

Juridical Analysis Of The Effectiveness And Security Of Autogate In The Enforcement Of Immigration Law In Indonesia (A Research Study In Batam City)

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ABSTRACT

Implementing the Autogate system at the Batam Centre Immigration Checkpoint (TPI) is part of the modernisation of the immigration service system that aims to improve efficiency and security in monitoring the entry and exit of people in border areas. However, the effectiveness and reliability of this system still leave legal and technical issues, such as biometric data verification gaps, the absence of specific technical regulations, and limited human resources and infrastructure. This study aims to analyse the legal arrangements and implementation of the Autogate system in supporting the immigration inspection process, evaluate its security in preventing immigration law violations, and examine the obstacles and implications for law enforcement and protection of state sovereignty in border areas, especially in Batam City. The methods used are normative juridical and empirical juridical approaches, with data collection techniques through literature studies and direct interviews with immigration officers at TPI Batam Centre. The analysis was conducted using the framework of justice theory (John Rawls), legal system theory (Lawrence M. Friedman), and legal certainty theory (Sudikno Mertokusumo). The result shows that normatively, the Autogate system has a legal basis in Law No. 6 of 2011 and Minister of Law and Human Rights Regulation No. 9 of 2024. However, there is still a lack of technical operational regulation. Empirically, the system has been proven to improve inspection efficiency, but faces security challenges such as the risk of identity forgery and technical glitches. The research recommends regulatory harmonization, technology strengthening, and officer capacity building so that Autogate truly becomes an effective and legitimate instrument in supporting immigration law enforcement and maintaining state sovereignty.

Keywords: Autogate, Immigration, Law Enforcement, Legal Certainty, System Security, TPI Batam Center.

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INTRODUCTION

Globalisation has significantly influenced the dynamics of human movement across borders. Due to the growing international mobility, modern, efficient, and secure immigration systems are necessary in all countries to protect national sovereignty and facilitate the seamless movement of products, people, and services (Fauzan, 2021). In the Indonesian context, border areas are the most susceptible to immigration law violations, necessitating rigorous supervision through Immigration Checkpoints (TPIs).

Batam City is a strategic region that borders Malaysia and Singapore. This region serves as a primary entry and departure point for Indonesian citizens and foreigners due to the substantial volume of human traffic at international ports, including Batam Centre, Sekupang, and Harbour Bay (Rahmawati, 2020). Whether for labour, tourism, or trade, thousands of individuals traverse these TPIs daily. This situation necessitates the provision of rapid, precise immigration services that are accompanied by a high level of security in order to avert the occurrence of transnational crimes, including human smuggling, drug trafficking, and terrorism (Kholfi, 2019).

The Autogate system has been implemented by the Directorate General of Immigration in order to address these challenges. Autogate is a biometric-based automated surveillance technology that employs facial recognition and fingerprint scanning to confirm the identity of border crossers. The inspection process can be completed in mere seconds with this technology, which is significantly more efficient than manual methods that require a significantly longer duration (Pratama, 2018). In addition, this system enhances inspection accuracy, reduces the likelihood of human error, and promotes transparency in immigration services (Wibowo, 2019).

From a normative perspective, the implementation of Autogate is underpinned by a robust legal framework, specifically Law No. 6 of 2011 regarding Immigration, which mandates that the government must deliver immigration services that are efficient, secure, and precise (Law No. 6 of 2011). Moreover, the Minister of Law and Human Rights Regulation No. 44 of 2015, which pertains to the Procedures for Immigration Inspections at the Terminals of Detention (TPI), also endorses the incorporation of contemporary technology in the realm of immigration inspections (Permenkumham No. 44 of 2015). Nonetheless, at the level of implementation, this system encounters numerous challenges, including inadequate infrastructure, cybersecurity vulnerabilities, deficiencies in biometric verification, and insufficient preparedness of human resources (Rahmawati, 2020; Fauzan, 2021).

Prior research has underscored that although adopting biometric technology can enhance efficiency, its efficacy is frequently undermined by insufficient integration of technical regulations and limited manual supervision (Pratama, 2018; Rahmawati, 2020). In numerous instances, the employment of fraudulent documents has been observed to effectively circumvent the Autogate system, attributable to vulnerabilities in biometric verification (Directorate of Immigration, 2022). This scenario suggests that the system's reliability is contingent upon establishing thorough operational guidelines and sufficient human supervision.

Moreover, the escalating intricacies associated with transnational crime necessitate that the Autogate system exhibits resilience against cyber threats. The theft of biometric data, hacking systems, and manipulating databases represent significant threats that can undermine national security stability (Wibowo, 2019). The adoption of Autogate should be considered in terms of administrative efficiency, its legal efficacy, and the system's security.

Examining legal frameworks is essential, as technology cannot exist in isolation; it must align with legal certainty, justice, and safeguarding state sovereignty. Lawrence M. Friedman's legal systems theory posits that such systems' efficacy is shaped by three fundamental components: legal structure, legal substance, and legal culture (Friedman, 1975). Within the framework of Autogate, the legal architecture encompasses immigration institutions and technological infrastructure; the legal substance pertains to the regulations that govern the system's application; concurrently, the legal culture embodies the perceptions and consciousness of both officials and the public concerning the utilisation of technology. The effectiveness and security of the Autogate system cannot be realised without the harmonious collaboration of the three components.

The description above underscores the pressing need for research into the efficacy and security of Autogate at the Batam Centre TPI. The assessment of this system promises to augment the existing body of work on immigration law and policy while simultaneously offering tangible benefits to governmental efforts aimed at refining regulations, bolstering technological advancements, and elevating human resource capabilities within the immigration domain. Consequently, Autogate is anticipated to evolve into a credible, efficient, and secure tool in bolstering immigration law enforcement and protecting national sovereignty.

RESEARCH METHOD

This research uses both normative and empirical juridical approaches. The normative juridical approach examines laws and regulations, literature, and legal doctrine related to the Autogate system in immigration law enforcement. Meanwhile, the empirical juridical approach is pursued through field research by interviewing officials and immigration officers at the Batam Centre Immigration Checkpoint (TPI) to obtain a factual picture of the system's implementation (Soekanto, 2015).

Research Location and Subjects

The research location was determined to be the Batam Centre TPI, Batam City, Riau Islands, chosen because it is one of Indonesia's busiest international entry points. The research subjects included immigration officials, Autogate operational officers, and service users (border crossers) with direct experience using the system.

Data Types and Sources

The data used in this research consists of:

1. Primary data was obtained through in-depth interviews with immigration officers and direct observation of the Autogate system being used at the Batam Centre TPI.
2. Secondary data, in the form of primary legal materials (Law Number 6 of 2011 concerning Immigration, Minister of Law and Human Rights Regulation Number 44 of 2015, and Minister of Law and Human Rights Regulation Number 9 of 2024), secondary legal materials (literature, journals, and previous research results), and tertiary legal materials (legal dictionaries and encyclopedias).

Data Collection Techniques

Data collection was conducted using several techniques, namely:

- Literature study: to obtain secondary data from theories, concepts, and regulations related to implementing the Autogate system.
- Structured and semi-structured interviews with immigration officers at the Batam Centre TPI to gather empirical data on the system's effectiveness and security.
- Field observations: to directly observe the use of Autogate, including technical and non-technical obstacles encountered during the inspection process.

Data Analysis Techniques

Data were analysed qualitatively and descriptively using a legal theory framework. The analysis linked empirical findings to applicable legal theory and regulations. The theoretical framework used includes:

- Justice Theory (John Rawls), to assess the fairness aspect of the Autogate system implementation.
- Legal System Theory (Lawrence M. Friedman), to assess the interaction between structure, substance, and legal culture in implementing Autogate.
- Legal Certainty Theory (Sudikno Mertokusumo), to assess the extent Autogate provides legal certainty in the immigration inspection process.

Using this method, the research is expected to provide a comprehensive analysis of the Autogate system's effectiveness and security from both a normative (legal rules) and empirical (field practice) perspective, as well as its implications for immigration law enforcement in Indonesia.

RESEARCH RESULT

1. Legal Regulation of the Autogate System

Research results indicate that, from a normative perspective, the implementation of the Autogate system in Indonesia has a legal basis. Law Number 6 of 2011 concerning Immigration mandates the government to provide fast, safe, and accurate immigration services. Further provisions concerning Procedures for Immigration Inspections at TPIs are stipulated in the Minister of Law and Human Rights Regulation Number 44 of 2015. Minister of Law and Human Rights Regulation Number 9 of 2024 emphasises using technology to support the immigration service system.

However, this research found a gap in technical regulations regarding Autogate operational standards. Existing regulations do not specifically address biometric data security mechanisms, procedures for handling system failures, or legal liability in the event of violations due to technological weaknesses. This situation creates legal uncertainty in its implementation.

2. Implementation of Autogate at TPI Batam Centre

Empirically, the implementation of Autogate at the Batam Centre TPI has improved service efficiency. The document and identity verification process, which typically takes 1–2 minutes through manual channels, can be shortened to 15–30 seconds with Autogate. This has reduced long queues, especially during peak hours when thousands pass daily.

However, this effectiveness is not yet fully optimal. Based on interviews with immigration officers, several obstacles were identified, such as:

- Technical disruptions (system errors, failed biometric scans, or unresponsive machines);
- Limited number of autogate units compared to the volume of border crossers;
- Low technological literacy among some users, especially the elderly;
- There is a continued need for manual officer intervention when system errors occur.

3. Autogate Security Aspects

The Autogate system contributes to increased inspection accuracy, particularly in detecting the use of forged documents and multiple identities. Integration with the national immigration database also allows faster detection of those on the watchlist.

However, there are potential threats to biometric data security and the system's vulnerability to hacking. Immigration officials have revealed that in several cases, attempts have been made to use fake identities to exploit weaknesses in biometric verification. Furthermore, the lack of specific regulations on biometric data protection raises concerns about the misuse of personal information.

4. Barriers and Solutions

The research identified several key barriers to Autogate implementation at the Batam Centre TPI, namely:

1. Limited technical regulations governing operational mechanisms and system security.
2. Limited human resources (HR), both in quantity and in technical skills in managing digital systems.
3. Limited technological infrastructure, including the number of devices not commensurate with the volume of passengers.
4. Cybersecurity threats, such as the potential for hacking and biometric data theft.

To address these barriers, several solutions are recommended, including:

1. developing comprehensive technical regulations regarding Autogate operational standards;
2. increasing human resource capacity through technology and cybersecurity training;
3. increasing the number of Autogate devices at TPIs with high traffic;
4. Strengthening the biometric data security system through collaboration with national cybersecurity agencies.

5. Implications for Immigration Law Enforcement

The effectiveness and security of Autogate have direct implications for immigration law enforcement in Indonesia. On the one hand, this system expedites the inspection process and improves the accuracy of violation detection. However, regulatory weaknesses and cybersecurity threats can undermine law enforcement efforts if not addressed promptly.

Therefore, this study emphasises the importance of regulatory harmonisation, infrastructure strengthening, and human resource capacity building so that Autogate can become a legitimate and effective instrument in supporting immigration law enforcement and safeguarding national sovereignty.

DISCUSSION

1. Effectiveness of Autogate from a Legal and Administrative Perspective

Increasing the speed at which immigration inspections are carried out is the goal of the public service modernisation initiative known as Autogate. Research conducted at the Batam Centre TPI (Traffic Control Centre) has demonstrated that this method can cut inspection times from an average of two minutes down to twenty-five to thirty seconds. The importance of this efficiency cannot be overstated, particularly in border regions that see the daily movement of thousands of people. This effectiveness is based on the principles of public service prescribed by Law Number 25 of 2009 about Public Services. This law says that the services provided by the government must be prompt, accurate, and accountable towards the public.

However, the effectiveness of the legal system is not necessarily equivalent to the effectiveness of the administrative system. In the context of immigration law, the system's efficacy must be evaluated based on the degree to which it assists law enforcement and protects the state's sovereignty. According to the legal system theory developed by Lawrence M. Friedman, the only way to ensure that the legal system is effective is to ensure that there is harmony between the legal structure (institutions and facilities), the legal substance (rules and regulations), and the legal culture (attitudes and awareness of the public and officials). Even though the structure (Autogate's engine) is in place, the substance (technical rules) continues to be lacking, and the legal culture of specific communities is not entirely supportive. Consequently, Autogate's efficacy regarding the law is not at its highest possible level.

As a result, this study reveals a disparity between the effectiveness of administrative processes (time efficiency) and the effectiveness of legal processes (legal certainty and protection). Autogate will continue to be only an administrative instrument rather than a solid one if regulations are not strengthened and public legal literacy is not increased.

2. Autogate System Security and Cyber Challenges

Security is a significant concern in implementing digital technology within the legal sector. Autogate employs biometric data, such as fingerprints and facial recognition, which are comparatively challenging to counterfeit, offering benefits above manual verification methods. Research shows that this system helps reduce the use of counterfeit documents and enhances the accuracy of border-crossing identities. This corresponds with Kholfi's (2019) findings, which highlighted that automated technologies can diminish the incidence of false document-based infractions.

Nonetheless, emerging risks originate from cybersecurity. Biometric data stored in the system may become susceptible to cybercrime if not safeguarded by sufficient legislation and technology. Numerous international examples illustrate that the theft of biometric data poses a greater threat than conventional data theft due to its permanence and irreversibility. This circumstance pertains directly to Sudikno Mertokusumo's idea of legal certainty, which underscores the necessity for the law to safeguard and ensure individual rights. Without explicit legislation governing biometric data protection, Autogate customers experience a deficiency in legal assurance over the security of their personal information. This system is also susceptible to hacking, which transnational criminal organisations might leverage to facilitate human smuggling or circumvent restrictions on banned individuals. If this transpired, it would undermine immigration as a law enforcement tool. Consequently, Autogate security should not be regarded merely as a technical concern but as an element of legal certainty necessitating stringent restrictions and comprehensive control.

3. Implications for Immigration Law Enforcement

From a law enforcement standpoint, Autogate enhances the expeditious identification of unlawful crossings, document counterfeiting, and those on surveillance lists. Electronically recorded data might constitute legitimate evidence in law enforcement proceedings, especially in residency permit infractions or people trafficking. This reinforces Autogate's status as a legal instrument rather than merely an administrative tool.

Nonetheless, regulatory deficiencies and cybersecurity concerns also yield adverse consequences. If these vulnerabilities are not rectified expeditiously, the Autogate system may generate new legal gaps. For instance, if biometric data is compromised or verification failures transpire, illicit crossings may leverage these vulnerabilities to circumvent manual inspections. This undermines Rawls' (1971) premise of justice as fairness, which asserts that everyone is entitled to equal legal protection. If the system safeguards only certain members of society while disadvantaging others due to technological vulnerabilities, the principle of fairness is not upheld.

These implications demonstrate that technology cannot be separated from the legal context. Implementing Autogate must be seen as an integral part of immigration law enforcement, not simply an administrative tool.

4. Autogate Implementation Barriers

This study highlighted four primary obstacles: ambiguous technical restrictions, insufficient human resources, inadequate infrastructure, and cybersecurity risks. Regulatory obstacles render immigration

officers reluctant to intervene during system malfunctions. The responsibility for an unauthorised crosser evading detection owing to an Autogate malfunction remains ambiguously defined, engendering legal ambiguity.

Scarce human resources are a significant impediment. Not all officers possess the technical expertise to address system faults or cyber risks. Indeed, the majority of immigration training continues to emphasise manual inspections. This signifies a disparity between technical requirements and officer capabilities.

Infrastructure constraints further intensify the predicament. The number of Autogate machines at the Batam Centre TPI remains inadequate for the daily influx of border crossers, totalling thousands. Consequently, lineups endure, diminishing the system's efficacy. Rahmawati's (2020) research underscores the inadequate integration of digital technologies and manual control at the Juanda TPI. Consequently, these limitations are not solely technological but directly affect legal efficacy.

5. Solutions and Recommendations

Based on the identified obstacles, several strategic solutions can be proposed. First, comprehensive technical regulations should be developed regarding Autogate operational standards, including biometric data protection and system error handling mechanisms. Such regulations are crucial for addressing legal uncertainty. Second, human resource capacity building can be done through technical and cybersecurity training. Immigration officers must be equipped not only with the ability to use the system but also to detect digital threats. This aligns with Friedman's view that legal structures will be ineffective without a supportive legal culture.

Third, technological infrastructure can be strengthened by increasing the number of Autogate units at TPIs with high traffic volumes. This step is crucial to ensure that the desired efficiencies are achieved and not merely partial. Fourth, cross-agency collaboration, such as with the National Cyber and Crypto Agency (BSSN), the National Police, and Interpol, to strengthen data security and prevent potential transnational crime. These solutions enhance technical effectiveness and strengthen Autogate's legal legitimacy as an immigration law enforcement instrument.

6. Relevance of Theory to Research Findings

This research investigation reveals a significant relevance between legal theory and the actual implementation of Autogate in the real world. As a result of the fact that John Rawls' theory of justice emphasises the significance of distributive justice, Autogate is obligated to safeguard all pedestrians without making any distinctions. Friedman's view of the legal system focuses on integrating legal structure, substance, and culture; for the system to function correctly, all three components must work together, complementary to one another. In the meantime, Sudikno Mertokusumo's theory of legal certainty focuses on the necessity of clear regulations to safeguard persons against legal ambiguity brought about by flaws in the various systems.

This research demonstrates that implementing Autogate is not just a technological problem but also a problem of law, justice, and the protection of human rights. This is demonstrated by the fact that these theories are linked together. Autogate must be contextualised inside a transparent, consistent, and equitable legal framework to be a successful legal instrument.

CONCLUSION

From the discourse in the preceding chapter, the subsequent conclusions may be inferred:

1. Legal regulations governing the efficacy and security of autogates for immigration law enforcement in Batam City are primarily founded on Law Number 6 of 2011 concerning Immigration and Minister of Law and Human Rights Regulation Number 9 of 2024, which delineates technology-based immigration inspection protocols. While Autogate is legally acknowledged as an official inspection tool, its efficacy is contingent upon explicit technical regulations, integration with SIMKIM (Information and Communication Technology), and field implementation that complies with principles of justice and legal certainty, thereby ensuring prompt, precise, and legally accountable immigration services.
2. The use of autogates for immigration law enforcement has positively impacted the efficiency of the inspection process and enhanced the accuracy of traveller identity verification. Nonetheless, from a security standpoint, several vulnerabilities persist, including the possibility of identity fraud, flawed biometric technologies, hacking risks, and an inadequate incident reporting system. This system is not yet entirely autonomous and continues to depend on manual supervision by officials. Consequently, Autogate security will be adequate only if underpinned by advanced technology, optimal database integration, and technically proficient personnel cognizant of their legal obligations.
3. Implementing Autogate in Batam City encounters normative challenges, including the absence of precise technical operating norms and fragmented authority across units, as well as practical challenges, such as inadequate infrastructure, insufficient human resource training, and poor legal awareness. Potential solutions encompass regulatory harmonisation, technological advancements, and ongoing officer training. If improved, Autogate might enhance immigration law enforcement, deter transnational crime, and reinforce the rule of law in critical border regions such as Batam City.

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