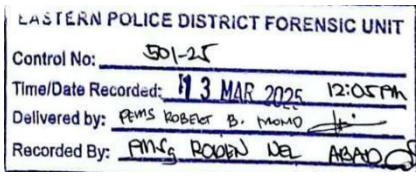
Thank you.

Respectfully yours,

Mr. Robert Balibat Momo
Researcher

Noted by:

Paulo Lumanlan, PhD
Adviser



Approved:

Jezreel B. Vicente, PhD
Dean

Appendix C
Letter to the Research Participants

March 6, 2025

Dear **Sir/Madam**:

The undersigned is a student of Doctor of Philosophy in Criminal Justice and is currently writing a dissertation entitled **SOCO Investigators' Competencies: A Framework for Best Practices** as the terminal requirement to finish the degree. The purpose of this research is to know the level of competencies and best practices of the SOCO Investigators and Supervisors assigned to the Eastern Police District Forensic Unit.

In this regard, may I request you to answer the attached questionnaire/interview guide questions about my study? Rest assured that the data collected will be used solely for this research without compromising the confidentiality and integrity of the agency you represent.

You have the right to refuse to participate in this research study. Also, you have the right to withdraw the information you provided to the researcher. Should you want to withdraw, you can email the author at robertpulis1@gmail.com or the adviser, paolo.lumanlan@pccr.edu.ph.

Thank you.

Respectfully yours,

Robert Balibat Momo
Researcher

Noted by:

Paulo Lumanlan, PhD
Adviser

Approved:

Jezreel B. Vicente, PhD
Dean

Appendix D
Letter to the Tool Validator

March 6, 2025

Kerwin F. Bartolome, PhD
Program Chair
Philippine College of Criminology
Graduate Studies

Dear **Dr. Bartolome**:

The undersigned is a student of Doctor of Philosophy in Criminal Justice and is currently writing a dissertation entitled **SOCO Investigators' Competencies: A Framework for Best Practices** as the terminal requirement to finish the degree. The purpose of this research is to know the level of competencies and best practices of the SOCO Investigators and Supervisors assigned at Eastern Police District Forensic Unit.

Considering your expertise about the study, the undersigned is seeking your assistance to serve as validator of the research instrument to be used.

Please check the attached instrument/s.

Thank you.

Respectfully yours,

Robert Balibat Momo
Researcher

Noted by:

Paulo Lumanlan, PhD
Adviser

Approved:

Jezreel B. Vicente, PhD
Dean

Letter to the Tool Validator

March 6, 2025

Melina G. Gabon, PhD
PRBS, Camp Crame
Quezon, City

Dear Ma'am:

The undersigned is a student of Doctor of Philosophy in Criminal Justice and is currently writing a dissertation entitled **SOCO Investigators' Competencies: A Framework for Best Practices** as the terminal requirement to finish the degree. The purpose of this research is to know the level of competencies and best practices of the SOCO Investigators and Supervisors assigned at Eastern Police District Forensic Unit.

Considering your expertise about the study, the undersigned is seeking your assistance to serve as validator of the research instrument to be used.

Please check the attached instrument/s.

Thank you.

Respectfully yours,

Robert Balibat Momo
Researcher

Noted by:

Paulo Lumanlan, PhD
Adviser

Approved:

Jezreel B. Vicente, PhD
Dean

Letter to the Tool Validator

March 19, 2025

Sigfredo G. Dimalanta, PhD
Commission on Appointments
Roxas Blvd, Brgy 1, Pasay City

Dear **Dr. Dimalanta**:

The undersigned is a student of Doctor of Philosophy in Criminal Justice and is currently writing a dissertation entitled **SOCO Investigators' Competencies: A Framework for Best Practices** as the terminal requirement to finish the degree. The purpose of this research is to know the level of competencies and best practices of the SOCO Investigators and Supervisors assigned at Eastern Police District Forensic Unit.

Considering your expertise about the study, the undersigned is seeking your assistance to serve as validator of the research instrument to be used.

Please check the attached instrument/s.

Thank you.

Respectfully yours,

Robert Balibat Momo
Researcher

Noted by:

Paolo Lumanlan, PhD
Adviser

Approved:

Jezreel B. Vicente, PhD
Dean

Appendix E
Research Instrument/s

Questionnaire for SOCO Investigator and Supervisor

Part I. For each question, choose the answer that best describes you. If applicable, check the box next to your answer.

1. **Type of Respondents**
   - ☐ SOCO Investigator
   - ☐ Supervisor

2. **Age (years): _____**

3. **Sex**
   - ☐ Male
   - ☐ Female
   - ☐ Prefer not to say

4. **Highest Educational Attainment**
   - ☐ College
   - ☐ Postgraduate (Masters'/Doctoral)

5. **for Supervisor only**
   How many years have you been working as supervisor/key personnel in the EPD Forensic Unit?

   _____ *years*

6. **for SOCO Investigator only**
   How many years of experience do you have as a SOCO investigator?

   _____years

7. **for SOCO Investigator only**
   Latest IPER Rating: _____

Part II. for SOCO Investigators and Supervisor

Competencies of SOCO Investigators in the Eastern Police District Forensic Unit (EPDFU)

Instructions: Please indicate the level of competency of SOCO investigators in the following areas by selecting the number that best reflects your evaluation.

Scale Description

5 – Expert: Fully capable of performing the task independently with a high degree of accuracy and can train others.

4 – Proficient: Can perform the task independently with minimal supervision, but may require occasional guidance.

3 – Competent: Can perform the task with supervision or assistance, demonstrating a basic level of competency.

2 – Developing: Requires training and significant supervision to properly complete the task.

1 – Novice: No experience or capability in performing the task; requires full training and oversight.

Competency Assessment Statements	N (1)	D (2)	C (3)	P (4)	E (5)
A. Crime Scene Approach					
1. I/The Investigator am/is able to independently evaluate team safety, analyze adverse ground conditions, and assess weather factors before entering the crime scene.					
2. I/The Investigator am/is able to properly establish the staging area and coordinate effectively with the Investigator-on-Case (IOC) upon arrival at the crime scene.					
3. Through photography or videography, I/The Investigator has the capability of making instant records and documentation of crime scene conditions.					
4. Through correct utilization of Personal Protective Equipment (PPE) I/The Investigator can successfully perform a comprehensive search and collection task.					

Competency Assessment Statements	N (1)	D (2)	C (3)	P (4)	E (5)
5. I/The Investigator am/is able to systematically identify and properly document discarded evidence during crime scene processing.					
B. Preliminary Crime Scene Survey					
1. I/The Investigator am/is able to conduct an initial walkthrough to determine the scope of the crime scene and assess necessary resources.					
2. I/The Investigator am/is able to identify potential hazards and implement control measures before processing the crime scene.					
3. I/The Investigator am/is able to establish primary and secondary crime scene boundaries based on initial observations.					
4. I/The Investigator am/is able to coordinate with first responders and obtain preliminary statements relevant to the crime scene investigation.					
5. I/The Investigator am/is able to determine the initial sequence of crime scene processing based on available evidence.					
C. Physical Evidence Assessment					
1. I/The Investigator am/is able to identify and categorize different types of physical evidence present at the crime scene.					
2. I/The Investigator am/is able to evaluate the forensic significance of each piece of evidence and determine priority collection.					
3. I/The Investigator am/is able to apply proper collection techniques for biological, chemical, and trace evidence.					
4. I/The Investigator am/is able to ensure that fragile evidence is documented and collected with minimal contamination risk.					
5. I/The Investigator am/is able to determine the best method of preserving different types of evidence for forensic analysis.					
D. Narrative Description of the Scene					
1. I/The Investigator am/is able to provide a detailed written description of the crime scene, including environmental conditions.					
2. I/The Investigator am/is able to record the position, appearance, and condition of physical					

Competency Assessment Statements	N (1)	D (2)	C (3)	P (4)	E (5)
evidence before collection.					
3. I/The Investigator am/is able to accurately document victim and suspect positions with respect to physical evidence at the scene.					
4. I/The Investigator am/is able to incorporate initial witness statements into the crime scene narrative.					
5. I/The Investigator am/is able to ensure consistency between the crime scene narrative, sketches, and photographic documentation.					
E. Crime Scene Documentation					
1. I/The Investigator am/is able to systematically photograph and sketch the crime scene before evidence collection.					
2. I/The Investigator am/is able to ensure all documentation corresponds with forensic reports and case files.					
3. I/The Investigator am/is able to properly label, index, and store crime scene photographs and sketches.					
4. I/The Investigator am/is able to apply the correct procedures for generating written crime scene reports.					
5. I/The Investigator am/is able to validate crime scene documentation through peer review or secondary analysis.					
F. Crime Scene Search					
1. I/The Investigator am/is able to determine the most effective crime scene search method based on the scene's characteristics.					
2. I/The Investigator am/is able to conduct a systematic crime scene search while minimizing contamination risks.					
3. I/The Investigator am/is able to ensure all evidence is located, properly marked, and documented during the search.					
4. I/The Investigator am/is able to ensure chain of custody protocols are maintained while handling evidence.					
5. I/The Investigator am/is able to conclude searches effectively and secure the scene for forensic analysis.					

Competency Assessment Statements	N (1)	D (2)	C (3)	P (4)	E (5)
G. Physical Evidence Recording and Collection					
1. I/The Investigator am/is able to tag, label, and record all physical evidence in accordance with standard forensic protocols.					
2. I/The Investigator am/is able to ensure proper documentation of evidence, including time, date, and location of collection.					
3. I/The Investigator am/is able to select appropriate packaging for different types of physical evidence to prevent contamination.					
4. I/The Investigator am/is able to verify that all collected evidence is properly stored and prepared for forensic analysis.					
5. I/The Investigator am/is able to maintain accurate chain of custody records for all evidence collected.					
H. Final Crime Scene Survey					
1. I/The Investigator am/is able to conduct a final walkthrough of the crime scene to verify that all evidence has been documented and collected.					
2. I/The Investigator am/is able to confirm that all scene documentation, including photographs and sketches, are complete and accurate.					
3. I/The Investigator am/is able to identify any overlooked evidence before releasing the scene.					
4. I/The Investigator am/is able to ensure that all evidence packaging is properly sealed and labeled for transport.					
5. I/The Investigator am/is able to complete final documentation and formally release the crime scene in coordination with the Investigator-on-Case.					
I. Post Crime Scene Processing					
1. I/The Investigator am/is able to properly log and document the transfer of evidence to forensic laboratories.					
2. I/The Investigator am/is able to submit preliminary findings and case notes to superiors for assessment.					
3. I/The Investigator am/is able to participate in debriefing sessions to discuss observed					

Competency Assessment Statements	N (1)	D (2)	C (3)	P (4)	E (5)
challenges and encountered difficulties.					
4. I/The Investigator am/is able to ensure proper maintenance of evidence storage areas in accordance with forensic preservation requirements.					
5. I/The Investigator am/is able to follow established procedures when handing over control of the crime scene to authorized authorities.					
J. Case Conference					
1. I/The Investigator am/is able to present evidence reports and findings to forensic experts and investigators.					
2. I/The Investigator am/is able to actively contribute to crime scene analysis sessions to establish connections between different cases.					
3. I/The Investigator am/is able to review crime scene documentation and witness testimonies throughout the conference.					
4. I/The Investigator am/is able to provide recommendations for additional forensic tests when necessary.					
5. I/The Investigator am/is able to properly document every resolution point and discussion outcome from the case conference.					

*Items are based on the Revised Crime Laboratory Scene of Crime Operations Manual

Part III. for SOCO Investigators and Supervisor only
Accessibility and Adequacy of Resources and Tools Available to EPD SOCO Investigators

Scale for Evaluating Accessibility and Adequacy of Resources

4 - Highly Accessible & Adequate - The resource/tool is fully available, functional, and meets all operational needs without any limitation.

3 - Accessible & Adequate - The resource/tool is generally available and functional but may have minor limitations in quantity or condition.

2 - Limited Accessibility & Adequacy - The resource/tool is insufficient or requires significant improvements to be functional.

1 - Not Accessible & Inadequate - The resource/tool is unavailable or completely inadequate.

Evaluation of Resources and Tools for SOCO Investigators*	**NAI (1)**	**LAI (2)**	**AA (3)**	**HAA (4)**
2.1. Crime Scene Processing Specific Procedures				
1. I/The Investigator am/is able placed crime scene barriers (police line tape, cones, barricades).				
2. I/The Investigator am/is able produced portable lighting systems for low-visibility scenes.				
3. I/The Investigator am/is able used forensic kits (fingerprinting kits, blood detection kits, gunshot residue kits).				
4. I/The Investigator am/is able to utilized mark vehicle for transportation of SOCO investigators (crime scene response vehicles).				
5. I/The Investigator am/is able to placed crime scene evidence markers.				
6. I/The Investigator am/is able to provide emergency response tools (first-aid kits, decontamination stations)				
7. I/The Investigator am/is able to used digital devices for evidence capture (body-worn cameras, handheld devices for notes).				
8. I/The Investigator am/is able to properly used communication devices (radios, mobile phones, satellite phones).				
9. I/The Investigator am/is able produced crime scene reference guides and procedural checklists.				
10. I/The Investigator am/is able to performed case conference after conducting crime scene.				
2.2. Crime Scene Documentation Procedure				
1. I/The Investigator am/is able provide crime scene sketching tools (graphing paper, digital sketching software).				
2. I/The Investigator am/is able provide photographic documentation equipment (DSLR cameras, macro lenses, tripods).				
3. I/The Investigator am/is able to performed video recording devices for continuous documentation.				
4. I/The Investigator am/is able create automated				

Evaluation of Resources and Tools for SOCO Investigators*	NAI (1)	LAI (2)	AA (3)	HAA (4)
evidence logging systems (barcode scanners, electronic databases).				
5. I/The Investigator am/is able performed evidence inventory sheets and logbooks.				
6. I/The Investigator am/is able provide high-resolution scanning or digital imaging tools				
7. I/The Investigator am/is able to produced weather-resistant documentation materials (waterproof notebooks, ink pens)				
8. I/The Investigator am/is able performed drones or overhead cameras for aerial documentation.				
9. I/The Investigator am/is able to used standardized templates for crime scene documentation.				
10. I/The Investigator am/is able provide data storage devices for digital documentation (external hard drives, cloud storage).				
2.3. Crime Scene Search Procedure				
1. I/The Investigator am/is able to performed search pattern templates (grid, spiral, zone, strip search guides)				
2. I/The Investigator am/is able to placed metal detectors and ground-penetrating radar for hidden evidence				
3. I/The Investigator am/is able to used thermal imaging or night vision tools for low-light conditions.				
4. I/The Investigator am/is able to cooperated to K9 forensic units for evidence search assistance.				
5. I/The Investigator am/is able used magnification tools for small evidence detection.				
6. I/The Investigator am/is able used UV light and forensic alternate light sources (ALS).				
7. I/The Investigator am/is able provide swab kits for trace evidence collection.				
8. I/The Investigator am/is able used mapping and survey equipment for accurate scene measurements.				
9. I/The Investigator am/is able provide decontamination kits for biological hazard searches				
10. I/The Investigator am/is able placed protective barriers to prevent cross-contamination during searches.				
2.4. Evidence Collection Tools and Equipment				
1. I/The Investigator am/is able provide evidence				

Evaluation of Resources and Tools for SOCO Investigators*	NAI (1)	LAI (2)	AA (3)	HAA (4)
collection bags and containers (paper bags, plastic vials, rigid boxes)				
2. I/The Investigator am/is able provide DNA collection kits (buccal swabs, sterile gloves, FTA cards).				
3. I/The Investigator am/is able Latent fingerprint development kits (dusting powders, cyanoacrylate fuming chambers)				
4. I/The Investigator am/is able used ballistics evidence kits (bullet trajectory rods, comparison microscopes)				
5. I/The Investigator am/is able to provide biological evidence preservation tools (refrigerated storage, transport coolers)				
6. I/The Investigator am/is able used adhesive lifters and gelatin lifters for trace evidence.				
7. I/The Investigator am/is able used electrostatic dust print lifters.				
8. I/The Investigator am/is able provide drug testing and toxicology kits.				
9. I/The Investigator am/is able provide fire debris collection kits (arson accelerant detection kits)				
10. I/The Investigator am/is able to used documentation materials for evidence labeling and chain of custody tracking.				

*Items are based on the Revised Crime Laboratory Scene of Crime Operations Manual

Interview Guide Questions

1. What other challenges do you generally face as a SOCO investigator?

2. Please describe your process for solving these operational challenges during your normal work activities.

3. Which types of assistance together with needed training and support systems would best help resolve these current problems?

Appendix F
CERTIFICATION BY THE TOOL VALIDATOR

This is to certify that I have reviewed and validated the tools used in the conduct of the dissertation:

Title	**SOCO Investigators' Competencies: A Framework for Best Practices**
Author	**Mr. Robert B. Momo**
Program	**Doctor of Philosophy in Criminology**
Adviser	**Dr. Paolo T. Lumanlan**
Institution	**Philippine College of Criminology**

The Undersigned certifies that the instrument in the study was carefully evaluated and validated. The Undersigned ensured that the items are reliable and valid measures of the constructs they were intended to measure, the questions are clear, concise, and easy to understand for the target population.

Issued this 12th day of March 2025 in the City of Manila.

Kerwin F. Bartolome, PhD
Tool Validator

CERTIFICATION BY THE TOOL VALIDATOR

This is to certify that I have reviewed and validated the tools used in the conduct of the dissertation:

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Issued this 12th day of March 2025 in the City of Manila.

Melina G. Gabon, PhD., PD., CSP
Tool Validator

CERTIFICATION BY THE TOOL VALIDATOR

This is to certify that I have reviewed and validated the tools used in the conduct of the dissertation:

Title	**SOCO Investigators' Competencies: A Framework for Best Practices**
Author	**Mr. Robert B. Momo**
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Adviser	**Dr. Paolo T. Lumanlan**
Institution	**Philippine College of Criminology**

The Undersigned certifies that the instrument in the study was carefully evaluated and validated. The Undersigned ensured that the items are reliable and valid measures of the constructs they were intended to measure, the questions are clear, concise, and easy to understand for the target population.

Issued this 20th day of March 2025 in the City of Manila.

Sigfredo G. Dimalanta, PhD
Tool Validator

Appendix G
Informed Consent Form

Introduction. You are invited to participate in this research study with the details provided in the table. Your participation is voluntary, and you are free to withdraw at any time without penalty. This form explains the nature of the study and the procedures that will be followed. Please read this form carefully and ask any questions you may have before deciding whether or not to participate.

Title	**SOCO Investigators' Competencies: A Framework for Best Practices**
Author	**Mr. Robert B. Momo**
Program	**Doctor of Philosophy in Criminology**
Adviser	**Dr. Paolo T. Lumanlan**
Institution	**Philippine College of Criminology**

Confidentiality. All answers that you will provide the researcher will be treated with utmost confidentiality. Your responses will be used for this study only. The data shall be destroyed by the researcher after the study is completed and defended.

Voluntary Participation. Participation in this study is voluntary. You have the right to withdraw from the study at any time without penalty. Refusal to participate or withdrawal from the study is allowed.

Contact Information. If you have any questions about the study, please feel free to contact the author at email address robertpulis1@gmail.com or adviser paulo.lumanlan@pccr.edu.ph named above.

Consent. I have read and understood the above information and have been given the opportunity to consider and ask questions regarding my involvement in this study. I have spoken directly to the author of this study who answered to my satisfaction all my questions. I have received a copy of this Participant's Information and Informed Consent Form. I hereby voluntarily agree to participate in this study.

<signature>
Firstname Middlename Surname
<date>

Appendix H

VALIDITY ANALYSIS ON VARIOUS FACTORS Using Aiken's V

Factors	*K (No. of items)*	Aiken's V Coefficient	*Interpretation*
A. Competency Assessment Statements			
Crime Scene Approach	5	0.9111	Very Valid
Preliminary Crime Scene Survey	5	0.8118	Valid
Physical Evidence Assessment	5	0.8444	Valid
Narrative Description of the Scene	5	0.9333	Very Valid
Crime Scene Documentation	5	0.9556	Very Valid
Crime Scene Search	5	0.8222	Valid
Physical Evidence Recording and Collection	5	0.9111	Very Valid
Final Crime Scene Survey	5	0.9778	Very Valid
Post Crime Scene Processing	5	0.8000	Valid
Case Conference	5	0.7556	Acceptable
B. Evaluation of Resources and Tools for SOCO Investigators			
Crime Scene Processing Specific Procedures	10	0.7778	Acceptable
Crime Scene Documentation Procedures	10	0.7111	Acceptable
Crime Scene Search Procedure	10	0.7000	Acceptable
Evidence Collection of Resources and Tools for SOCO Investigators	10	0.8000	Valid

Roy G. Revilla
Research Consultant and Statistician

Appendix I

RELIABILITY ANALYSIS ON VARIOUS FACTORS Using Cronbach Alpha

Factors	*K (No. of items)*	Cronbach *A*	*Interpretation*
A. Competency Assessment Statements			
Crime Scene Approach	5	0.972	Very Reliable
Preliminary Crime Scene Survey	5	0.953	Very Reliable
Physical Evidence Assessment	5	0.944	Very Reliable
Narrative Description of the Scene	5	0.910	Very Reliable
Crime Scene Documentation	5	0.771	Acceptable
Crime Scene Search	5	0.946	Very Reliable
Physical Evidence Recording and Collection	5	0.946	Very Reliable
Final Crime Scene Survey	5	0.954	Very Reliable
Post Crime Scene Processing	5	0.811	Reliable
Case Conference	5	0.912	Very Reliable
B. Evaluation of Resources and Tools for SOCO Investigators			
Crime Scene Processing Specific Procedures	10	0.757	Acceptable
Crime Scene Documentation Procedures	10	0.917	Very Reliable
Crime Scene Search Procedure	10	0.744	Acceptable
Evidence Collection of Resources and Tools for SOCO Investigators	10	0.700	Acceptable

Roy G. Revilla
Research Consultant and Statistician

Appendix J

Test of Homogeneity

1. Test of Normality for Crime Scene Approach

Independent Samples Test			
		Levene's Test for Equality of Variances	
		F	Sig.
CSA1	Equal variances assumed	37.565	0.000
	Equal variances not assumed		
CSA2	Equal variances assumed	35.762	0.000
	Equal variances not assumed		
CSA3	Equal variances assumed	22.244	0.000
	Equal variances not assumed		
CSA4	Equal variances assumed	19.719	0.000
	Equal variances not assumed		
CSA5	Equal variances assumed	34.434	0.000
	Equal variances not assumed		

2. Test of Normality for Preliminary Crime Survey.

Independent Samples Test			
		Levene's Test for Equality of Variances	
		F	Sig.
PCS1	Equal variances assumed	37.565	0.000
	Equal variances not assumed		
PCS2	Equal variances assumed	15.414	0.000
	Equal variances not assumed		
PCS3	Equal variances assumed	5.462	0.022
	Equal variances not assumed		
PCS4	Equal variances assumed	19.719	0.000
	Equal variances not assumed		
PCS5	Equal variances assumed	19.719	0.000
	Equal variances not assumed		

3. Physical Evidence Assessment;

Independent Samples Test			
		Levene's Test for Equality of Variances	
		F	Sig.
PEA1	Equal variances assumed	29.733	0.000
	Equal variances not assumed		
PEA2	Equal variances assumed	38.859	0.000
	Equal variances not assumed		
PEA3	Equal variances assumed	19.719	0.000
	Equal variances not assumed		
PEA4	Equal variances assumed	17.872	0.000
	Equal variances not assumed		
PEA5	Equal variances assumed	12.020	0.001
	Equal variances not assumed		

4. Narrative Description of The Scene

Independent Samples Test			
		Levene's Test for Equality of Variances	
		F	Sig.
NDS1	Equal variances assumed	25.251	0.000
	Equal variances not assumed		
NDS2	Equal variances assumed	18.425	0.000
	Equal variances not assumed		
NDS3	Equal variances assumed	34.434	0.000
	Equal variances not assumed		
NDS4	Equal variances assumed	38.859	0.000
	Equal variances not assumed		
NDS5	Equal variances assumed	35.692	0.000
	Equal variances not assumed		

5. Crime Scene Documentation

Independent Samples Test			
		Levene's Test for Equality of Variances	
		F	Sig.
CSD1	Equal variances assumed	21.645	0.000
	Equal variances not assumed		
CSD2	Equal variances assumed	35.692	0.000
	Equal variances not assumed		
CSD3	Equal variances assumed	10.778	0.002
	Equal variances not assumed		
CSD4	Equal variances assumed	6.431	0.013
	Equal variances not assumed		
CSD5	Equal variances assumed	21.213	0.000
	Equal variances not assumed		

6. Crime Scene Search

Independent Samples Test			
		Levene's Test for Equality of Variances	
		F	Sig.
CSS1	Equal variances assumed	14.639	0.000
	Equal variances not assumed		
CSS2	Equal variances assumed	21.645	0.000
	Equal variances not assumed		
CSS3	Equal variances assumed	10.778	0.002
	Equal variances not assumed		
CSS4	Equal variances assumed	17.872	0.000
	Equal variances not assumed		
CSS5	Equal variances assumed	11.946	0.001
	Equal variances not assumed		

7. Physical Evidence Recording and Collection

Independent Samples Test			
		Levene's Test for Equality of Variances	
		F	Sig.
PER1	Equal variances assumed	29.733	0.000
	Equal variances not assumed		
PER2	Equal variances assumed	32.640	0.000
	Equal variances not assumed		
PER3	Equal variances assumed	29.733	0.000
	Equal variances not assumed		
PER4	Equal variances assumed	17.872	0.000
	Equal variances not assumed		
PER5	Equal variances assumed	31.439	0.000
	Equal variances not assumed		

8. Final Crime Scene Survey

Independent Samples Test			
		Levene's Test for Equality of Variances	
		F	Sig.
FCS1	Equal variances assumed	21.264	0.000
	Equal variances not assumed		
FCS2	Equal variances assumed	25.635	0.000
	Equal variances not assumed		
FCS3	Equal variances assumed	4.674	0.034
	Equal variances not assumed		
FCS4	Equal variances assumed	14.610	0.000
	Equal variances not assumed		
FCS5	Equal variances assumed	40.727	0.000
	Equal variances not assumed		

9. Post Crime Scene Processing

Independent Samples Test			
		Levene's Test for Equality of Variances	
		F	Sig.
PCSP1	Equal variances assumed	14.610	0.000
	Equal variances not assumed		
PCSP2	Equal variances assumed	22.848	0.000
	Equal variances not assumed		
PCSP3	Equal variances assumed	28.635	0.000
	Equal variances not assumed		
PCSP4	Equal variances assumed	31.439	0.000
	Equal variances not assumed		
PCSP5	Equal variances assumed	18.042	0.000
	Equal variances not assumed		

10. Case Conference

Independent Samples Test			
		Levene's Test for Equality of Variances	
		F	Sig.
CC1	Equal variances assumed	35.692	0.000
	Equal variances not assumed		
CC2	Equal variances assumed	44.088	0.000
	Equal variances not assumed		
CC3	Equal variances assumed	44.088	0.000
	Equal variances not assumed		
CC4	Equal variances assumed	28.635	0.000
	Equal variances not assumed		
CC5	Equal variances assumed	26.988	0.000
	Equal variances not assumed		

11. Crime Scene Processing Specific Procedures

Independent Samples Test			
		Levene's Test for Equality of Variances	
		F	Sig.
CSPS1	Equal variances assumed	4.527	**0.037**
	Equal variances not assumed		
CSPS2	Equal variances assumed	0.459	**0.500**
	Equal variances not assumed		
CSPS3	Equal variances assumed	3.963	**0.050**
	Equal variances not assumed		
CSPS4	Equal variances assumed	0.136	**0.713**
	Equal variances not assumed		
CSPS5	Equal variances assumed	17.498	**0.000**
	Equal variances not assumed		
CSPS6	Equal variances assumed	0.596	**0.443**
	Equal variances not assumed		
CSPS7	Equal variances assumed	0.541	**0.464**
	Equal variances not assumed		
CSPS8	Equal variances assumed	6.733	**0.011**
	Equal variances not assumed		
CSPS9	Equal variances assumed	4.645	**0.034**
	Equal variances not assumed		
CSPS10	Equal variances assumed	24.070	**0.000**
	Equal variances not assumed		

12. Crime Scene Documentation Procedures

Independent Samples Test			
		Levene's Test for Equality of Variances	
		F	Sig.
CSDP1	Equal variances assumed	10.346	**0.002**
	Equal variances not assumed		
CSDP2	Equal variances assumed	16.753	**0.000**
	Equal variances not assumed		
CSDP3	Equal variances assumed	26.057	**0.000**
	Equal variances not assumed		
CSDP4	Equal variances assumed	20.931	**0.000**
	Equal variances not assumed		
CSDP5	Equal variances assumed	12.642	**0.001**
	Equal variances not assumed		
CSDP6	Equal variances assumed	18.469	**0.000**
	Equal variances not assumed		
CSDP7	Equal variances assumed	5.426	**0.023**
	Equal variances not assumed		
CSDP8	Equal variances assumed	24.101	**0.000**
	Equal variances not assumed		
CSDP9	Equal variances assumed	5.527	**0.021**
	Equal variances not assumed		
CSDP10	Equal variances assumed	4.338	**0.041**
	Equal variances not assumed		

13. Crime Scene Search Procedure

Independent Samples Test			
		Levene's Test for Equality of Variances	
		F	Sig.
CSSP1	Equal variances assumed	18.649	**0.000**
	Equal variances not assumed		
CSSP2	Equal variances assumed	5.263	**0.025**
	Equal variances not assumed		
CSSP3	Equal variances assumed	44.729	**0.000**
	Equal variances not assumed		
CSSP4	Equal variances assumed	11.010	**0.001**
	Equal variances not assumed		
CSSP5	Equal variances assumed	2.522	**0.117**
	Equal variances not assumed		
CSSP6	Equal variances assumed	2.209	**0.141**
	Equal variances not assumed		
CSSP7	Equal variances assumed	6.135	**0.016**
	Equal variances not assumed		
CSSP8	Equal variances assumed	0.127	**0.723**
	Equal variances not assumed		
CSSP9	Equal variances assumed	8.625	**0.004**
	Equal variances not assumed		
CSSP10	Equal variances assumed	0.311	**0.579**
	Equal variances not assumed		

14. Evidence Collection of Resources and Tools for SOCO Investigators

Independent Samples Test			
		Levene's Test for Equality of Variances	
		F	Sig.
ECTE1	Equal variances assumed	7.321	0.008
	Equal variances not assumed		
ECTE2	Equal variances assumed	14.499	0.000
	Equal variances not assumed		
ECTE3	Equal variances assumed	59.944	0.000
	Equal variances not assumed		
ECTE4	Equal variances assumed	29.759	0.000
	Equal variances not assumed		
ECTE5	Equal variances assumed	5.318	0.024
	Equal variances not assumed		
ECTE6	Equal variances assumed	4.755	0.032
	Equal variances not assumed		
ECTE7	Equal variances assumed	5.651	0.020
	Equal variances not assumed		
ECTE8	Equal variances assumed	10.983	0.001
	Equal variances not assumed		
ECTE9	Equal variances assumed	14.188	0.000
	Equal variances not assumed		
ECTE10	Equal variances assumed	3.549	0.063
	Equal variances not assumed		

Appendix K

Test of Normality

1. Test of Normality for Crime Scene Approach

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
CSA1	0.470	76	0.000	0.531	76	0.000
CSA2	0.469	76	0.000	0.544	76	0.000
CSA3	0.453	76	0.000	0.567	76	0.000
CSA4	0.469	76	0.000	0.533	76	0.000
CSA5	0.477	76	0.000	0.514	76	0.000

a. Lilliefors Significance Correction

2. Test of Normality for Preliminary Crime Survey

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
PCS1	0.470	76	0.000	0.531	76	0.000
PCS2	0.434	76	0.000	0.604	76	0.000
PCS3	0.471	76	0.000	0.529	76	0.000
PCS4	0.469	76	0.000	0.533	76	0.000
PCS5	0.469	76	0.000	0.533	76	0.000

a. Lilliefors Significance Correction

3. Physical Evidence Assessment

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
PEA1	0.483	76	0.000	0.498	76	0.000
PEA2	0.462	76	0.000	0.549	76	0.000
PEA3	0.469	76	0.000	0.533	76	0.000
PEA4	0.476	76	0.000	0.516	76	0.000
PEA5	0.462	76	0.000	0.549	76	0.000

a. Lilliefors Significance Correction

4. Narrative Description of The Scene

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
NDS1	0.455	76	0.000	0.563	76	0.000
NDS2	0.468	76	0.000	0.535	76	0.000
NDS3	0.477	76	0.000	0.514	76	0.000
NDS4	0.462	76	0.000	0.549	76	0.000
NDS5	0.469	76	0.000	0.533	76	0.000

a. Lilliefors Significance Correction

5. Crime Scene Documentation

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
CSD1	0.462	76	0.000	0.549	76	0.000
CSD2	0.469	76	0.000	0.533	76	0.000
CSD3	0.469	76	0.000	0.533	76	0.000
CSD4	0.462	76	0.000	0.549	76	0.000
CSD5	0.470	76	0.000	0.531	76	0.000

a. Lilliefors Significance Correction

6. Crime Scene Search

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
CSS1	0.447	76	0.000	0.580	76	0.000
CSS2	0.462	76	0.000	0.549	76	0.000
CSS3	0.469	76	0.000	0.533	76	0.000
CSS4	0.476	76	0.000	0.516	76	0.000
CSS5	0.470	76	0.000	0.531	76	0.000

a. Lilliefors Significance Correction

7. Physical Evidence Recording and Collection

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
PER1	0.483	76	0.000	0.498	76	0.000
PER2	0.476	76	0.000	0.516	76	0.000
PER3	0.483	76	0.000	0.498	76	0.000
PER4	0.476	76	0.000	0.516	76	0.000
PER5	0.485	76	0.000	0.496	76	0.000

a. Lilliefors Significance Correction

8. Final Crime Scene Survey

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
FCS1	0.418	76	0.000	0.632	76	0.000
FCS2	0.447	76	0.000	0.580	76	0.000
FCS3	0.470	76	0.000	0.531	76	0.000
FCS4	0.455	76	0.000	0.563	76	0.000
FCS5	0.444	76	0.000	0.591	76	0.000

a. Lilliefors Significance Correction

9. Post Crime Scene Processing

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
PCSP1	0.455	76	0.000	0.563	76	0.000
PCSP2	0.452	76	0.000	0.577	76	0.000
PCSP3	0.482	76	0.000	0.511	76	0.000
PCSP4	0.485	76	0.000	0.496	76	0.000
PCSP5	0.475	76	0.000	0.528	76	0.000

a. Lilliefors Significance Correction

10. Case Conference

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
CC1	0.469	76	0.000	0.533	76	0.000
CC2	0.455	76	0.000	0.563	76	0.000
CC3	0.455	76	0.000	0.563	76	0.000
CC4	0.482	76	0.000	0.511	76	0.000
CC5	0.491	76	0.000	0.480	76	0.000
a. Lilliefors Significance Correction						

11. Crime Scene Processing Specific Procedures

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
CSPS1	0.508	76	0.000	0.432	76	0.000
CSPS2	0.455	76	0.000	0.576	76	0.000
CSPS3	0.438	76	0.000	0.607	76	0.000
CSPS4	0.492	76	0.000	0.490	76	0.000
CSPS5	0.508	76	0.000	0.432	76	0.000
CSPS6	0.500	76	0.000	0.452	76	0.000
CSPS7	0.468	76	0.000	0.551	76	0.000
CSPS8	0.451	76	0.000	0.583	76	0.000
CSPS9	0.474	76	0.000	0.537	76	0.000
CSPS10	0.497	76	0.000	0.472	76	0.000
a. Lilliefors Significance Correction						

12. Crime Scene Documentation Procedures

Tests of Normality						
	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
CSDP1	0.419	76	0.000	0.611	76	0.000
CSDP2	0.399	76	0.000	0.674	76	0.000
CSDP3	0.387	76	0.000	0.714	76	0.000
CSDP4	0.382	76	0.000	0.706	76	0.000
CSDP5	0.421	76	0.000	0.606	76	0.000
CSDP6	0.446	76	0.000	0.566	76	0.000
CSDP7	0.427	76	0.000	0.589	76	0.000
CSDP8	0.390	76	0.000	0.658	76	0.000
CSDP9	0.455	76	0.000	0.576	76	0.000
CSDP10	0.446	76	0.000	0.560	76	0.000
a. Lilliefors Significance Correction						

13. Crime Scene Search Procedure

Tests of Normality						
	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
CSSP1	0.468	76	0.000	0.551	76	0.000
CSSP2	0.422	76	0.000	0.632	76	0.000
CSSP3	0.392	76	0.000	0.661	76	0.000
CSSP4	0.342	76	0.000	0.738	76	0.000
CSSP5	0.424	76	0.000	0.626	76	0.000
CSSP6	0.470	76	0.000	0.542	76	0.000
CSSP7	0.464	76	0.000	0.556	76	0.000
CSSP8	0.447	76	0.000	0.552	76	0.000
CSSP9	0.440	76	0.000	0.588	76	0.000
CSSP10	0.470	76	0.000	0.542	76	0.000
a. Lilliefors Significance Correction						

14. Evidence Collection of Resources and Tools for SOCO Investigators

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
ECTE1	0.497	76	0.000	0.472	76	0.000
ECTE2	0.468	76	0.000	0.542	76	0.000
ECTE3	0.479	76	0.000	0.514	76	0.000
ECTE4	0.503	76	0.000	0.455	76	0.000
ECTE5	0.411	76	0.000	0.635	76	0.000
ECTE6	0.418	76	0.000	0.624	76	0.000
ECTE7	0.418	76	0.000	0.624	76	0.000
ECTE8	0.486	76	0.000	0.507	76	0.000
ECTE9	0.446	76	0.000	0.571	76	0.000
ECTE10	0.480	76	0.000	0.522	76	0.000

a. Lilliefors Significance Correction

Appendix L
Research Photo Documentation


POLICE
SOCO
SCENE OF CRIME OPERATIO
T E A M


Happy
Birthday
March
Babies!

Appendix M
Timeline and Logistics

Timeline	
Research Activity	**Target Date**
Background of the study	April 2024
Literature	May 2024
Theories and Philosophies	June 2024
Methodology	July 2024
Proposal defense	December 2024
Submission of revised study	February 2025
Data gathering	March 2025
Final Oral defense	May 2025
Submission of hardbound	August 2025
Logistics	
Projected Source of Expenses	**Amount**
Proposal defense	
Tool validation	
Data gathering	
Final oral defense	
English editing	
Format editing	
Hardbound	
Other expenses	
Total	

Appendix N

CERTIFICATION BY THE ENGLISH GRAMMAR EDITOR

This is to certify that the manuscript has been edited by the undersigned. The following issues have been corrected: grammar and syntax, spelling and word choice, punctation, clarity and coherence, conciseness, sentence structure, style and stone, and phrasing.

Title	**SOCO Investigators' Competencies: A Framework for Best Practices**
Author	**Mr. Robert B. Momo**
Program	**Doctor of Philosophy in Criminology**
Adviser	**Dr. Paolo T. Lumanlan**
Institution	**Philippine College of Criminology**

Issued this 8th day of August 2025 at Candon Ciy, Ilocos Sur.

Kathryn C. Kimpay, Ed. D.
Grammar Editor, NICOSAT Colleges, Inc.
Editor

Appendix O
CERTIFICATION BY THE FORMAT EDITOR

This is to certify that the manuscript has been edited by the undersigned. The following issues have been corrected: page layout and margins, font and size, headings and subheadings, tables and figures, references and in-text citations, appendices.

Title	**SOCO Investigators' Competencies: A Framework for Best Practices**
Author	**Mr. Robert B. Momo**
Program	**Doctor of Philosophy in Criminology**
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Institution	**Philippine College of Criminology**

Issued this 8th day of August 2025 at La Trinidad, Benguet.

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