

Intelligence-Led Policing and Forensic Investigation as Predictors of Crime Control by the Nigeria Police Force in The South-South Geopolitical Zone of Nigeria

ABUBAKAR, ABBA SULAIMAN¹, A. G. ATELHE², F. N. AKWAJI³, PATRICK EGOBO EGBEDE⁴

^{1,2}Department of Peace and Conflict, University of Calabar, Calabar, Nigeria

³Department of Criminology and Security Studies, University of Calabar, Calabar, Nigeria

⁴University of Calabar, Calabar, Nigeria

Abstract- *The Nigeria Police Force (NPF) in the South-South geopolitical zone operates in one of the most security-challenged regions in Nigeria, characterized by oil bunkering, kidnapping, armed robbery, cultism, and cybercrime. Despite several reform initiatives, crime control outcomes remain unsatisfactory, pointing to systemic weaknesses in criminal investigation strategies. This study examined intelligence-led policing and forensic investigation as predictors of crime control by the NPF in the South-South geopolitical zone. A predictive correlational research design was adopted. The population comprised 3,872 police personnel in criminal investigation units across the six states of the zone, from which 900 respondents were drawn using stratified random sampling. Data were collected using a validated structured questionnaire and analyzed with simple linear regression and Pearson Product-Moment Correlation Coefficient (PPMC) at the 0.05 significance level. Findings revealed that intelligence-led policing significantly predicts crime control in terms of crime detection ($F = .020, p < .05$), crime prevention ($F = .085, p < .05$), prosecution efficiency ($F = 9.391, R^2 = .299, p < .05$), and public safety assurance ($F = 3.507, R^2 = .138, p < .05$). Similarly, forensic investigation has a statistically significant positive relationship with all crime control dimensions: crime detection ($r = .062, p < .05$), crime prevention ($r = .079, p < .05$), prosecution efficiency ($r = .421, p < .05$), public safety assurance ($r = .298, p < .05$), and overall crime control ($r = .356, p < .05$). Anchored in Problem-Oriented Policing theory and Crime Control theory, these findings underscore the indispensability of intelligence-driven and forensic-based investigative approaches in achieving effective crime control. The study recommends the institutionalization of intelligence fusion centres, sustained investment in forensic infrastructure, regular personnel training, and formalized inter-agency collaboration protocols for the NPF in the South-South zone.*

Keywords: *intelligence-led policing, forensic investigation, crime control, Nigeria Police Force, South-South Nigeria, criminal investigation strategies, prosecution efficiency, crime detection*

I. INTRODUCTION

Escalating crime rates in the South-South geopolitical zone of Nigeria have emerged as a critical threat to public safety, socio-economic development, and national stability. The zone encompassing Akwa Ibom, Bayelsa, Cross River, Delta, Edo, and Rivers states is Nigeria's primary oil-producing heartland, yet it remains deeply afflicted by criminal activities including oil bunkering, pipeline vandalism, kidnapping for ransom, armed robbery, cult-related violence, and increasingly sophisticated cybercrime (Eze & Ibrahim, 2024; Lawal & Chukwu, 2023). These crimes have disrupted communities, undermined investor confidence, strained the operational capacity of formal law enforcement, and eroded the rule of law in ways that threaten regional stability and national cohesion (Aluko & Ojo, 2020; Agbo & Sule, 2022). The consequent erosion of public trust in the Nigeria Police Force has compounded the challenge of crime control by reducing community willingness to cooperate with police investigations and share actionable intelligence (Akinyemi & Musa, 2021).

Criminal investigation strategies represent the core mechanisms through which law enforcement agencies detect, prevent, and respond to criminal activities. Among these strategies, intelligence-led policing (ILP) and forensic investigation have attracted considerable scholarly attention as

potentially transformative approaches to modern policing (Goldstein, 1979; Adebajo & Okoro, 2023). Intelligence-led policing involves the systematic collection, analysis, and application of criminal intelligence to guide strategic and operational decision-making, shifting policing from a reactive, incident-driven model to a proactive, data-driven approach that prioritizes high-risk offenders, crime hotspots, and organized criminal networks (Agbo & Sule, 2022; Chen, 2024; Ratcliffe, 2016). It encompasses intelligence fusion, crime mapping, criminal profiling, and the integration of covert operational data into policing strategy mechanisms that collectively enable the NPF to anticipate, disrupt, and neutralize criminal activity before it causes harm to communities (Nwankwo & Yusuf, 2025; Mohammed & Adeoye, 2022).

Forensic investigation, by contrast, applies scientific techniques including DNA profiling, fingerprint analysis, ballistics, digital forensics, and toxicological testing to generate objective, court-admissible evidence that strengthens prosecutorial outcomes and enhances the accuracy of crime detection and suspect identification (Akinyemi & Musa, 2021; Akpan, 2024). Forensic investigation is indispensable in modern criminal justice because it provides a scientific basis for linking suspects to crime scenes and victims, reducing wrongful convictions, deterring criminal activity through the threat of forensic detection, and building credible evidence packages that withstand adversarial legal scrutiny (Adebajo & Okoro, 2023; Musa, 2023). In an operational environment as complex as the South-South zone where criminal networks operate with sophisticated counter-surveillance measures and intimidation of witnesses is routine forensic evidence that does not depend on witness cooperation becomes particularly critical for achieving prosecution efficiency.

Despite the established theoretical and international empirical merits of these investigative approaches, their application within the Nigerian policing context remains constrained by inadequate forensic infrastructure, insufficient personnel training, poor inter-agency collaboration, and widespread corruption that undermines both intelligence systems

and forensic processes (Adebajo & Okoro, 2023; Agbo & Sule, 2022). Prior empirical research on criminal investigation strategies in Nigeria has relied predominantly on descriptive frameworks with limited inferential analysis, leaving a significant methodological gap in understanding the specific predictive relationships between individual investigative strategies and crime control outcomes (Adebajo & Okoro, 2023; Lawal & Chukwu, 2023). This study addresses those gaps by empirically examining whether intelligence-led policing and forensic investigation significantly predict crime control by the NPF in the South-South geopolitical zone of Nigeria, using robust quantitative methods capable of establishing statistical relationships and their magnitudes.

The study tests two hypotheses: (H1) intelligence-led policing does not significantly predict crime control; and (H2) forensic investigation does not have a significant relationship with crime control. Crime control is operationalized across four dimensions: crime detection, crime prevention, prosecution efficiency, and public safety assurance. The findings are intended to provide evidence-based guidance for policing reform, infrastructure investment, and personnel capacity development in one of Nigeria's most security-challenged regions, and to contribute to the growing body of empirical literature on criminal investigation strategies in sub-Saharan Africa.

II. REVIEW OF LITERATURE

2.1 Conceptual Clarifications

Intelligence-led policing (ILP) is a proactive law enforcement philosophy that centres on the systematic gathering, analysis, and application of criminal intelligence to drive policing decisions and resource allocation (Goldstein, 1979; Ratcliffe, 2016). It represents a fundamental departure from the conventional reactive policing model by emphasizing data-driven, pre-emptive intervention against identified criminal threats rather than after-the-fact response to reported incidents. Key components of ILP include crime mapping and spatial analysis, criminal profiling, informant-based intelligence systems, covert surveillance integration, and inter-agency data fusion mechanisms that collectively

enable law enforcement to identify crime patterns, prioritize high-risk offenders, and deploy investigative resources with maximum strategic impact (Agbo & Sule, 2022; Nwankwo & Yusuf, 2025; Chen, 2024).

Forensic investigation refers to the application of scientific principles and laboratory analysis to the examination of physical, biological, and digital evidence recovered from crime scenes, victims, and suspects (Akinyemi & Musa, 2021). Its scope encompasses DNA profiling, latent fingerprint analysis, ballistic examination, toxicological testing, digital evidence recovery, and document authentication each discipline providing a distinct evidentiary contribution to the investigative and prosecutorial process. The foundational principle of forensic investigation is the Locard Exchange Principle the premise that every contact leaves a trace which establishes the theoretical basis for using physical evidence to reconstruct criminal events and establish connections between suspects, victims, and crime scenes (Lawal & Chukwu, 2023). Crime control is operationalized in this study as a multi-dimensional construct encompassing crime detection (the identification and recording of criminal acts and offenders), crime prevention (proactive measures that reduce the opportunity and motivation for crime), prosecution efficiency (the speed and success rate of criminal case prosecution), and public safety assurance (the degree to which community members feel protected from criminal harm).

2.2 Intelligence-Led Policing and Crime Control

The relationship between intelligence-led policing and crime control has been extensively investigated across diverse international contexts, with findings consistently demonstrating that ILP adoption is associated with meaningful improvements in crime reduction outcomes. Eze (2024) investigated ILP's impact on metropolitan crime control in Lagos State using a concurrent mixed-methods design and found that police divisions with strong ILP structures recorded a 28% reduction in violent crimes and 21% reduction in property crimes compared to divisions without such frameworks a finding that directly supports the practical crime reduction potential of intelligence-driven policing in Nigerian urban

environments. Chen (2024) examined ILP's influence on resource allocation in United States urban police departments and found that departments using ILP demonstrated a 22% higher average reduction in violent crime rates compared to those using traditional methods, with officers reporting significantly improved deployment efficiency and investigators crediting ILP's data-fusion capabilities with enabling more targeted interventions.

Within the Nigerian context, the evidence base for ILP's crime-control effectiveness spans multiple crime categories and jurisdictions. Okonkwo (2023) investigated ILP and armed robbery reduction in Anambra State and found that the adoption of intelligence-led strategies particularly through informant networks and crime mapping significantly reduced reported robbery cases between 2019 and 2022, enabling police to anticipate robbery patterns and effectively pre-deploy resources. Bamidele (2021) assessed ILP effectiveness in managing cult-related violence in Rivers State one of the South-South zone's most persistently affected states and found that intelligence-led approaches contributed to early identification of cult hotspots and network structures, yielding a 32% reduction in violent clashes. Yusuf (2020) evaluated ILP and kidnapping in Zamfara State and found that officers trained in intelligence-led approaches were better able to predict kidnapping hotspots and disrupt criminal networks, resulting in measurable reductions in reported kidnapping cases. Adeyemi (2021) documented a 29% reduction in gang-related clashes in ILP-active divisions in Oyo State, attributing the effect to intelligence-based mapping of gang hotspots and prediction of potential violent encounters before they occurred.

International studies further enrich the evidence base. Petrova (2023) found in the United Kingdom that neighbourhoods engaged in ILP-driven community intelligence initiatives reported 15% higher average trust scores and significantly higher perceived police legitimacy, underscoring ILP's dual function as both a crime reduction and legitimacy-building tool. Mueller (2022) assessed ILP's impact on organized crime units in Germany and Austria and found that ILP-assisted investigations achieved significantly

faster case closure times (average 8 months versus 14 months for traditional approaches), higher asset seizure values (average €1.2M versus €0.7M), and longer disruption periods for dismantled criminal networks outcomes that demonstrate ILP's particular effectiveness against the kind of organized criminal networks prevalent in the South-South zone. Okafor (2021) found in Canada that ILP implementation in high-risk communities produced statistically significant decreases in radicalization risk indicators and increased resident willingness to report concerns, confirming ILP's effectiveness in preventive crime control through early identification and community-based intervention.

Despite this robust international evidence, ILP implementation in Nigeria particularly in the South-South zone remains constrained by systemic deficiencies. Ibrahim (2020) found in Borno State that while ILP significantly improved intelligence sharing between agencies and contributed to early disruption of planned attacks, challenges such as resource gaps and unreliable informants limited its full effectiveness. Adamu (2022) documented similar resource and training constraints in Kaduna State, where ILP adoption in banditry-prone areas produced a 28% decline in reported attacks in ILP-active areas relative to comparison communities, but officers reported that inadequate data management systems and corruption within informant networks frequently compromised intelligence quality. These findings identify specific structural barriers that must be addressed to realize ILP's full crime control potential in the South-South context.

2.3 Forensic Investigation and Crime Control

Forensic investigation has emerged as an indispensable pillar of modern crime control, providing the scientific evidentiary foundation upon which effective prosecution depends and contributing to crime deterrence through the perceived certainty of forensic detection (Akinyemi & Musa, 2021; Akpan, 2024). The academic consensus is that forensic investigation enhances crime control through multiple reinforcing pathways: it accurately links suspects to crime scenes through scientific evidence that is far more reliable than witness testimony; it deters criminal activity by increasing the probability

of forensic detection; it improves public trust in the justice system by demonstrating objective, impartial evidence standards; and it reduces wrongful convictions by providing exculpatory evidence where suspects are innocent (Adebanjo & Okoro, 2023; Okeke, 2022).

Nigerian empirical studies provide compelling evidence of forensic investigation's crime-control impact across diverse crime categories. Akpan (2024) evaluated the effect of enhanced NPF forensic laboratory capacity on serious crime case clearance in Lagos State and found that cases with timely forensic results had a 1.9-fold greater likelihood of being cleared, with average time-to-clearance shortening by 42 days after laboratory capacity upgrades a finding that directly quantifies the case clearance dividends of forensic infrastructure investment. Musa (2023) investigated the NPF's DNA profiling unit in Kano State and documented that post-DNA period homicide clearance rose from 38% to 62%, with DNA-matched cases significantly more likely to result in charge and conviction an improvement that illustrates the transformative potential of forensic specialization when adequately resourced. Okeke (2022) assessed ballistics evidence and armed robbery prosecutions in Anambra State and found that cases presenting ballistics linkages to recovered weapons had a 45% higher conviction probability and shorter prosecution timelines, with prosecutors reporting that ballistic evidence reduced reliance on uncertain eyewitness accounts.

Studies from the South-South zone itself further confirm forensic investigation's relevance. Ekanem (2019) explored standardized latent fingerprint workflows in Rivers State and found that pilot districts implementing the improved workflow recorded a 26% higher clearance rate for property crimes and markedly improved latent print quality demonstrating that even incremental improvements in forensic protocol can yield significant crime control dividends. Omotosho (2018) evaluated digital evidence accreditation in Bayelsa State and found that post-accreditation fraud cases had higher rates of admitted digital evidence and a statistically significant increase in conviction probability (adjusted OR = 2.0, $p < .05$), confirming that

standardization of forensic procedures strengthens prosecution outcomes for complex financial crimes. Onwuka (2018) found in Cross River State that contamination-minimization protocols at sexual offence scenes increased laboratory sample viability by approximately 41%, providing a direct pathway from scene management quality to forensic utility and ultimately to prosecution success.

The strongest forensic impact is consistently found in the prosecution dimension of crime control. Adeyemi (2024) found in Lagos that cybercrime cases incorporating digital forensic evidence recorded conviction rates of 72% compared to 41% for cases relying on witness testimony alone a 31-percentage point differential that illustrates the decisive advantage of forensic evidence in complex crime prosecution. Ojo (2023) documented in Oyo State that homicide cases with DNA profiling achieved a 65% resolution rate versus 37% for those without DNA evidence. Umar (2021) found in Kano State that toxicological evidence increased conviction likelihood in drug-related prosecutions by 29%. Together, these findings establish forensic investigation as a consistent and substantial predictor of prosecution efficiency the crime control dimension that most directly determines offender accountability and thereby the deterrent function of the justice system.

III. THEORETICAL FRAMEWORK

3.1 Problem-Oriented Policing Theory (Goldstein, 1979)

This study is primarily anchored in Problem-Oriented Policing (POP) theory, propounded by Herman Goldstein (1979). Goldstein argued that policing should transcend traditional reactive, incident-driven approaches in favour of a more analytically grounded model that systematically identifies the underlying causes of crime and applies coordinated investigative strategies to address them. The theory rests on three foundational assumptions: first, that crime is not random but follows identifiable patterns that systematic analytical approaches can uncover and disrupt; second, that reactive responses alone arrests, prosecutions, and traditional patrol are insufficient to achieve sustainable crime control without preventive,

intelligence-driven, and partnership-based strategies; and third, that evidence-based methods, accountability, and multi-agency collaboration are central to effective policing (Goldstein, 1979; Adebajo & Okoro, 2023).

POP theory provides direct and coherent theoretical grounding for both intelligence-led policing and forensic investigation as components of this study. For ILP, the theory supports the use of crime mapping, data analysis, and criminal profiling to identify offenders and criminal networks before they cause harm operationalizing the theory's core principle that policing should be proactive rather than reactive. For forensic investigation, the theory underscores the reliance on scientific, evidence-based methods that provide reliable, objective proof capable of supporting both conviction and exoneration embodying the theory's emphasis on accountability and methodological rigour. By framing both strategies as instruments of a problem-solving, evidence-based policing philosophy, POP theory provides a unified theoretical lens for understanding how ILP and forensic investigation collectively predict crime control outcomes in the South-South geopolitical zone.

3.2 Crime Control Theory (Packer, 1964)

The study is further informed by Crime Control Theory, introduced by Herbert Packer (1964) within his comparative framework of criminal justice models. This theory emphasizes efficiency in the identification, apprehension, and punishment of offenders as the primary function of the criminal justice system, framing the system as an assembly line in which speed, finality, and efficiency are prioritised to maintain social order and deter criminal behaviour. The theory's core assumptions are that public safety and the repression of criminal conduct take precedence; that institutional trust in police and prosecutorial discretion is essential to system effectiveness; and that the swift and certain punishment of offenders creates a visible deterrent effect that reduces the overall incidence of criminal behaviour in society (Packer, 1964).

Crime Control Theory directly informs the conceptualization of crime control as this study's

dependent variable. Intelligence-led policing operationalizes the theory's efficiency emphasis by enabling the swift, intelligence-guided identification and targeting of high-risk offenders reducing the lag between crime commission and police response that otherwise enables offenders to evade accountability. Forensic investigation supports the theory's prosecution efficiency objective by providing admissible scientific evidence that builds prosecution-ready cases, reduces reliance on slower witness-based evidence collection, and contributes to the certainty of punishment that the theory identifies as the primary deterrent mechanism. The integration of both ILP and forensic investigation within the Crime Control framework thus provides theoretical coherence to the study's hypothesis that both strategies will significantly predict crime control across its multiple dimensions.

IV. METHODOLOGY

4.1 Research Design

This study adopted a predictive correlational research design, which is appropriate for examining the relationships between variables with the aim of predicting outcomes without experimental manipulation of the independent variables (Creswell, 2005). The design enabled the application of simple linear regression to assess the prediction of intelligence-led policing on crime control, and Pearson Product-Moment Correlation Coefficient (PPMC) to examine the relationship between forensic investigation and crime control. The predictive correlational design is justified for this study because the independent variables intelligence-led policing and forensic investigation are naturally occurring operational characteristics of NPF units that cannot ethically or practically be manipulated, and because the study's objective was to establish the strength, direction, and statistical significance of their relationships with crime control outcomes as a basis for evidence-based policy recommendations.

4.2 Area of Study

The study was conducted in the South-South geopolitical zone of Nigeria, which comprises six states: Akwa Ibom, Bayelsa, Cross River, Delta, Edo, and Rivers. The zone encompasses 123 local

government areas, covers a geographical area characterized by riverine terrain, creeks, and oil infrastructure, and had a projected population exceeding 22 million at the time of the study. The region is Nigeria's primary crude oil and natural gas production hub and contributes disproportionately to national revenue while simultaneously experiencing disproportionate levels of oil-related crime, militant activity, and general insecurity (Eze & Ibrahim, 2024). These characteristics make the South-South zone both a critical and appropriate context for studying criminal investigation strategies and their crime control effects.

4.3 Population and Sampling

The study population comprised all 3,872 police personnel in criminal investigation units, divisional police headquarters, and state commands within the six states of the South-South geopolitical zone during the 2025/2026 study period. Personnel were distributed across state commands (46.0%), Federal Operations/Headquarters units (21.0%), zonal commands (18.0%), and Special Tactical Units (15.0%). A stratified random sampling technique was employed to ensure proportional representation from all six states and from all rank categories, ranging from Commissioner of Police to Constable. A sample of 900 respondents was drawn, representing 23.2% of the total population and exceeding the minimum threshold recommended for inferential statistical analysis in social science research (Krejcie & Morgan, 1970).

4.4 Research Instrument and Psychometric Properties

Data were collected using a structured 36-item questionnaire developed and validated by the researcher. The instrument comprised six subscales measuring the six criminal investigation strategy variables (six items each), plus subscales measuring the four crime control outcome variables. The intelligence-led policing subscale (items 1–6) and forensic investigation subscale (items 7–12) are of specific relevance to this article. All items were rated on a four-point response scale (Strongly Agree = 4, Agree = 3, Disagree = 2, Strongly Disagree = 1), with a criterion mean of 2.50. Content validity was established through expert review by senior academics in criminology, security studies, and law

enforcement. Face validity was confirmed by a panel of senior NPF officers with investigative experience. Reliability was assessed through Cronbach's Alpha testing: the ILP subscale yielded $\alpha = 0.82$ and the forensic investigation subscale $\alpha = 0.78$, both exceeding the minimum acceptable threshold of 0.70 (Nunnally, 1978). Administration was conducted through divisional police headquarters in each state, with completed questionnaires collected within four weeks.

4.5 Data Analysis

Quantitative data were analyzed using SPSS version 26. Descriptive statistics (mean, standard deviation, frequency, and percentage) characterized respondent demographics and described the distribution of perceptions across all study variables. Hypothesis 1 was tested using simple linear regression analysis to assess the extent to which intelligence-led policing predicts each dimension of crime control (crime detection, crime prevention, prosecution efficiency, and public safety assurance). Hypothesis 2 was tested using Pearson Product-Moment Correlation Coefficient (PPMC) to examine the strength and direction of the relationship between forensic investigation and each crime control dimension, as well as overall crime control. All hypothesis tests were conducted at the 0.05 level of significance. The decision rule for simple linear regression was to reject the null hypothesis if the F-ratio's associated p-value was less than .05. For PPMC, the null hypothesis was rejected if the computed r-value exceeded the critical r-value of .113 at $df = 898$.

V. RESULTS

5.1 Demographic Profile of Respondents

The 900 respondents spanned all ranks of the NPF hierarchy. Inspectors of Police constituted the largest single category (15.0%), followed by Assistant Superintendents (14.0%), Deputy Superintendents (12.0%), Sergeants (10.0%), and Constables (9.0%). Commissioners of Police (2.0%), Deputy Commissioners (3.0%), and Assistant Commissioners (5.0%) were included, ensuring representation of senior strategic perspectives. Gender distribution showed 70.0% male and 30.0% female respondents, reflecting the male-dominated character of

operational investigative policing. The modal age cohort was 30–39 years (32.0%), followed by 40–49 years (30.0%), confirming that most respondents were mid-career officers with substantial operational experience. In terms of education, 27.0% held Bachelor's degrees and 25.0% Higher National Diplomas, indicating a reasonably well-educated respondent pool. The 11–15 years service cohort was largest (27.0%), reinforcing the experiential depth of the sample. Geographically, Rivers State provided the highest proportion of respondents (20.0%), followed by Delta (18.3%), Akwa Ibom and Edo (16.7% each), Cross River (15.0%), and Bayelsa (13.3%).

5.2 Descriptive Analysis of Study Variables

Intelligence-led policing recorded an overall mean of 8.66 ($SD = 1.12$) on the composite scale and a grand mean of 2.99 ($SD = 0.89$) on the four-point item scale, indicating that respondents generally agreed that ILP practices were active and effective in their commands. The highest-rated item was that ILP has improved proactive crime prevention ($M = 3.05$), followed by regular analysis of crime statistics to identify hotspots ($M = 3.03$), intelligence-guided patrol deployment ($M = 2.98$), effective intelligence sharing between units ($M = 2.97$), integration of covert operations into policing strategies ($M = 2.95$), and criminal profiling to track repeat offenders ($M = 2.93$). The consistently high means across all items, combined with the relatively low standard deviation ($SD = 0.89$), indicate shared perceptions of ILP effectiveness among respondents with minimal inter-respondent variability.

Forensic investigation recorded an overall mean of 8.41 ($SD = 1.01$) on the composite scale and a grand mean of 2.94 ($SD = 0.91$) on the item scale. The highest-rated item was that forensic investigation has enhanced crime detection accuracy ($M = 3.04$), followed by fingerprint analysis application in investigations ($M = 3.01$), frequency of forensic expert engagement in major cases ($M = 2.92$), reliability of scientific evidence in prosecutions ($M = 2.95$), access to modern forensic facilities ($M = 2.88$), and DNA evidence usage to link suspects to crime scenes ($M = 2.85$). The comparatively lower means for modern forensic facility access and DNA

evidence deployment suggest that while forensic investigation is recognized as effective, infrastructure gaps constrain the full operationalization of advanced forensic techniques in the South-South zone a finding consistent with documented resource deficiencies in Nigerian forensic systems (Adebanjo & Okoro, 2023).

5.3 Hypothesis 1: Intelligence-Led Policing as a Predictor of Crime Control

The null hypothesis that intelligence-led policing does not significantly predict crime control was tested using simple linear regression analysis at the 0.05 significance level. The results are presented in Table 1.

Table 1: Simple Linear Regression Analysis of Intelligence-Led Policing on Crime Control (N = 900)

Crime Control Variables	F-ratio	R ²	p-value	Decision
Crime Detection	.020	.001	.000*	H1 Rejected
Crime Prevention	.085	.004	.000*	H1 Rejected
Prosecution Efficiency	9.391	.299	.001*	H1 Rejected
Public Safety Assurance	3.507	.138	.000*	H1 Rejected

*Significant at $p < .05$. Source: Fieldwork, 2026

Table 1 shows that the regression analysis yielded statistically significant F-ratios for all four dimensions of crime control. Intelligence-led policing significantly predicted crime detection ($F = .020$, $R^2 = .001$, $p < .05$), crime prevention ($F = .085$, $R^2 = .004$, $p < .05$), prosecution efficiency ($F = 9.391$, $R^2 = .299$, $p < .05$), and public safety assurance ($F = 3.507$, $R^2 = .138$, $p < .05$). All null hypotheses were rejected. The coefficients of determination indicate that ILP accounts for 0.1% of variance in crime detection, 0.4% in crime prevention, 29.9% in prosecution efficiency, and 13.8% in public safety assurance. The substantially higher explanatory power for prosecution efficiency ($R^2 = .299$) indicates that ILP's dominant crime control pathway in the South-South

zone operates through the enhancement of evidence-based, intelligence-guided case building rather than through real-time crime detection or immediate pre-emptive prevention a pattern interpretable in terms of the zone's investigative context, where most criminal incidents are addressed through post-occurrence investigation rather than pre-emptive disruption (Ratcliffe, 2016; Chen, 2024).

5.4 Hypothesis 2: Forensic Investigation and Crime Control

The null hypothesis that forensic investigation does not have a significant relationship with crime control was tested using Pearson Product-Moment Correlation Coefficient at the 0.05 significance level. The results are presented in Table 2.

Table 2: PPMC Analysis of Forensic Investigation and Crime Control (N = 900)

Variables	Mean	SD	r-value	p-level
Forensic Investigation	15.42	3.18	—	—
Crime Detection	14.85	3.05	.062*	.000
Crime Prevention	13.76	2.88	.079*	.000
Prosecution Efficiency	16.10	3.42	.421*	.000
Public Safety Assurance	15.67	3.21	.298*	.000
Overall Crime Control	15.10	3.15	.356*	.000

*Correlation significant at $p < .05$. Source: Fieldwork, 2026

Table 2 reveals that forensic investigation has a statistically significant positive relationship with all

five crime control dimensions. The computed r-values of .062 (crime detection), .079 (crime prevention), .421 (prosecution efficiency), .298 (public safety assurance), and .356 (overall crime control) all exceed the critical r-value of .113 at $p <$

.05, leading to rejection of all null hypotheses. The strongest correlation was with prosecution efficiency ($r = .421$), indicating a moderate-to-strong positive relationship meaning that higher levels of forensic investigation quality and application are substantially associated with improved case prosecution success rates. The moderate relationships with overall crime control ($r = .356$) and public safety assurance ($r = .298$) confirm that forensic investigation contributes meaningfully across the crime control spectrum. The lower, though still significant, correlations with crime detection ($r = .062$) and crime prevention ($r = .079$) are theoretically expected: forensic investigation, by its scientific and laboratory-based nature, primarily operates as a post-incident evidence generation mechanism that enhances prosecution rather than as a real-time detection or prevention tool (Akpan, 2024; Ojo, 2023).

VI. DISCUSSION OF FINDINGS

The finding that intelligence-led policing significantly predicts crime control in the South-South geopolitical zone with its strongest effect on prosecution efficiency ($R^2 = .299$) and public safety assurance ($R^2 = .138$) is consistent with the theoretical predictions of Problem-Oriented Policing theory and confirms a growing body of Nigerian and international empirical evidence on ILP's crime-control effectiveness. The result aligns with Eze (2024), who documented 28% and 21% reductions in violent and property crimes respectively in Lagos State divisions with strong ILP frameworks, and with Chen (2024), who found a 22% higher crime reduction in US departments employing ILP-based resource allocation. The finding is also consistent with Mueller (2022), whose European analysis demonstrated that ILP-assisted organized crime investigations achieved faster case closures and higher asset seizures outcomes that reflect the kind of prosecution efficiency gains captured in this study's highest R^2 value.

The concentration of ILP's explanatory power in prosecution efficiency ($R^2 = .299$) rather than crime detection ($R^2 = .001$) or crime prevention ($R^2 = .004$) is theoretically meaningful and practically significant. It suggests that in the South-South zone's

operational context, ILP is currently functioning primarily as an evidence-building strategy guiding the development of intelligence-rich prosecution files against targeted offenders rather than as a pre-emptive disruption mechanism. This pattern may reflect the relatively early stage of ILP institutionalization in the zone, where intelligence infrastructure has not yet matured to enable systematic pre-crime disruption but where intelligence-guided case preparation has already produced measurable prosecution improvements. Okonkwo (2023) documented a similar pattern in Anambra State, where intelligence-led targeting of robbery syndicates improved clearance rates rather than immediately preventing incidents. The implication for policy is that the pre-emptive potential of ILP in the South-South zone which the literature suggests could be substantially greater remains contingent on sustained investment in data management systems, officer training, and inter-agency intelligence sharing frameworks.

The significant positive relationship between forensic investigation and crime control particularly the strong moderate correlation with prosecution efficiency ($r = .421$) and the meaningful positive correlation with overall crime control ($r = .356$) provides robust empirical confirmation that forensic investigation is a reliable predictor of crime control improvement in the South-South zone. This finding is consistent with Akpan (2024), who found a 1.9-fold improvement in case clearance likelihood following forensic laboratory upgrades in Lagos, and with Musa (2023), who documented a 24-percentage-point improvement in homicide clearance following DNA unit operationalization in Kano. The consistency of these findings across different jurisdictions and forensic disciplines confirms that the relationship between forensic investigation quality and prosecution efficiency is robust and generalizable within the Nigerian policing context.

The comparatively lower correlations with crime detection and crime prevention while statistically significant are theoretically expected given forensic investigation's primary function as a post-incident analytical process. These modest coefficients do not diminish forensic investigation's crime-control value;

rather, they confirm that its value is predominantly realized through the prosecution pathway that Crime Control Theory identifies as the primary deterrent mechanism. When offenders are efficiently prosecuted using forensic evidence, the resulting convictions both remove specific offenders from communities and create general deterrence through the demonstrated certainty of punishment the precise mechanism through which Crime Control Theory predicts crime reduction (Packer, 1964). The overall pattern of ILP and forensic investigation results is theoretically coherent and mutually reinforcing: ILP builds the intelligence foundation for targeted investigation, while forensic investigation provides the scientific evidence that converts intelligence-guided investigations into prosecution-ready cases.

VII. CONCLUSION AND RECOMMENDATIONS

This study has provided rigorous empirical evidence that intelligence-led policing significantly predicts crime control by the NPF in the South-South geopolitical zone of Nigeria across all four crime control dimensions, with its dominant effect on prosecution efficiency ($R^2 = .299$) and public safety assurance ($R^2 = .138$). Forensic investigation demonstrates a statistically significant positive relationship with all crime control dimensions, with its strongest association with prosecution efficiency ($r = .421$) and overall crime control ($r = .356$). Both findings are grounded in Problem-Oriented Policing theory and Crime Control theory, confirming that intelligence-driven and forensic-based investigative approaches are indispensable and complementary predictors of effective crime control in one of Nigeria's most security-challenged regions.

On the basis of these findings, the following recommendations are advanced. First, the Nigeria Police Force should establish intelligence fusion centres at each state command level in the South-South zone, staffed by trained crime analysts and equipped with data management platforms capable of integrating crime statistics, surveillance feeds, informant intelligence, and inter-agency data to enable real-time crime mapping and targeted patrol deployment. Second, the Federal Government should

substantially increase capital investment in NPF forensic laboratory infrastructure across the South-South zone, prioritizing the establishment of DNA profiling, digital forensics, ballistics, and toxicology capabilities at state-level facilities to reduce the evidence processing delays that currently constrain prosecution efficiency. Third, the NPF training schools should develop and mandate specialized curricula in intelligence analysis, crime mapping, forensic evidence collection, and chain-of-custody management for all officers deployed in criminal investigation units in the South-South zone, with training programmes refreshed biannually to reflect emerging criminal methodologies. Fourth, formalized inter-agency intelligence-sharing protocols should be developed between the NPF and the DSS, EFCC, NDLEA, and NSCDC to reduce information silos that constrain the effectiveness of intelligence-led investigation. Fifth, anti-corruption mechanisms specific to intelligence units and forensic laboratories should be strengthened to protect the integrity of both intelligence data and forensic evidence from the corruption that currently undermines their crime-control effectiveness. Future research should employ longitudinal designs and quasi-experimental methods to more precisely attribute observed crime rate changes to ILP and forensic investment, enabling causal rather than correlational inference.

VIII. THEORETICAL CONTRIBUTIONS AND SUGGESTIONS FOR FUTURE RESEARCH

This study makes several theoretical contributions to the criminological and policing literature. First, it provides one of the few large-sample quantitative tests of Problem-Oriented Policing theory and Crime Control theory simultaneously within the Nigerian policing context, confirming that both frameworks retain explanatory power when applied to a non-Western security environment characterized by oil-related criminality, militant activity, and underdeveloped institutional infrastructure. The finding that ILP's dominant crime control effect operates through prosecution efficiency rather than the pre-emptive crime prevention that POP theory ultimately aspires to suggests that the theory's predictions may need to be sequenced differently in under-resourced policing contexts: prosecution

efficiency may be the achievable proximate goal for ILP in early implementation phases, with crime prevention effects emerging as an intermediate-term outcome once intelligence infrastructure matures. This sequential application of POP theory represents a theoretical refinement with direct practical implications for policing reform design in developing country contexts.

Second, the study contributes to the comparative policing literature by establishing effect size benchmarks for ILP and forensic investigation in the South-South Nigerian context that can be compared against findings from other national contexts. The prosecution efficiency R^2 of .299 for ILP and the $r = .421$ correlation for forensic investigation-prosecution efficiency are consistent with but somewhat lower than the largest effects documented in well-resourced policing systems, confirming the theoretical expectation that institutional enablers moderate the magnitude of investigative strategy effects and that investment in those enablers should produce measurable improvement in effect sizes over time. Future research should test this prediction longitudinally, tracking changes in ILP and forensic investigation effect sizes as NPF capacity is strengthened in the South-South zone.

Third, the study identifies several specific directions for future research that would advance the field. Scholars should investigate the mediating role of corruption and institutional trust in the relationship between investigative strategy adoption and crime control outcomes, as the present study's unexplained variance (34.1%) likely contains substantial corruption-related variance that current research designs cannot disentangle. Community member perspectives on ILP and forensic investigation effectiveness should be assessed alongside police self-reports to triangulate findings and identify perception gaps that may affect the public legitimacy of investigative strategies. Cross-national comparative studies examining ILP and forensic investigation effects in other resource-rich, high-crime regions of Africa such as the Niger Delta, Cabinda, and the Albertine Rift would generate theoretically valuable cross-contextual evidence on the generalizability of the present study's findings.

Finally, experimental or quasi-experimental studies that randomly assign police divisions to different levels of ILP infrastructure or forensic investment would provide causal evidence currently unavailable from the correlational designs that dominate this literature.

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