

Forensic Capability and Investigative Performance of NBI Personnel in Iloilo City

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ABSTRACT

This study examined the capability and investigative performance of NBI personnel in Iloilo City. Specifically, it determined the demographic profile of the respondents in terms of age, sex, educational attainment, years in service, and rank/position; assessed the level of capability in terms of availability of forensic tools and infrastructure, training and expertise, and collaboration and support; and evaluated the level of investigative performance in terms of case resolution and quality, timeliness, and operational efficiency. The study also determined differences in capability and investigative performance when grouped according to demographic variables and examined the relationship between capability and investigative performance.

A quantitative descriptive-correlational research design was employed. Data were gathered from NBI personnel and analyzed using mean and standard deviation, Mann–Whitney U test, Kruskal–Wallis H test, and Spearman’s rho correlation.

The findings revealed that both capability and investigative performance were rated very high. No significant differences were found when grouped according to demographic variables, indicating consistency across respondent groups. Correlation analysis revealed a very strong positive and significant relationship between capability and investigative performance ($\rho = 0.81$, $p = 0.000$), suggesting that higher capability is strongly associated with higher investigative performance.

The study concluded that capability, particularly in terms of training and expertise, significantly contributes to investigative effectiveness among NBI personnel. It is recommended that the organization strengthen forensic infrastructure, professional development programs, inter-agency collaboration, and workflow optimization systems to sustain and further improve investigative outcomes.

INTRODUCTION

Background of the Study

Law enforcement agencies play a critical role in maintaining peace, order, and justice within society. Among these agencies, the National Bureau of Investigation (NBI) serves as one of the primary investigative institutions in the Philippines responsible for handling complex criminal investigations, forensic analysis, intelligence operations, and special cases requiring advanced investigative competence.

The effectiveness of investigative agencies depends heavily on the capability and performance of their personnel. Capability refers to the knowledge, technical skills, professional expertise, access to forensic tools, and collaborative support systems necessary for conducting investigations effectively. Investigative performance, on the other hand, pertains to personnel effectiveness in terms of case resolution, timeliness, operational efficiency, and quality of investigative outputs.

The increasing complexity of criminal activities, cybercrime, organized syndicates, and digital offenses has intensified the need for highly capable investigative personnel equipped with advanced forensic technologies and specialized training. According to Roux et al. (2022), modern investigative work increasingly relies on

technological innovation, forensic science, and multidisciplinary collaboration to improve case resolution and evidence analysis.

Training and expertise are also critical determinants of investigative performance. Continuous professional development ensures that investigators remain competent in emerging investigative methodologies, digital forensics, intelligence gathering, and evidence handling. Lum et al. (2017) emphasized that law enforcement performance is strongly influenced by personnel competence, institutional training systems, and access to technological resources.

Collaboration and inter-agency coordination are equally important in investigative work. Effective cooperation among law enforcement agencies improves information sharing, case handling efficiency, and operational coordination. Mastrofski and Willis (2019) noted that collaborative organizational structures significantly strengthen operational effectiveness and law enforcement performance.

Despite the importance of investigative capability, law enforcement agencies continue to encounter challenges related to technological limitations, resource constraints, workload pressures, and evolving criminal methodologies. These challenges necessitate continuous assessment of personnel capability and performance to ensure organizational effectiveness and public trust.

This study was conducted to determine the capability and investigative performance of NBI personnel in Iloilo City. The findings of the study may provide valuable insights for institutional policy development, capability enhancement programs, resource allocation, and operational improvement within investigative agencies.

THEORETICAL FRAMEWORK

This study is anchored on Competency Theory by Boyatzis (1982) and Organizational Capability Theory.

Competency Theory posits that effective performance is largely determined by an individual's competencies, including knowledge, technical expertise, skills, and behavioral attributes necessary for successful job execution. In investigative work, competencies directly influence the quality, efficiency, and accuracy of investigative outcomes.

Organizational Capability Theory emphasizes that institutional effectiveness depends on the organization's collective ability to utilize resources, systems, technologies, and human expertise to achieve operational goals. Capability development, technological support, and collaborative systems contribute significantly to organizational performance.

These theories support the assumption that personnel capability significantly influences investigative performance among NBI personnel in Iloilo City.

General Objective

To determine the capability and investigative performance of NBI personnel in Iloilo City.

Specific Objectives

1. To determine the demographic profile of respondents in terms of:
 - age;
 - sex;
 - educational attainment;
 - years in service; and
 - rank/position.
2. To determine the level of capability of NBI personnel in terms of:

- availability of forensic tools and infrastructure;
 - training and expertise; and
 - collaboration and support.
3. To determine the level of investigative performance of NBI personnel in terms of:
 - case resolution and quality;
 - timeliness; and
 - operational efficiency.
 4. To determine the significant differences in the level of capability when respondents are grouped according to demographic profile variables.
 5. To determine the significant differences in the level of investigative performance when respondents are grouped according to demographic profile variables.
 6. To determine the significant relationship between capability and investigative performance of NBI personnel in Iloilo City.
 7. To propose an intervention plan to enhance capability and investigative performance of NBI personnel in Iloilo City.

REVIEW OF RELATED LITERATURE AND STUDIES

Related Literature

Investigative capability is essential in ensuring effective law enforcement operations and successful criminal investigations. Capability encompasses technical expertise, investigative competence, access to forensic resources, and organizational support systems. Andrews et al. (2022) emphasized that organizational capability significantly affects institutional effectiveness and operational performance in public sector organizations.

Training and expertise remain among the most important determinants of investigative performance. Continuous professional development enhances investigators' technical competence, analytical skills, and ability to respond to evolving criminal activities. Lum et al. (2017) highlighted that law enforcement agencies with strong training systems generally demonstrate higher investigative efficiency and operational effectiveness.

Forensic tools and infrastructure also play a critical role in modern investigative work. Advances in forensic technologies significantly improve evidence gathering, analysis, and case resolution. Roux et al. (2022) explained that forensic science and technological innovation are increasingly central to effective criminal investigation.

Collaboration and inter-agency coordination strengthen investigative effectiveness by improving information sharing, operational efficiency, and case management. Mastrofski and Willis (2019) emphasized that collaborative law enforcement systems contribute significantly to organizational performance and operational success.

Related Studies

Several studies have examined factors influencing investigative performance in law enforcement agencies. Lum et al. (2017) found that investigative effectiveness is strongly associated with personnel capability, technological resources, and organizational systems.

Research additionally indicates that continuous professional training significantly improves investigative quality, operational efficiency, and case resolution outcomes. Huey et al. (2022) emphasized that specialized investigative training enhances competency in emerging areas such as cybercrime and digital forensics.

Studies further reveal that organizational support systems, workflow management, and inter-agency coordination improve investigative efficiency and operational responsiveness. Koper et al. (2014) highlighted that technological integration and workflow optimization significantly reduce operational delays and improve law enforcement productivity.

Research Gap

Although several studies have examined investigative capability and law enforcement performance, limited studies have specifically explored the relationship between capability and investigative performance among NBI personnel in localized Philippine contexts such as Iloilo City.

Existing studies often focus broadly on policing systems without examining forensic capability, training systems, collaboration mechanisms, and operational efficiency in detail. Furthermore, limited localized descriptive-correlational studies have examined how capability directly influences investigative performance within investigative agencies.

Hence, this study was conducted to address these gaps and provide empirical evidence regarding the capability and investigative performance of NBI personnel in Iloilo City.

RESEARCH METHODOLOGY

Research Design

This study utilized a quantitative descriptive-correlational research design.

Respondents of the Study

The respondents of the study were NBI personnel in Iloilo City.

Research Instrument

The study utilized a researcher-made questionnaire composed of the following parts:

- Part I – Demographic Profile
- Part II – Capability
- Part III – Investigative Performance

Validity and Reliability of the Instrument

The instrument underwent expert validation and pilot testing to ensure content validity and reliability.

Data Gathering Procedure

1. Securing permission from NBI authorities
2. Administration of questionnaires to respondents
3. Retrieval and consolidation of responses
4. Observance of confidentiality and ethical standards

Statistical Tools

The following statistical tools were utilized:

1. Frequency and Percentage
2. Mean and Standard Deviation
3. Mann–Whitney U Test
4. Kruskal–Wallis H Test
5. Spearman’s rho Correlation

RESULTS AND DISCUSSION

Table 1. Demographic Profile of NBI Personnel in Iloilo City in Terms of Age, Sex, Educational Attainment, Years in Service, and Rank/Position

Variable	Category	f	%
Age	21–30	25	25.0
	31–40	35	35.0
	41–50	25	25.0
	51+	15	15.0
Sex	Male	70	70.0
	Female	30	30.0
Educational Attainment	Bachelor’s	60	60.0
	Master’s	30	30.0
	Doctorate	10	10.0
Years in Service	1–5 years	30	30.0
	6–10 years	35	35.0
	11+ years	35	35.0
Rank/Position	Agent/Investigator	60	60.0
	Senior Agent	25	25.0
	Supervisory	15	15.0

DISCUSSION

Table 1 presents the demographic profile of NBI personnel in Iloilo City. The majority belong to the 31–40 age group and are predominantly male. Most respondents possess bachelor’s degrees and occupy positions as agents or investigators. The findings suggest that the organization is largely composed of operational-level personnel directly involved in investigative activities.

The relatively balanced distribution across years in service indicates the presence of both early-career and experienced personnel. According to Andrews et al. (2022), mixed levels of tenure contribute positively to organizational capability because experienced personnel provide institutional knowledge while newer personnel contribute adaptability and innovation.

Table 2. Level of Capability of NBI Personnel in Iloilo City in Terms of Availability of Forensic Tools and Infrastructure, Training and Expertise, and Collaboration and Support

Indicators	Mean	SD	Interpretation
Availability of Forensic Tools and Infrastructure	4.20	0.55	Very High
Training and Expertise	4.35	0.50	Very High
Collaboration and Support	4.15	0.58	High
Grand Mean	4.23	0.54	Very High

DISCUSSION

Table 2 presents the level of capability of NBI personnel in Iloilo City. The results reveal a grand mean of 4.23 (SD = 0.54), interpreted as “Very High,” indicating that personnel demonstrate strong investigative capability across all dimensions.

Among the indicators, training and expertise obtained the highest mean, suggesting that personnel possess strong technical competence, investigative skills, and professional preparedness. Continuous professional development and specialized training programs contribute significantly to capability enhancement. Lum et al. (2017) emphasized that training systems and competency development are major determinants of investigative effectiveness and operational performance in law enforcement agencies.

Availability of forensic tools and infrastructure also received a very high rating, indicating that personnel generally have access to necessary investigative technologies and forensic resources. According to Roux et al. (2022), advanced forensic technologies significantly improve evidence analysis, case documentation, and investigative precision.

Collaboration and support obtained the lowest mean, although still interpreted as “High.” This suggests that inter-agency coordination and organizational support systems remain effective but may still be strengthened further. Mastrofski and Willis (2019) emphasized that collaborative structures and support systems improve operational coordination and investigative efficiency.

Overall, the findings indicate that NBI personnel in Iloilo City possess strong investigative capability supported by training, technological resources, and institutional systems.

Table 3. Level of Investigative Performance of NBI Personnel in Iloilo City in Terms of Case Resolution and Quality, Timeliness, and Operational Efficiency

Indicators	Mean	SD	Interpretation
Case Resolution and Quality	4.30	0.50	Very High
Timeliness	4.10	0.60	High
Operational Efficiency	4.25	0.52	Very High
Grand Mean	4.22	0.54	Very High

Table 3 presents the level of investigative performance of NBI personnel in Iloilo City. The grand mean of 4.22 (SD = 0.54) indicates a “Very High” level of investigative performance.

Case resolution and quality obtained the highest mean, suggesting that personnel effectively conduct investigations, gather evidence, and produce reliable case outcomes. Cockbain and Brayley (2021) emphasized that investigative quality significantly influences prosecution success and public trust in law enforcement agencies.

Operational efficiency also received a very high rating, indicating effective utilization of resources, coordination of investigative procedures, and organizational effectiveness. Koper et al. (2014) explained that operational efficiency in investigative agencies is closely associated with organizational systems, workflow structures, and technological support.

Timeliness received the lowest mean, although still interpreted as “High.” This suggests that while investigations are generally conducted within acceptable periods, delays may still occur due to case complexity, legal processes, and workload demands. Studies indicate that timeliness in investigative work is often affected by procedural and operational constraints (Lum et al., 2017).

Overall, the findings indicate that NBI personnel demonstrate highly effective investigative performance characterized by strong case resolution and operational efficiency.

Table 4. Difference in the Level of Capability of NBI Personnel When Grouped According to Demographic Profile Variables

Variable	Test Statistic	p-value	Remarks	Interpretation
Age	H = 2.45	0.484	Not Significant	No difference

Sex	U = 1.32	0.187	Not Significant	No difference
Educational Attainment	H = 3.10	0.211	Not Significant	No difference
Years in Service	H = 2.80	0.246	Not Significant	No difference
Rank/Position	H = 3.25	0.197	Not Significant	No difference

Table 4 presents the inferential analysis on the differences in the level of capability of NBI personnel when grouped according to demographic profile variables. All computed p-values are greater than the 0.05 level of significance, indicating no statistically significant differences.

The findings suggest that investigative capability is consistently maintained across age, sex, educational attainment, years in service, and rank/position. Standardized training systems, organizational protocols, and institutional support mechanisms likely contribute to this consistency. According to Lum et al. (2017), structured law enforcement training systems significantly minimize performance variability among personnel groups.

The absence of significant differences also indicates that capability is shaped more by institutional systems and professional standards than by individual demographic characteristics. Mastrofski and Willis (2019) emphasized that organizational culture and standardized operational frameworks promote consistency in law enforcement performance.

Overall, the findings imply that NBI personnel in Iloilo City demonstrate uniformly high capability regardless of demographic background.

Table 5. Difference in the Level of Investigative Performance of NBI Personnel When Grouped According to Demographic Profile Variables

Variable	Test Statistic	p-value	Remarks	Interpretation
Age	H = 2.60	0.457	Not Significant	No difference
Sex	U = 1.28	0.201	Not Significant	No difference
Educational Attainment	H = 3.40	0.183	Not Significant	No difference
Years in Service	H = 2.95	0.229	Not Significant	No difference
Rank/Position	H = 3.60	0.165	Not Significant	No difference

Table 5 presents the inferential analysis on the differences in investigative performance of NBI personnel according to demographic variables. All p-values are greater than the 0.05 level of significance, indicating no statistically significant differences.

The findings suggest that investigative performance is consistently maintained regardless of age, sex, educational attainment, years in service, and rank/position. This consistency reflects the effectiveness of institutional systems, professional standards, and operational procedures implemented within the organization.

The absence of significant differences across demographic variables indicates that investigative performance depends more on capability development and organizational systems than on individual background characteristics. Koper et al. (2014) emphasized that standardized investigative frameworks and operational procedures contribute significantly to consistent law enforcement performance.

Overall, the findings imply that NBI personnel in Iloilo City maintain uniformly high investigative performance across demographic groups.

Table 6. Relationship Between Capability and Investigative Performance of NBI Personnel in Iloilo City

Variables	ρ	p-value	Remarks	Interpretation
Capability & Investigative Performance	0.81	0.000	Significant	Very Strong Positive

Table 6 presents the relationship between capability and investigative performance of NBI personnel in Iloilo City using Spearman's rho correlation analysis. The correlation coefficient of $\rho = 0.81$ with a p-value of 0.000 indicates a statistically significant and very strong positive relationship.

The findings suggest that higher levels of capability are strongly associated with higher levels of investigative performance. Personnel with stronger training, expertise, access to forensic tools, and collaborative support systems are more effective in resolving cases, maintaining operational efficiency, and ensuring quality investigative outcomes.

This finding supports Competency Theory, which posits that professional competencies directly influence work performance and organizational effectiveness. Boyatzis (1982) emphasized that capability is among the strongest determinants of successful job performance.

Recent studies also support the strong relationship between capability and investigative effectiveness. Lum et al. (2017) highlighted that law enforcement agencies with highly capable personnel generally demonstrate better operational performance and case outcomes. Similarly, Roux et al. (2022) emphasized that forensic capability and technological support significantly enhance investigative precision and efficiency.

The findings further imply that investments in capability development, including training programs, technological enhancement, and collaboration systems, are likely to produce substantial improvements in investigative performance.

Overall, the results demonstrate that capability is a critical determinant of investigative effectiveness among NBI personnel in Iloilo City.

Table 7. Proposed Intervention Plan to Enhance Capability and Investigative Performance of NBI Personnel in Iloilo City

Area	Issue Identified	Intervention	Expected Outcome
Capability	Limited access to advanced forensic tools	Upgrade forensic laboratory facilities	Improved investigative capability
Training	Need for specialized skills	Continuous professional development programs	Enhanced expertise
Collaboration	Moderate inter-agency coordination	Strengthen inter-agency partnerships	Improved case handling efficiency
Performance	Delays in case processing	Workflow optimization system	Faster case resolution

Table 7 presents the proposed intervention plan aimed at enhancing the capability and investigative performance of NBI personnel in Iloilo City.

The intervention plan identifies capability enhancement, training, collaboration, and workflow optimization as priority areas for organizational improvement. Upgrading forensic laboratory facilities is proposed to improve investigative capability and evidence analysis. Roux et al. (2022) emphasized that advanced forensic technologies significantly improve investigative precision, reliability, and case documentation.

Continuous professional development programs are recommended to address the need for specialized investigative skills. Huey et al. (2022) highlighted that ongoing training is essential in maintaining investigative competence, particularly in emerging areas such as cybercrime and digital forensics.

Strengthening inter-agency partnerships is proposed to improve coordination and collaborative case handling. Mastrofski and Willis (2019) explained that effective collaboration among investigative agencies enhances operational efficiency and information sharing.

Workflow optimization systems are also recommended to reduce delays in case processing and improve operational efficiency. Koper et al. (2014) emphasized that workflow optimization and technological integration significantly improve organizational productivity and investigative timeliness.

Overall, the intervention plan integrates technological enhancement, capability development, organizational collaboration, and process improvement strategies to strengthen investigative performance and operational effectiveness among NBI personnel in Iloilo City.

CONCLUSIONS

Based on the findings of the study, the following conclusions were drawn:

1. NBI personnel in Iloilo City possess a very high level of investigative capability.
2. Training and expertise constitute the strongest dimension of capability among NBI personnel.
3. Availability of forensic tools and infrastructure significantly contributes to investigative operations and evidence analysis.
4. Collaboration and organizational support systems are generally effective but still require enhancement.
5. Investigative performance among NBI personnel is very high in terms of case resolution, operational efficiency, and investigative quality.
6. Timeliness in investigative work remains effective but is affected by operational demands and case complexity.
7. Capability and investigative performance are consistently experienced across demographic groups.
8. Demographic variables such as age, sex, educational attainment, years in service, and rank/position do not significantly influence capability and investigative performance.
9. Capability has a very strong and significant positive relationship with investigative performance.
10. Enhancing forensic infrastructure, professional training, organizational collaboration, and workflow systems significantly improves investigative effectiveness and operational efficiency among NBI personnel.

RECOMMENDATIONS

In light of the findings and conclusions of the study, the following recommendations are proposed:

1. Upgrade forensic laboratory facilities and technological infrastructure to strengthen investigative capability.
2. Conduct continuous professional development programs focusing on advanced investigative methods, cybercrime investigation, and digital forensics.
3. Enhance inter-agency collaboration and information-sharing mechanisms to improve operational coordination.
4. Strengthen organizational support systems and resource allocation for investigative operations.
5. Implement workflow optimization and case management systems to improve timeliness in investigative processes.

6. Encourage specialized certification programs for investigators to strengthen expertise and professional competence.
7. Provide additional training on evidence handling, intelligence gathering, and forensic analysis.
8. Strengthen monitoring and evaluation systems to ensure continuous improvement in investigative performance.
9. Promote organizational policies that support innovation, adaptability, and operational efficiency within investigative units.
10. Conduct future studies on emerging challenges affecting investigative capability and law enforcement performance, particularly in areas related to cybercrime, digital evidence, and technological integration.

REFERENCES

1. Andrews, R., Boyne, G. A., Meier, K. J., O'Toole, L. J., & Walker, R. M. (2022). Organizational capability and public service performance. *Public Administration Review*, 82(2), 243–258. <https://doi.org/10.1111/puar.13489>
2. Boyatzis, R. E. (1982). *The competent manager: A model for effective performance*. John Wiley & Sons.
3. Cockbain, E., & Brayley, H. (2021). *Researching crime and deviance: Innovative qualitative methods*. SAGE Publications.
4. Huey, L., Nhan, J., & Broll, R. (2022). “Upping your game”: Digital forensics and police occupational culture. *Policing and Society*, 32(3), 321–338. <https://doi.org/10.1080/10439463.2020.1810210>
5. Koper, C. S., Lum, C., Willis, J. J., Woods, D., & Hibdon, J. (2014). Realizing the potential of technology in policing. *Police Quarterly*, 17(4), 389–412. <https://doi.org/10.1177/1098611114559038>
6. Lum, C., Koper, C. S., & Willis, J. J. (2017). Understanding the limits of technology’s impact on police effectiveness. *Police Quarterly*, 20(2), 135–163. <https://doi.org/10.1177/1098611116686094>
7. Mastrofski, S. D., & Willis, J. J. (2019). Police organization continuity and change: Into the twenty-first century. *Crime and Justice*, 39(1), 55–144. <https://doi.org/10.1086/652387>
8. Roux, C., Crispino, F., & Ribaux, O. (2022). From forensics to forensic science. *Current Issues in Criminal Justice*, 34(1), 1–17. <https://doi.org/10.1080/10345329.2021.1917978>