



Utilization of Artificial Intelligence in Combating Transnational Crimes Through the Indonesian Immigration System

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Abstract

Background: The rise of transnational crimes and digital technology challenges state security, while Indonesia's limited resources and manual immigration systems hinder crime prevention efforts.

Objective: This study aims to analyze the utilization of Artificial Intelligence (AI) in Indonesia's immigration system as a strategic instrument for combating transnational crimes from the perspectives of international law and national resilience.

Methods: The methodology employed in this study is a literature review, systematically examining reputable international journals, accredited national journals, and scholarly books discussing Artificial Intelligence, transnational crimes, international law, and immigration policies. The analysis applies a normative juridical and conceptual approach to assess the compatibility of AI applications with international legal instruments, such as the *United Nations Convention against Transnational Organized Crime* and the *United Nations Convention against Corruption*, as well as Indonesia's national legal framework.

Results: The novelty of this research lies in integrating Artificial Intelligence, international law on transnational crime, immigration functions, and national resilience into a unified analytical framework. AI is viewed not only as an administrative tool but also as a strategic component of national security through border monitoring, risk analysis, biometric identification, and predictive immigration intelligence. The study finds that AI can improve foreign national supervision, accelerate early detection of transnational crimes, and strengthen international cooperation, although its implementation still requires stronger legal frameworks, human rights protection, and clear accountability mechanisms.

Conclusion: With an appropriate approach, Artificial Intelligence can serve as a strategic instrument to strengthen Indonesia's national resilience through an adaptive, modern, and security-oriented immigration system.

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INTRODUCTION

Globalization, the development of information technology, and the increase in cross-border human mobility have driven changes in the nature of crime, making it increasingly complex, organized, and transnational. Crimes such as human smuggling, human trafficking, cross-border terrorism, cybercrime, travel document forgery, and money laundering can no longer be understood as standalone conventional crimes but rather as multidimensional threats to state sovereignty, legal stability, and national resilience. In response to these dynamics, the

international legal regime, particularly the United Nations Convention against Transnational Organized Crime and other related international instruments, emphasizes the importance of cross-border cooperation, strengthening border systems, and enhancing national capacity to prevent and combat transnational crime.

Indonesia, as an archipelagic state with a strategic position along international migration routes, faces significant challenges in managing cross-border human movement. The high volume of incoming and outgoing individuals, both through official and unofficial channels, makes border areas and the immigration system vulnerable to exploitation by transnational criminal networks. Various studies show that transnational crime often exploits gaps in immigration supervision, weak data integration among agencies and countries, and limitations in human resources and law enforcement technology. This condition directly affects national resilience, as it has the potential to weaken state security, social order, economic stability, and public trust in state institutions.

In the context of immigration, the specific problem faced is the limitation of conventional systems in detecting, analyzing, and preventing transnational crimes that are increasingly adaptive to technological developments. Manual document inspection, analysis based on individual officers' experience, and fragmented inter-agency information systems are often unable to keep pace with the speed, scale, and complexity of cross-border criminal networks. These limitations indicate an urgent need for a more adaptive, data-driven, and integrated approach.

Several previous studies analyzed through international and national literature reviews show that Artificial Intelligence (AI) is beginning to be utilized in migration governance and border management in various countries. This utilization includes biometric identification systems, big data processing for risk analysis, automated traveler assessment, and smart technology-based border surveillance. Beduschi's (2021) study affirms that AI has the potential to improve the efficiency of international migration management and support evidence-based policy approaches in immigration decision-making. Other research conducted in Europe and North America also demonstrates the effectiveness of AI in detecting identity fraud, identifying high-risk migration patterns, and supporting the prevention of terrorism and transnational organized crime.

Nevertheless, the literature review results also reveal several limitations and serious issues. The use of AI in immigration poses risks of human rights violations, particularly concerning personal data protection, the potential for discrimination arising from algorithmic bias, and the lack of transparency and accountability in automated decision-making. Furthermore, most studies still focus on the context of developed countries and have not comprehensively linked the use of AI with international legal frameworks and national resilience perspectives, especially within developing countries such as Indonesia.

Based on this gap, this research offers a conceptual approach that positions Artificial Intelligence as a strategic instrument in immigration-based transnational crime prevention grounded in international law and national resilience perspectives. Through a literature review of international journals, national journals, and academic books, this study analyzes how AI can strengthen immigration functions as the guardian of the nation's gateway, a supporter of cross-border law enforcement, and an essential element of the national resilience system.

This approach emphasizes the importance of harmonizing technology utilization, international legal principles, human rights protection, and national resilience interests. Thus, AI is not understood merely as a technical or administrative tool but as part of a legal and national security policy aimed at strengthening the state's capacity for the detection, prevention, and response to transnational crimes in a sustainable, legally sound, and democratically legitimate manner.

The increasing complexity of transnational crimes, alongside globalization, digital technological advancements, and heightened cross-border human mobility, poses serious challenges for states in maintaining legal sovereignty, security, and national resilience. In the context of Indonesia as an archipelagic state with high levels of human mobility, the limitations of conventional immigration systems and fragmented inter-agency supervision create opportunities for transnational criminal networks to exploit legal and institutional gaps. This situation demands a new approach that is not solely based on conventional law enforcement but also utilizes smart

technology capable of supporting early detection, prevention, and adaptive state responses in alignment with international legal frameworks.

Based on this background, this research formulates the following problems: 1) How does transnational crime pose a challenge to international law and serve as a non-traditional threat to Indonesia's national resilience. 2) What is the role of immigration functions within the international legal framework in preventing and combating human mobility-based transnational crimes. 3) How does the utilization of Artificial Intelligence in the global immigration system contribute to combating transnational crimes in Indonesia. 4) How can the application of Artificial Intelligence in Indonesia's immigration system strengthen border surveillance and immigration law enforcement in accordance with international legal principles and human rights protection?

METHOD

Type and Approach of Research

This research employed a qualitative method based on a literature review with a normative juridical approach, aiming to conceptually and normatively analyze the utilization of Artificial Intelligence in combating immigration-related transnational crimes and its implications for Indonesia's national resilience. The library research was conducted through a systematic review of reputable international journals, accredited national journals, academic books, and reports from international institutions discussing AI, transnational crime, international law, and immigration policies to identify theoretical developments, legal norms, policy practices, and global trends in migration and cross-border security management. Normative juridical analysis was used to examine the conformity of AI utilization in the immigration system with international legal instruments and Indonesia's national legal framework, thereby positioning AI not only as a technical innovation but also as part of state legal and security policy that must align with the principles of state sovereignty, human rights protection, and the strengthening of national resilience.

Theoretical Basis

Theoretically, this research was based on several main frameworks:

a. Theory of Transnational Crime: Transnational crime was understood as crime that transcends national borders and involves cross-jurisdictional networks, as formulated in the United Nations Convention against Transnational Organized Crime. In the immigration context, transnational crime included human smuggling, human trafficking, travel document forgery, the escape of cross-border criminals, and the mobility of international terrorism actors.

b. Theory of International Law and Migration Governance: The international legal framework served as the basis for examining state authority in border management, human rights protection, and international cooperation. This theory was used to assess how the use of AI in immigration must remain aligned with the principles of state sovereignty, non-discrimination, due process of law, and personal data protection.

c. Theory of National Resilience: National resilience was understood as the dynamic condition of a nation reflecting its ability to face threats, challenges, obstacles, and disturbances, both from within and outside the country. In this research, the use of AI in the immigration sector was analyzed as an instrument for strengthening national resilience, particularly in the security, legal, and technological dimensions.

d. Theory of Technology and Digital Governance: This theory explained the role of Artificial Intelligence as a data-driven decision-making tool in modern migration governance, including opportunities for efficiency, risk prediction, as well as the potential for algorithmic bias and human rights violations.

RESULTS AND DISCUSSION

Results

Transnational Crime as a Challenge to International Law and Indonesia's National Resilience

Transnational crime is a global legal and security phenomenon that has developed alongside the intensification of globalization, border liberalization, and advances in information

and communication technology. From the perspective of international law, the United Nations Convention against Transnational Organized Crime defines transnational crime as a criminal offense involving more than one country, whether in the planning, execution, or impact stages (United Nations, 2004). These forms of crime include, among others, human smuggling, human trafficking, cross-border terrorism, cybercrime, travel document forgery, and money laundering.

The cross-border nature of transnational crime makes it not only a matter of national criminal law but also an issue affecting legal stability and interstate relations. Such crimes typically exploit differences in legal jurisdiction, limitations in cross-border supervision, and gaps in national legal systems that are not yet fully integrated. Therefore, addressing them requires a comprehensive legal approach and strong international cooperation.

In the Indonesian context, the geographical characteristics of an archipelagic state with more than 17,000 islands and a strategic position on international migration routes make Indonesian territory vulnerable to exploitation by transnational criminal networks. This condition is reinforced by extensive sea and air routes that serve as entry and exit points to the country. Studies by the United Nations Office on Drugs and Crime show that the Southeast Asian region, including Indonesia, has a relatively high level of cross-border crime, particularly related to human smuggling and human trafficking.

One significant form of transnational crime in Indonesia is human smuggling through illegal migration routes. This crime typically involves organized criminal networks that manage cross-border movements by exploiting weaknesses in border surveillance and immigration systems. The involvement of organized criminal networks in human trafficking through illegal migration routes increases the complexity of legal enforcement and demands strengthened international cooperation and adaptive legal approaches at the national level (Gibran & Khusairy, 2023).

The challenges of enforcing laws against transnational crime in Indonesia are also clearly visible in maritime border areas. Limited interagency coordination, overlapping institutional authorities, and obstacles in international cooperation often reduce the effectiveness of law enforcement. Additionally, technical issues such as unresolved border demarcation also act as inhibiting factors in efforts to combat transnational crime in Indonesian waters.

The implications of transnational crime for Indonesia's national resilience are multidimensional. Crimes such as human trafficking, drug smuggling, and identity document abuse not only affect criminal law enforcement but also undermine the social and economic stability of communities. These criminal practices often cause significant losses, both for direct victims and for local social structures, thereby potentially weakening social resilience and the state's legitimacy in ensuring public security. Studies on efforts to eradicate drug-related crimes as forms of transnational crime show that international cooperation is a key element in addressing cross-border and organized crime (Nalole et al., 2023).

From the perspective of national resilience, threats to the state are no longer solely military in nature but have evolved to include non-traditional threats such as human security, border security, economic stability, and the state's legal legitimacy (Buzan et al., 1998). Therefore, transnational crime must be viewed as a strategic threat that demands cross-sectoral policy responses.

In the context of the national legal system, the state also faces challenges in formulating a legal framework that is responsive to the dynamics of transnational crime. Harmonization between national law and international legal instruments has become increasingly important, especially in handling cases involving perpetrators and modus operandi across jurisdictions. This challenge is evident in efforts to prevent criminals from exploiting differences in legal authority to evade national law enforcement processes (Al Amien & Widayat, 2021).

Thus, combating transnational crime in Indonesia must be positioned as part of a comprehensive national resilience strategy. This approach includes strengthening international cooperation, harmonizing national law with international legal instruments, enhancing the technological capacity of law enforcement agencies, and reinforcing interagency coordination. The integration of the national legal system with effective immigration supervision is a key element in responding to the challenges of cross-border crime while strengthening Indonesia's national resilience against evolving threats.

The Function of Immigration within the International Legal Framework and Transnational Crime

Immigration is one of the fundamental instruments in both the international and national legal systems directly related to regulating the cross-border movement of people. In international law, the state's authority to regulate the entry and exit of foreign nationals is recognized as part of the principle of state sovereignty. This principle is reflected in various international legal instruments, including the International Covenant on Civil and Political Rights, which acknowledges the state's right to impose restrictions on the movement of people as long as such measures are implemented lawfully, proportionally, and without violating human rights principles.

In contemporary international legal developments, the function of immigration is no longer understood merely as an administrative function but also as part of the legal regime for security and law enforcement. Guild (2013) explains that migration policies and border surveillance are legal instruments used by states to manage security risks arising from increased cross-border human mobility. In this context, immigration serves as an initial screening mechanism for individuals potentially involved in transnational criminal networks, including human trafficking, migrant smuggling, terrorism, and cross-border organized crime.

International literature also shows that migration routes are often exploited by transnational criminal networks to disguise illegal activities through seemingly lawful travel mechanisms. Miller (2013) affirm that border surveillance and immigration control are crucial components in strategies to prevent human trafficking and migrant smuggling, as these crimes depend on perpetrators' ability to cross national borders. Therefore, the immigration function is an integral part of cross-border crime prevention efforts, not only at the enforcement stage but also at the early detection stage.

However, several studies indicate that conventional immigration systems face structural limitations in dealing with increasingly complex transnational crime. Beduschi (2021) explains that reliance on manual inspections, limited data-driven analysis, and weak cross-border information exchange make immigration systems vulnerable to exploitation by criminal networks. This condition creates opportunities for travel document forgery, visa abuse, and manipulation of lawful migration routes for organized criminal purposes.

In the Indonesian context, the immigration function faces more complex challenges due to the country's geographical characteristics as an archipelagic state with extensive international crossing points and a high volume of foreign national movement. Indonesian immigration authorities are not only required to perform administrative and supervisory functions but also play a role in maintaining legal sovereignty and national security. Immigration supervision contributes significantly to preventing transnational crime, particularly in detecting and restricting the movement of individuals involved in cross-border organized crime.

The function of foreign national supervision is an integral part of the law enforcement system with a strong preventive orientation. Immigration Offices in Indonesia hold an important role in monitoring the entry and exit of foreign nationals and implementing effective administrative controls as an initial effort to prevent legal violations, including cross-border crimes. This supervision includes document inspection, restrictions on stay permits, and tracking the whereabouts of foreign nationals, especially those suspected of having links to transnational criminal networks (Al Amien & Widayat, 2021).

The role of immigration supervision becomes increasingly strategic when transnational crime seeks to exploit loopholes in supervisory systems to evade national legal processes, such as through identity fraud, manipulation of travel documents, and visa abuse. In this context, the effectiveness of foreign national supervision as part of administrative law enforcement is not limited to immigration regulations alone but also contributes to broader national security, particularly in preventing cross-border criminal activities that use human mobility as an operational tool.

The immigration function is also inseparable from the state's obligation to respect and protect human rights. Overly repressive immigration policies have the potential to violate fundamental rights, particularly for vulnerable groups such as refugees and asylum seekers. Therefore, strengthening the immigration function must be balanced with the principle of human

rights protection, as affirmed in various studies on international migration law (Beduschi, 2021).

Thus, the function of immigration within the international legal framework and transnational crime prevention encompasses administrative, legal, and security dimensions simultaneously. Immigration serves as an instrument of migration control, a mechanism for preventing cross-border crime, and a means of protecting legal sovereignty and national resilience. Strengthening this function requires an integrated approach involving international law, national law, interstate cooperation, and institutional capacity development so that the immigration system can respond effectively and sustainably to the dynamics of transnational crime.

Artificial Intelligence in Global Immigration and Its Implications for Combating Transnational Crime in Indonesia

The development of Artificial Intelligence (AI) in recent years has shifted the paradigm of combating transnational crime from conventional enforcement-oriented approaches toward predictive, preventive, and data-driven approaches. Jejelola (2024) affirms that AI has a strategic role in eradicating transnational crime because of its ability to integrate big data analysis, pattern recognition, and cross-jurisdictional information processing quickly and accurately. In this context, AI is no longer understood merely as a technical tool but also as a global legal policy instrument supporting the implementation of international legal regimes in addressing cross-border crime.

Jejelola (2024) further highlights that transnational crimes such as human trafficking, migrant smuggling, terrorism, and organized crime possess cross-border network characteristics that are difficult to address through fragmented national law enforcement mechanisms. AI enables states to map these criminal networks through analyses of interpersonal relationships, travel patterns, financial transactions, and the use of travel documents. This capacity strengthens international cooperation as mandated by the United Nations Convention against Transnational Organized Crime, particularly in the areas of information exchange and crime prevention before such crimes produce broader cross-border impacts.

In its development, the utilization of Artificial Intelligence has also become an integral part of the transformation of migration governance and border management in various countries. In international legal literature and contemporary migration studies, AI is understood as a strategic technology capable of enhancing state capacity to manage human mobility, detect security risks, and respond to transnational crime threats more effectively through data-driven approaches. Beduschi (2021) affirms that AI has the potential to revolutionize international migration management through automated identity verification, big data-based risk analysis, and faster, more standardized administrative decision-making. The utilization of this technology marks a paradigm shift in immigration from a reactive approach toward a predictive and preventive approach.

In the context of combating transnational crime, AI functions as a force multiplier that expands state capacity for early detection and risk-based prevention. Bor (2023) show that the application of AI in border surveillance enables the identification of cross-border movement patterns that were previously difficult to detect through conventional mechanisms. Machine learning-based analysis can connect travel data, document histories, and mobility behavior to identify individuals' connections to cross-border organized criminal networks. Thus, AI directly contributes to the transformation of law enforcement from a reactive approach toward a predictive and preventive approach, which is highly relevant in addressing adaptive and dynamic transnational crime.

In line with this, Kabir (2023) emphasize that integrating AI with digital border surveillance systems enables real-time security risk management through big data analytics and cross-jurisdictional system interoperability. This approach significantly enhances state capacity to respond to threats of human smuggling, human trafficking, and travel document forgery, which often exploit gaps in interstate coordination. From an international law perspective, strengthening this technological capacity contributes to the implementation of state obligations as regulated under the United Nations Convention against Transnational Organized Crime, particularly in the areas of prevention and international cooperation.

In the realm of immigration and border security, AI serves as a supporting technology that strengthens the function of human mobility surveillance. The use of predictive algorithms in border risk assessments allows immigration authorities to identify high-risk individuals based on a combination of travel data, biometric data, and behavioral patterns. This aligns with Jejelola's (2024) view that AI enhances state capacity to detect the movement of transnational crime perpetrators who disguise illegal activities through lawful migration routes. Thus, an AI-based immigration system functions as the initial layer of the state's legal defense against cross-border threats.

Nevertheless, the use of AI in the context of border security also raises significant legal and ethical issues, especially when the technology is categorized as a high-risk AI system. Kalodanis (2025) affirm that high-risk AI systems, including deception-detection applications, have serious implications for human rights, particularly the rights to privacy, personal data protection, and due process of law. In the immigration context, the use of deception-detection technology to assess the credibility of border crossers, asylum seekers, or visa applicants has the potential to produce discriminatory and non-transparent administrative decisions.

The study by Kalodanis (2025) also shows that AI-based deception-detection technology still faces scientific limitations, including inconsistent accuracy, data bias, and the system's inability to explain the basis of algorithmic decision-making. When such technology is used in immigration and border security contexts, there is a risk that decisions directly affecting individual freedom of movement may be made based on unverified technological assumptions. This condition potentially contradicts the principles of non-discrimination and the presumption of innocence guaranteed under international human rights law.

From the perspective of international law, the use of high-risk AI in immigration requires the application of the precautionary principle and state accountability. The state remains legally responsible for any administrative decisions generated with AI assistance, even when those decisions are based on automated systems. Therefore, the literature emphasizes the importance of human oversight at every stage of AI implementation as a control mechanism for algorithm-based decisions (Kalodanis et al., 2025). This principle is crucial to ensure that AI implementation does not erode the legitimacy of the rule of law.

In the context of national resilience, the dilemma between security effectiveness and human rights protection becomes increasingly evident. AI enables states to significantly enhance early detection and prevention capacities for transnational crime; however, without a clear legal framework, this technology may create new threats to social cohesion and public trust. National resilience, within a non-traditional security approach, is determined not only by the state's ability to address external threats but also by internal legitimacy and adherence to the principles of the rule of law.

Therefore, the integration of AI into Indonesia's immigration and border security system must be situated within an international legal framework that balances security interests and human rights protection. AI should be understood as a supporting instrument for law enforcement and national resilience, not as a substitute for legal judgment and state responsibility.

The experiences of developed countries show that the use of AI in immigration has become part of strategic public policy. Canada, Germany, the United States, and the European Union have adopted AI to improve the efficiency and consistency of administrative decision-making. In Canada, algorithmic decision-making systems are used to screen visa and immigration applications to enhance efficiency and decision consistency (Molnar & Gill, 2018). In Germany, AI-based facial recognition and dialect analysis are applied in identity verification processes for asylum seekers. Meanwhile, the United States utilizes AI to strengthen border security through risk assessment and anomaly-pattern detection based on real-time data.

At the regional level, the European Union has developed the Smart Borders concept through the integration of AI, biometrics, and cross-country database interoperability systems such as the Schengen Information System (SIS), the Entry/Exit System (EES), and the European Travel Information and Authorisation System (ETIAS) (Andreou, 2023). These systems enable real-time information exchange, early detection of high-risk individuals, and prevention of illegal border crossings, thereby affirming AI as a strategic instrument for regional security based on

international cooperation.

Table 1. Comparison of Artificial Intelligence Implementation in Immigration

Country / Region	Form of AI Utilization	Main Purpose	Scope of Application	Implications for Security and Immigration Governance
Canada	Algorithmic decision-making in visa and immigration application screening	Improving efficiency and consistency of administrative decisions	Visa and immigration application selection and assessment process	Accelerates immigration administrative processes and reduces decision inconsistencies, but raises issues of algorithmic transparency and accountability
Germany	AI-based facial recognition and dialect analysis	Identity verification and determining country of origin for asylum seekers	Asylum seeker screening process and identity validation	Strengthens identity verification and prevents misuse of asylum status, while raising ethical debates and human rights protection concerns
United States	AI for risk assessment and real-time data-based anomaly pattern detection	Strengthening border security and preventing cross-border threats	Traveler screening, cargo inspection, and border surveillance	Enhances early detection of terrorism threats and transnational crime, while maintaining human oversight in final decisions
European Union	Smart Borders concept integrating AI, biometrics, and database interoperability	Regional border security and prevention of illegal crossings	External border management and data exchange among member states	Strengthens regional security through international cooperation, early detection of high-risk individuals, and cross-border mobility monitoring

The effectiveness of AI implementation in immigration cannot be separated from the Integrated Border Management (IBM) framework as a holistic border management approach. Nor (2024) affirm that AI technology will produce a significant impact only if it is integrated into a system that emphasizes interagency coordination, data interoperability, and cross-border cooperation. This confirms that AI is not merely a technical solution but also a public policy instrument requiring an adequate institutional and legal framework.

From an international law perspective, the use of AI in immigration reflects the strengthening of collective security approaches and transnational governance. AI serves as a supporting instrument for implementing the United Nations Convention against Transnational Organized Crime and its protocols, as well as United Nations Security Council resolutions on counterterrorism that encourage strengthening border surveillance and intelligence sharing.

However, academic discourse also highlights legal and ethical challenges, such as accountability for automated decisions, algorithmic transparency, personal data protection, and the risk of discrimination. Visa risk-classification algorithms can produce racial bias and systemic discrimination. This finding is reinforced by Eubanks (2018) and Wachter (2021), who affirm that algorithms risk reproducing structural inequalities if not adequately supervised.

In the Indonesian context, the use of AI in immigration has high strategic relevance given the country’s geographical position and vulnerability to transnational crime based on human mobility. The conventional immigration system has limitations in addressing the complexity of

these threats. AI utilization has the potential to strengthen immigration intelligence functions through big data-based risk analysis, cross-agency integration, and predictive detection of suspicious movements. AI-based biometric technology also increases the accuracy of individual identification and helps prevent identity fraud.

From the perspective of international law and national resilience, the utilization of AI in Indonesian immigration must be positioned as part of a national strategy to address nontraditional threats. Lembaga Ketahanan Nasional Republik Indonesia affirms that transnational crime is a multidimensional threat affecting state stability. AI enables the enhancement of early detection and adaptive prevention capacity, allowing immigration to function not only as an administrative institution but also as a strategic actor within the national resilience system.

However, the effectiveness of AI utilization heavily depends on the readiness of the national legal framework, data quality, and system interoperability. Without comprehensive regulation, this technology has the potential to violate human rights and weaken policy legitimacy. Therefore, a normative juridical approach based on international law is important to ensure that AI implementation aligns with international obligations, the principles of the rule of law, and democratic values.

By integrating AI, international law, immigration, and national resilience, Indonesia has a strategic opportunity to build a modern, responsive, and sustainable security-oriented immigration system. Technology in this context is not an end in itself but rather a legal policy instrument directed toward balancing the protection of state sovereignty, national security, and human rights.

Discussion

Application of Artificial Intelligence in the Indonesian Immigration System

Digital transformation in immigration governance is a strategic state response to the increasing complexity of human mobility and transnational crime. In this context, Artificial Intelligence is positioned not merely as an administrative aid but as a strategic state instrument to strengthen border surveillance, law enforcement, and national resilience. The application of AI in the Indonesian immigration system is becoming increasingly relevant given Indonesia's geographical characteristics as an archipelagic state, the high volume of cross-border human traffic, and the limited capacity of conventional system-based supervision.

The utilization of AI in immigration law enforcement marks a paradigm shift from conventional administrative approaches toward a risk-based border management system. Hamdi (2024) affirm that AI functions as a strategic instrument in immigration law enforcement by increasing data-processing speed, decision-making accuracy, and early detection capability for cross-border immigration violations.

Conceptually, AI enables the immigration system to shift from a reactive approach toward a risk-based and predictive governance model. Through big data processing, AI algorithms can analyze travel data, visa history, biometric data, and cross-agency information to identify movement patterns potentially related to transnational crime. This approach aligns with global developments in border security management that emphasize the use of intelligent analytics and AI technology to improve accuracy and efficiency in human-traffic surveillance and real-time threat detection (AI-enabled border management technologies), which are increasingly adopted by many countries in the context of migration management and border security (Rinaldi & Teo, 2025).

In immigration practice, the application of AI has the potential to strengthen Indonesia's immigration intelligence functions. Machine learning-based systems can perform risk profiling of international travelers without relying entirely on the intuition or individual experience of officers. The Automating Immigration and Asylum report notes that the use of AI in migration management can enhance state capacity to detect anomalies in travel documents, overstay patterns, and abuse of stay permits, which often serve as entry points for cross-border organized crime. For Indonesia, strengthening this immigration intelligence function is crucial to preventing human smuggling, human trafficking, and the movement of transnational criminal actors.

Furthermore, AI-based biometric technologies such as facial recognition and fingerprint

recognition play a crucial role in preventing identity fraud and the use of multiple travel documents. A study by Muhammad (2025) affirms that integrating biometrics with AI can significantly improve the accuracy of individual identification, even under conditions of high mobility. In the context of Indonesian immigration, this technology can strengthen the supervision of foreigners at Immigration Checkpoints (Tempat Pemeriksaan Imigrasi [TPI]) and support more precise and integrated immigration law enforcement.

Saragih (2025) affirm that the integration of biometrics, machine learning, and facial recognition in the immigration system has improved the accuracy of identity verification and reduced the risk of document abuse. These findings indicate that AI functions as an early warning system in border security while also supporting international cooperation through data sharing with agencies such as INTERPOL.

From an international law perspective, the utilization of AI in immigration also supports the implementation of state obligations in preventing transnational crime as regulated in the United Nations Convention against Transnational Organized Crime. AI enables states to enhance international cooperation through faster and more standardized data and information sharing, particularly in tracking the movement of individuals affiliated with cross-border criminal networks. Thus, an AI-based immigration system functions not only at the national level but also as part of global migration governance.

However, the application of AI in the Indonesian immigration system also presents significant legal and ethical challenges. One major issue is the potential for algorithmic bias, which can result in discrimination against certain groups based on nationality, race, or social background. Benjamin's (2023) research emphasizes that smart technology is not neutral but reflects the values and biases embedded in the data and system design. In the immigration context, algorithmic bias has the potential to violate the principles of nondiscrimination and equality before the law as guaranteed under international human rights instruments.

Additionally, the use of AI in immigration decision-making raises issues of accountability and transparency. Administrative decisions generated by automated systems risk being difficult to explain (the black box problem), making it difficult for individuals to object or obtain effective legal protection. Therefore, international legal literature emphasizes the importance of the principles of human oversight and explainable AI in every application of AI that directly affects individual rights (Floridi et al., 2018). These principles are crucial to ensuring that the application of AI in Indonesian immigration remains aligned with the principles of the rule of law and due process of law.

From the perspective of national resilience, the application of AI in the Indonesian immigration system must be understood as part of a strategy to address nontraditional threats. Transnational crime not only threatens border security but also national social, economic, and political stability. AI enables the state to enhance its capacity for early detection and sustainable threat prevention without relying solely on coercive approaches. In other words, AI functions as a force multiplier within an adaptive, technology-based national security system.

Thus, the application of AI in the Indonesian immigration system has great potential to strengthen efforts to combat transnational crime and enhance national resilience. However, the effectiveness and legitimacy of this application heavily depend on regulatory readiness, data quality, and the state's commitment to balancing security interests with human rights protection. AI should not be understood as a standalone technocratic solution but as a legal policy instrument that must be carefully integrated into national and international legal frameworks.

The successful application of AI in immigration is largely determined by the institutional governance and normative framework regulating it. Nor (2024) identify that, without effective cross-agency coordination, AI could potentially create fragmentation of authority and overlapping decision-making processes. Therefore, AI implementation needs to be placed within an Integrated Border Management (IBM) framework that emphasizes three layers of coordination: internal coordination among law enforcement agencies, cross-sectoral coordination with technology and public policy stakeholders, and cross-border coordination through bilateral or regional cooperation.

An important implication of these findings for Indonesia is that the application of AI in the immigration system cannot stand alone as a technological innovation but must be linked to border

governance reform and the strengthening of international cooperation. Without such integration, AI risks merely increasing administrative efficiency without providing a significant impact on combating transnational crime. Conversely, when integrated systemically, AI has the potential to strengthen national resilience by enhancing state capacity to sustainably maintain legal sovereignty, border security, and social stability.

Thus, this discourse affirms that AI in immigration must be understood as part of a comprehensive legal and national security strategy. This approach positions technology as a supporting instrument for legal policy, not as a substitute for the state's role in ensuring legal certainty, human rights protection, and the effectiveness of law enforcement against transnational crime.

CONCLUSION

This research demonstrates that the utilization of Artificial Intelligence (AI) in the Indonesian immigration system has significant strategic potential in combating transnational crime and strengthening national resilience. The results of the literature review and normative juridical analysis affirm that AI can enhance the effectiveness of border surveillance through data-driven risk analysis, biometric identification, detection of cross-border crime patterns, and the strengthening of predictive and preventive immigration intelligence functions. With this approach, the limitations of conventional immigration systems, which depend on manual inspections and human resources, can be overcome more adaptively and efficiently.

The findings of this research answer the problem formulation by demonstrating that AI functions not only as an administrative instrument in immigration services but also as a strategic element of the national security system aligned with the international legal regime, particularly the United Nations Convention against Transnational Organized Crime. The utilization of AI in immigration contributes to the prevention of human smuggling, human trafficking, travel document forgery, and the movement of transnational criminal actors, while also strengthening international cooperation through data and intelligence sharing. From the perspective of national resilience, AI acts as a force multiplier that supports the state's capacity to address non-traditional threats sustainably.

However, this research also affirms that the implementation of AI in immigration carries legal and ethical risks, particularly concerning the protection of human rights, the potential for algorithmic bias, transparency in decision-making, and state accountability. Therefore, the utilization of AI must be situated within a clear legal framework that ensures human oversight, personal data protection, and compliance with the principles of non-discrimination and due process of law to avoid undermining the legitimacy of the rule of law and public trust.

As a direction for future research development, empirical studies on the concrete implementation of AI in the Indonesian immigration system, analyses of national regulatory readiness, and comparative studies of best practices in other countries are needed to formulate an effective, accountable, and resilience-oriented governance model for AI in immigration that also protects human rights.

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