Artificial Intelligence(AI) and Criminal Psychology: Understanding the Dual Role of AI in Shaping Crime and Law Enforcement Responses in Nigeria

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Abstract

The rapid expansion of artificial intelligence (AI) has transformed both criminal activity and law enforcement strategies worldwide, presenting complex psychological, ethical, and institutional challenges. This study examines the dual role of artificial intelligence in shaping criminal psychology and law enforcement responses in Nigeria. Anchored in Technological Determinism Theory, the study adopts a qualitative exploratory design based on secondary data analysis. Data were drawn from academic literature, policy documents, institutional reports, and credible media sources published between 2015 and 2025. A thematic content analysis was employed to examine how AI influences criminal behavior and offender psychology, assess the preparedness of Nigerian law enforcement agencies to deploy AI-driven tools, and identify ethical and operational challenges associated with AI adoption. Findings reveal that while AI has enhanced crime detection and cybercrime monitoring in Nigeria, its deployment remains fragmented due to infrastructural limitations, skills deficits, and weak regulatory frameworks. The study further shows that AI indirectly reshapes criminal psychology by emboldening offenders through anonymity and technological sophistication, thereby intensifying the psychological arms race between criminals and law enforcement. Ethical concerns relating to privacy, surveillance, bias, and public trust remain significant barriers. The study concludes that effective AI integration in Nigeria's criminal justice system requires coordinated investment in infrastructure, capacity building, ethical regulation, and inter-agency collaboration. These measures are essential to ensure that AI enhances public safety without undermining human rights and institutional legitimacy.

Key Words: Artificial Intelligence, Criminal Psychology, Law Enforcement, Technology, Digital Policing

Introduction

The role of artificial intelligence in the present age cannot be overstated. The late 20th century into the 21st, has been marked by continuous digital and technological innovations that shape all forms of life. The advent of artificial intelligence (AI) is a product of such activity aimed at improving and enhancing human endeavors. The rapid surge of AI has seen it cut across multiple sectors, including healthcare, agriculture, business, and education (Sarzaeim, Mahmoud, Azim, Bauer, & Bowles, 2023). In security context, security agencies globally have begun to deploy the use of artificial intelligence technologies to predict crime, analyze evidence, enhance surveillance, and optimize resource deployment (Redden, Aagaard & Taniguchi, 2020).

The impact AI plays in crime trends becomes an important discussion at both individual and societal levels, and the role of security agencies in enforcing law and maintaining order. At the individual level, the psychology of criminals, their motivations, moral choices, and tactics is changing under the pressure of AI-enabled detection and prediction. This shift reflects a growing recognition that crime itself is becoming more sophisticated, requiring equally advanced strategies for detection and control (Ove & Orie 2025). Security agencies are beginning to explore these tools as part of their broader modernization efforts. These strengths of artificial intelligence allow law enforcement to move from reactive to predictive models of policing (Ikwuogu, 2025).
Moreover, this transformation challenges traditional criminal psychology by demanding that law enforcement understand not only human behavior but also how technology shapes offender decision-making. For example, criminals now

adapt by using AI themselves to mask digital footprints or exploit system vulnerabilities, escalating the arms race between law enforcement and offenders (Obidimma & Ishiguzo, 2023).

As a result, AI's dual role is underscored. It serves as both a tool for predicting and preventing crime and a factor reshaping criminal tactics and psychology. This interconnectedness calls for continuous innovation in law enforcement strategies and ethical considerations on AI deployment to safeguard human rights while maximizing public safety (Okeke, Agbonghae & Green, 2024).

The dual role of AI is particularly salient in the Nigerian context. On one side, criminals increasingly exploit AI-enabled technologies to facilitate sophisticated crimes such as cyber fraud, identity theft, and complex financial scams, making traditional investigative methods less effective (Obidimma, 2023; Adeoye, 2023). On the other, law enforcement agencies, including the Nigerian Police Force, are adopting AI-driven tools such as predictive policing, facial recognition, AI-based surveillance, and digital forensic analysis to preempt crimes and improve investigative accuracy (Ikwuogu, 2025; Adeoye, 2023).

For Nigeria, the implications are profound. Law enforcement must develop technical expertise, ethical frameworks, and psychological readiness to effectively engage with AI while also protecting civil liberties. At the same time, understanding how criminals perceive and respond to AI interventions is crucial for anticipating new forms of deviance. This intersection of technology, psychology, and crime offers a pressing area of inquiry, particularly given the limited empirical research on AI and criminal behavior in African contexts (Chukaieva & Matulienė, 2023; Asuquo & Sinha, 2025). It is against this premise that this study seeks to study the dual role of artificial intelligence on the psychological effects it plays on individuals to perpetuate crime, and the response and preparedness of the law enforcement agencies in combating crime in Nigeria.

Statement of the Problem

A central argument behind the invention of AI is that it seeks to surpass human limitations by providing next-level information, offering predictive power, superior pattern recognition, and scale of processing data to meet the expectations of the global age's dynamics. However, they also introduce challenges, such as biases in training data that can reinforce inequality, false positives that may undermine trust, and overreliance on algorithms that can weaken human judgment (Ezzeddine, Bayerl, & Gibson, 2023). AI has become a powerful tool in both the creation and prevention of crime, reshaping how criminals operate and how security agencies respond. However, this rapid evolution has also posed challenges, especially in countries like Nigeria, where technological infrastructure and regulatory frameworks are still developing.

Many security agencies struggle to keep pace with increasingly sophisticated AI-enabled crimes, while also dealing with ethical, legal, and operational hurdles in deploying AI for crime control. In recent years, technology has given rise to new and more sophisticated forms of crime that challenge traditional policing methods. From cyber fraud and identity theft to digitally coordinated violent crimes, criminals now use advanced tools that make them harder to track and stop (Nzeakor, Nwokeoma & John, 2022; Tuleun, 2024). The real challenge, therefore, is not just about adopting AI, but about understanding its double-edged nature: it can make policing smarter, but it can also push criminals to become more advanced. Without careful study, Nigeria risks facing a gap where technology advances faster than law enforcement capacity, and where human rights and trust in security institutions are overlooked (Effoduh, 2021; Chime, Okoroafor & Nworgu-Ikojo, 2025). Against this backdrop, the following research questions were formulated to guide the study:

(i) How does the use of AI influence the behavior, strategies, and psychology of criminals in Nigeria?
(ii) How responsive and prepared are law enforcement agencies, technically, psychologically, and institutionally, to utilize AI in combating crime in Nigeria?
(iii) What are the key challenges and ethical concerns associated with integrating AI into law enforcement practices in Nigeria?
(iv) What strategies can improve the effective and ethical use of AI in Nigeria's criminal justice system?

Theoretical Framework

This study is anchored on the Technological Determinism (Social Change) Theory. Technological Determinism is a socio-technical theory that posits technology as the primary driver of social change. It suggests that technological innovations inherently influence and shape societal structures, cultural norms, and human interactions. The theory holds that major shifts in technology can transform economies, political organizations, and social systems in ways that are often inevitable and linear. As such, society adapts to technology's progression, with technology dictating the direction and pace of social evolution (Burnett & Marshall, 2003; Williams, 1997).

From this perspective, technological advancement is viewed as an autonomous force that propels history forward. The development and integration of new tools, such as artificial intelligence, are seen as having a deterministic effect on how society, including law enforcement and criminal behaviors, functions. For instance, the introduction of AI technologies in policing can be expected to fundamentally alter law enforcement strategies, crime detection capabilities, and even offender tactics, irrespective of preceding societal frameworks.

Technological Determinism also emphasizes that as technology becomes stable and embedded, it shapes user behavior and social interactions. With AI, for example, the adoption of biometric systems, predictive analytics, and automated surveillance tools by police informs how policing is conducted, how criminals respond, and how public safety norms evolve. Consequently, the theory underscores the profound influence technology wields in transforming routine activities related to crime control and criminal psychology.

However, critics argue that Technological Determinism underestimates human agency and the socio-cultural factors that mediate technology's impact. Social relationships, political decisions, and cultural values simultaneously influence how technologies are developed, accepted, or resisted. Thus, while technology shapes society, society also shapes technology in a dynamic interplay. In contexts like Nigeria, where governance structures, infrastructure, and societal trust vary, the deterministic narrative must be tempered with recognition of these complexities.
Nevertheless, Technological Determinism remains highly relevant for this study as it frames AI as a crucial driver shaping the future of crime and law enforcement.

It accentuates the need to understand AI not merely as a tool but as a transformative force reshaping Nigerian policing systems, criminal behavior patterns, and societal expectations around security

Methodology

Research Design

This study adopts a qualitative exploratory design, appropriate for examining the emerging intersection between artificial intelligence (AI), criminal psychology, and law enforcement in Nigeria. Given the novelty of AI applications in Nigerian policing and the limited availability of primary data, the study emphasizes secondary data analysis supported by illustrative case studies and content analysis. This flexible design enables a broad yet in-depth exploration of the research questions (Bowen, 2009; Flick, 2014).

Data Sources

The study relied entirely on secondary data selected to ensure relevance to Nigeria's context.

Academic literature from reputable databases provided theoretical insights on AI, policing, and criminal psychology. Policy reports from Nigerian agencies like NITDA, the Ministry of Interior, and international bodies such as INTERPOL informed institutional readiness. Grey literature including think tank papers and technical briefs offered practical perspectives on emerging AI security issues. Media reports provided current insights on AI's use and public perception in Nigeria. Only sources from 2015 to 2025 were included, with older works used for foundational context. This diverse mix ensured a comprehensive understanding of AI's role in Nigerian law enforcement.

Data Collection Procedure

The collection of data for this study followed a structured keyword search strategy. Relevant documents were identified using terms such as "Artificial Intelligence and Law Enforcement in Nigeria", "AI and Criminal Psychology", "Digital Policing in Africa", and "AI Ethics in Law Enforcement." These keywords were applied across multiple academic databases, including JSTOR, ResearchGate, and Google Scholar, as well as policy repositories and credible news outlets. Documents were then screened for relevance to the research questions and to the specific Nigerian policing context. Priority was given to studies and reports that directly addressed the adoption of AI in law enforcement, its influence on criminal behavior, institutional capacity, and ethical concerns.

Data Analysis

Analysis followed a thematic approach, identifying recurring patterns across the literature. These themes were refined through multiple readings and cross-comparison of Nigerian and international contexts. Content analysis was used to review official and media reports, while illustrative case studies (e.g., EFCC's cybercrime monitoring tools, Lagos' facial recognition pilot, and drone surveillance initiatives) provided contextual grounding. Expert commentaries already published by Nigerian ICT leaders and law enforcement professionals were integrated to strengthen findings.

Ethical Considerations

The study adhered to ethical research standards by relying solely on publicly available and credible sources. Proper citation was maintained throughout to prevent plagiarism, and no confidential or classified materials were accessed. Findings were presented objectively, ensuring balance in interpreting AI's opportunities and risks for Nigerian law enforcement.

Findings and Discussion

The review of secondary data reveals that the adoption of artificial intelligence (AI) in Nigerian law enforcement is still in its early stages, with applications largely experimental and fragmented. Internationally, AI has been widely deployed in predictive policing, facial recognition, automated surveillance, and criminal profiling (Ferguson, 2017). In Nigeria, however, most applications have focused on cybercrime detection, digital forensics, and limited trials of surveillance systems in urban centers such as Lagos and Abuja (Adeoye, Akinde & Oluwaniyi 2025)

In response to the first research question on criminals' behavior, strategies and psychology, findings indicate that AI adoption has indirectly influenced criminal strategies. Criminals adapt quickly, often exploiting loopholes in digital systems. For instance, cybercriminals develop advanced phishing, identity theft, and hacking strategies to bypass AI-driven firewalls. This creates a psychological arms race between law enforcement and criminals, where both sides attempt to outsmart each other using technology (Kanu, Adidi & Kanu, 2024). Beyond technical adaptation, AI shapes the psychological mindset of offenders. The anonymity and sophistication provided by digital tools embolden criminals, giving them a sense of confidence and reduced fear of detection. For example, in Nigeria, phishing attacks have been shown not only to exploit system vulnerabilities but also to generate emotional distress and feelings of betrayal among victims, suggesting that criminals factor in psychological impact when designing their attacks (Adeyemo, David & Olabulo, 2024).

For victims and wider society, this trend generates fear and mistrust in digital systems, as people become aware that AI can be used not only for protection but also for exploitation. This duality highlights that AI does not merely change crime techniques; it reshapes the psychology of crime itself, altering motivation, opportunity, and perceptions of risk.

Regarding the second question on the responsiveness and preparedness of law enforcement agencies to utilize AI in combating crime, evidence shows that AI is currently being used by Nigerian agencies like the EFCC and the Nigeria Police Force, though largely for cybercrime monitoring and intelligence gathering. For example, AI-driven algorithms have been deployed to detect suspicious online financial transactions and phishing activities. However, unlike advanced contexts where AI is integrated into day-to-day policing, Nigeria still struggles with inadequate infrastructure, skills gaps, and unreliable electricity/internet networks (Eke, 2025). Beyond technical gaps, psychological preparedness remains low, as many officers lack confidence in digital systems and demonstrate resistance to technology-driven policing (Ogunlowo 2021; Ejimofo, 2025). Institutionally, there are limited policies, training frameworks, and resource allocations dedicated to AI adoption, meaning responsiveness is reactive rather than proactive. Together, these factors suggest that while Nigerian law enforcement is experimenting with AI, it is not yet fully responsive or prepared to integrate it effectively into crime control.

On the third research question, findings reveal that the challenges confronting AI adoption in Nigerian law enforcement extend beyond technical capacity. Ethical concerns remain central, particularly issues of surveillance and privacy violations, algorithmic bias, and fears of political misuse for monitoring opposition or targeting specific groups. Scholars argue that without strong ethical safeguards, AI technologies could entrench inequalities or fuel abuse of power (Adeleke & Amusa 2021). Another pressing challenge is limited funding and inadequate infrastructure, which restricts the acquisition, maintenance, and upgrading of AI-driven technologies. Nigeria's recurrent unreliable infrastructure, policy inertia, and weak ICT deployment have further slowed the integration of digital and other technological tools, such as AI for effective law enforcement (Yusuf & Okpara, 2021; Oluchukwu, 2022). Moreover, a critical shortage of skilled manpower persists, as only a small proportion of police personnel possess advanced ICT or AI-related competencies. This capacity gap means that even when equipment is available, effective deployment is inconsistent. The issue of public trust also remains a significant barrier. Many citizens perceive AI surveillance as a potential tool for harassment, wrongful profiling, or even state overreach. Research on digital policing in Nigeria shows that skepticism about fairness and transparency has weakened public cooperation and acceptance of technologically driven policing strategies (Nwachukwu, Adeyemo, Asije, & Odejide, 2023).

Findings related to the fourth research question suggest that effective adoption of AI in Nigerian law enforcement requires a multi-dimensional approach. There is an urgent need for comprehensive training and retraining of law enforcement officers. Beyond technical skills, this training must include modules on ethics, human rights, and the psychological implications of AI deployment, ensuring officers are confident and responsible in its use. The establishment of robust ethical and legal frameworks is essential. This includes guidelines on data privacy, surveillance limits, accountability, and mechanisms to guard against algorithmic bias. Legal scholars in Nigeria argue that without clear regulatory oversight, AI could be weaponized in ways that erode democratic freedoms and deepen public mistrust (Eboibi & Ogorugba, 2023). Infrastructure development is foundational; reliable ICT systems, stable electricity supply, and improved broadband penetration are prerequisites for sustained AI adoption. This requires coordinated investment by both government and private stakeholders.

Finally, collaboration and partnerships are necessary. Nigerian agencies must work with universities, AI research centers, and international bodies such as INTERPOL and UNODC to share best practices, access cutting-edge tools, and strengthen institutional preparedness.

Encouraging such collaborations will not only enhance capacity but also ensure that Nigeria's adoption of AI is globally competitive and contextually responsive.

Conclusion

The study demonstrates that artificial intelligence holds significant potential to transform law enforcement practices and reshape criminal psychology in Nigeria. While AI enabled tools offer improved capabilities for crime detection, cybercrime monitoring, and intelligence gathering, their impact remains constrained by infrastructural weaknesses, limited technical capacity, and insufficient regulatory oversight. Importantly, the study reveals that AI not only alters policing strategies but also influences offender psychology by increasing anonymity, reducing perceived risk, and fostering adaptive criminal behaviors. Anchored in Technological Determinism Theory, the findings underscore AI as a transformative force shaping patterns of crime and law enforcement responses, while also highlighting the mediating role of institutional capacity and ethical governance. The dual nature of AI as both a crime-facilitating and crime controlling tool, necessitates a balanced approach that integrates technological advancement with human judgment, ethical safeguards, and public accountability. The study concludes that for AI to effectively enhance security outcomes in Nigeria, there must be sustained investment in infrastructure, comprehensive training for law enforcement personnel, and the development of clear ethical and legal frameworks. Strengthening collaboration between law enforcement agencies, academic institutions, and international partners is essential to ensure that AI deployment promotes public safety, protects civil liberties, and reinforces trust in Nigeria's criminal justice system.

Recommendations

1. The study recommended that law enforcement agencies should invest in continuous monitoring of evolving criminal strategies, particularly in cybercrime, while developing psychological profiling tools that integrate AI insights to anticipate offender adaptation.
2. Nigerian law enforcement agencies must prioritize structured training programs, psychological readiness, and institutional reforms that strengthen technical competence and build officer confidence in AI-driven policing.
3. The Nigerian government, law enforcement agencies, and legal practitioners must collaborate to establish clear legal and ethical frameworks that regulate AI's use in the country, ensuring transparency, accountability, and safeguards against misuse, thereby building public trust and legitimacy.
4. Nigeria should enhance ICT infrastructure, promote inter-agency collaboration, and partner with global AI research institutions to align technological progress with local realities and sustainable crime control.

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