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LEGAL ANALYSIS OF THE EFFECTIVENESS OF THE AUTOGATE SYSTEM IN FACILITATING THE TRAFFIC OF FOREIGNERS AT INTERNATIONAL PORTS (RESEARCH STUDY IN BATAM CITY)

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Abstract

The international port in Batam City serves as the main entry point for the flow of foreigners, playing a strategic role in tourism, business, and cross-border activities. To improve the efficiency of immigration checks and reduce manual queues, the government has implemented the autogate system, an automated inspection system based on biometric technology. However, the implementation of this system still faces various challenges from technical, legal, and social aspects, such as system disruptions, regulatory gaps, and low user understanding. This study aims to analyze the legal regulations of the autogate system, evaluate the effectiveness of its implementation, and identify obstacles and possible solutions to facilitate the movement of foreigners at the international port of Batam City. This study uses a normative juridical and empirical juridical approach, with secondary data collected through document studies and primary data gathered through interviews and direct observation at Batam Center, Sekupang, and Harbour Bay ports. The analysis is conducted based on the framework of Modern Law Theory (Eugen Ehrlich), Legal System Theory (Lawrence M. Friedman), and Legal Certainty Theory (Sudikno Mertokusumo). The research results indicate that the autogate system already has a legal basis through the Immigration Law, Minister of Law and Human Rights Regulations, as well as regulations on personal data protection. However, its implementation has not been optimal due to weak infrastructure readiness, lack of staff training, and uneven public understanding. Therefore, it is necessary to strengthen technical policies, enhance technology and human resource capacity, and conduct ongoing public outreach to improve the effectiveness and legal certainty in the use of the autogate system.

Keywords: ***Juridical Analysis, Effectiveness, Autogate System, Foreigners' Traffic, International Ports.***

1. Introduction

International mobility has become an essential aspect of globalization, facilitating trade, tourism, and cross-border cooperation. Batam, as a Free Trade Zone and Special Economic Zone strategically located near Singapore and Malaysia, plays a central role in Indonesia's border management system.[1] The rapid increase in foreign travelers entering Batam through its international ports creates challenges for immigration services, particularly in balancing security concerns with efficiency. The introduction of the autogate system is intended to address these challenges by automating immigration clearance and reducing long queues at checkpoints. The autogate system, which relies on biometric identification, is designed to facilitate faster clearance while maintaining strict immigration control. This technological innovation reflects Indonesia's efforts to modernize immigration management and align with international best practices.[2] However, questions remain regarding the juridical effectiveness of the system, including its legal basis, implementation consistency, and capacity to ensure both security and efficiency. For instance, while larger international airports in Indonesia have adopted similar systems, their use in Batam's international seaports raises unique challenges due to the high frequency of short-term visits by foreign nationals. From a legal perspective, evaluating the effectiveness of the autogate system involves examining its compliance with national immigration laws, such as Law No. 6 of 2011 on Immigration, as well as related ministerial regulations.[3] Moreover, effectiveness must also be assessed from the perspective of user experience, institutional capacity, and compatibility with Indonesia's constitutional mandate to protect national sovereignty while facilitating cross-border relations. This study focuses on Batam as a case study to

assess the juridical effectiveness of the autogate system. The research seeks to identify whether the autogate has fulfilled its intended purpose of simplifying foreign entry without compromising legal certainty and security. By analyzing both normative legal frameworks and practical implementation, the study aims to provide insights into how immigration policies can better adapt to the realities of a globalized world. Ultimately, this introduction situates the autogate system within broader debates on border governance, technological innovation, and legal protection in Indonesia.

2. Literature Review

2.1. Immigration Law in Indonesia

Immigration law in Indonesia forms the fundamental legal framework governing the entry, residence, and departure of foreign nationals. The primary legal instrument is Law No. 6 of 2011 on Immigration, which replaced the outdated Law No. 9 of 1992.[4] This legislation sets out the principles of sovereignty, legal certainty, and human rights as guiding norms in immigration management. In addition, the law emphasizes immigration functions not only as administrative mechanisms but also as instruments of state security and public order. Within this framework, immigration is positioned as the "gatekeeper" of national sovereignty, balancing openness to foreign visitors with vigilance against potential threats such as illegal migration, terrorism, and transnational crime.[5] Indonesia's immigration system operates through a combination of normative rules and administrative discretion. The Directorate General of Immigration under the Ministry of Law and Human Rights acts as the primary authority, issuing visas, permits, and enforcing compliance. Recent regulations, such as Ministerial Regulation No. 44 of 2015 concerning immigration checkpoints, reflect efforts to modernize border management. Yet, challenges persist, particularly in ensuring efficiency without undermining security. The case of Batam illustrates this dual challenge clearly, as high-volume foreign arrivals strain the capacity of immigration officers. Scholars have highlighted the need for reform in Indonesian immigration law to accommodate the demands of globalization and technological innovation. The introduction of the autogate system must therefore be analyzed not only as a practical measure but also as a juridical adaptation within the legal framework. Without clear regulatory backing, technological innovations risk inconsistency and legal uncertainty. Thus, immigration law remains the bedrock upon which innovations like autogate must be evaluated.

2.2 Technological Innovation in Border Management

Technological advancements have transformed global border management practices. Many countries increasingly rely on biometric systems, e-passports, and automated clearance gates (autogates) to address the growing demand for faster and more secure immigration processes. According to the International Air Transport Association (IATA), biometric recognition systems significantly reduce processing times while maintaining strict identity verification standards.[6] In Southeast Asia, Singapore and Malaysia have pioneered autogate usage at airports and land borders, demonstrating how technology can improve efficiency and security simultaneously. For Indonesia, adopting such technology is both an opportunity and a challenge. On one hand, autogates offer solutions to problems of congestion and human error, particularly in high-traffic areas such as Batam's ports.[7] On the other hand, their adoption raises questions regarding legal certainty, data protection, and institutional readiness. Scholars argue that without adequate legal frameworks and capacity building, technological innovations may create new vulnerabilities rather than solving existing problems. From a policy perspective, Indonesia's efforts to digitalize immigration services are aligned with its broader agenda of e-government and bureaucratic reform. However, the uneven application of these technologies across different entry points—airports, land borders, and seaports—indicates a lack of uniform standards.Thus, the effectiveness of autogate implementation in Batam depends not only on technological capability but also on strong legal and institutional frameworks that can guarantee both efficiency and accountability.

2.3 The Autogate System

The autogate system is a technological innovation in immigration management designed to automate border clearance using biometric verification. Typically, autogates integrate technologies such as fingerprint recognition, iris scanning, or facial recognition to match travelers' biometric data against national databases. This system is particularly useful in high-traffic entry points, where the manual inspection process is often too slow to accommodate large numbers of travelers. By reducing reliance on manual officers, autogates can accelerate clearance, improve accuracy, and enhance both security and efficiency. Internationally, the autogate system has been widely adopted. Singapore's Changi Airport pioneered its use in Southeast Asia, integrating biometric verification with e-passports to process millions of travelers annually.Malaysia's autogate system also demonstrates efficiency in land and air entry points, particularly for frequent travelers. These systems have not only reduced waiting times but also improved public trust in border

management. In contrast, Indonesia's adoption of autogates is relatively recent and uneven, with applications in airports like Soekarno-Hatta and, more recently, seaports in Batam. In the case of Batam, the autogate system was introduced to manage the overwhelming flow of foreign nationals, primarily from Singapore and Malaysia, who often make short visits for tourism, trade, or employment. However, several challenges arise. First, not all foreign nationals are eligible to use the system, which creates a dual-track clearance process. Second, technical issues such as system downtime, biometric mismatches, or connectivity problems sometimes delay clearance rather than speeding it up. Third, concerns regarding the protection of personal biometric data remain unresolved, raising legal and ethical questions. Thus, while the autogate system provides potential benefits in simplifying immigration clearance, its effectiveness cannot be judged solely by technological performance. Its success must be examined through a juridical lens: whether it complies with immigration law, protects travelers' rights, and strengthens the state's sovereignty. This is especially important in Batam, where the stakes are high due to its status as a major gateway for international mobility.

2.4 Juridical Effectiveness Framework

The juridical effectiveness of any legal instrument or system is commonly measured by the extent to which it achieves its intended purpose while remaining consistent with legal norms and principles. In the context of immigration law, juridical effectiveness involves not only whether a policy, such as the autogate system, operates smoothly in practice but also whether it aligns with the principles of legal certainty, fairness, and proportionality. Philipus M. Hadjon defines legal protection in two dimensions: preventive protection, which ensures that rights are safeguarded before violations occur, and repressive protection, which provides remedies or sanctions when violations happen. Applying this framework to the autogate system, preventive protection entails the design of regulations that guarantee data security, user eligibility, and procedural clarity, while repressive protection requires the existence of legal remedies for misuse, discrimination, or technical failures that disadvantage travelers.

Internationally, the ILO and UN frameworks on migration governance emphasize that legal effectiveness also depends on transparency, accountability, and accessibility. For the autogate system in Batam, this means the government must ensure that foreign nationals can easily understand the rules governing its use, that immigration authorities are accountable for technical or administrative errors, and that mechanisms exist to resolve disputes fairly. Without these juridical safeguards, the system risks undermining public trust and violating legal rights. Moreover, juridical effectiveness must also consider proportionality: while the state has the sovereign right to regulate borders, restrictions imposed through the autogate system must not disproportionately burden travelers.Legal certainty requires that regulations governing autogates are clearly stipulated, publicly accessible, and consistently enforced. Currently, however, Indonesia lacks specific statutory regulations that explicitly govern biometric-based immigration clearance, relying instead on ministerial decrees and administrative policies. This regulatory gap weakens the juridical foundation of autogate usage and creates uncertainty both for travelers and immigration officers. Therefore, the juridical effectiveness of autogates in Batam hinges on strengthening the legal framework, integrating international standards, and ensuring both preventive and repressive protections. Only by embedding the system within a strong juridical structure can the promise of technological innovation translate into meaningful legal certainty and improved immigration services. [8]

3. Methodology

This research employs a juridical-empirical method, combining normative legal analysis with field-based observations. The juridical aspect involves examining statutory regulations, ministerial decrees, and relevant international conventions to assess the legal framework of autogate implementation in Indonesia. The empirical aspect is conducted through field research at Batam's international seaports, where autogates have been installed, to evaluate their practical effectiveness in facilitating foreign entry. The normative legal analysis focuses on Indonesia's primary immigration law, Law No. 6 of 2011 on Immigration, and its derivative regulations, including Ministerial Regulation No. 44 of 2015 concerning Immigration Checkpoints. These legal instruments provide the foundation for analyzing whether the autogate system has a solid juridical basis. In addition, comparative references are drawn from international practices, such as biometric border systems implemented in Singapore and Malaysia, to benchmark Indonesia's progress against global standards. For the empirical component, qualitative methods are utilized. Data collection techniques include interviews with immigration officers, observations at Batam's autogate facilities, and document analysis from official reports of the Directorate General of Immigration.[9] Respondents include immigration officials, foreign travelers using the autogate system, and policy experts familiar with digital border governance. This triangulation ensures a comprehensive perspective, balancing legal interpretation with practical insights.

The research applies a descriptive-analytical approach, aiming to describe the legal and operational conditions of the autogate system and analyze their alignment. Juridical effectiveness is measured through three indicators: (1) compliance with legal norms (legal certainty, clarity, and consistency), (2) effectiveness in practice (efficiency, accessibility, and user satisfaction), and (3) institutional accountability (mechanisms for supervision, remedies, and data protection). Furthermore, this study applies the concept of legal protection as theorized by Philipus M. Hadjon, which emphasizes preventive and repressive protection as dual dimensions of juridical effectiveness.Preventive protection is assessed through regulations ensuring clarity in autogate procedures and safeguards for personal data, while repressive protection is examined through sanctions or remedies available when the system fails or rights are violated.[10]

4. Results and Discussion

4.1 Implementation of the Autogate System in Batam

The introduction of the autogate system in Batam's international ports represents a significant step toward modernizing immigration processes, aiming to streamline passenger flow and enhance overall operational efficiency. Observations during peak travel periods indicate that foreign travelers who utilize the autogates experience markedly shorter waiting times compared to those undergoing manual clearance. This reduction in queuing not only improves passenger satisfaction but also mitigates congestion, which has historically been a critical challenge in high-traffic ports. Immigration officers have reported that the system allows them to prioritize attention toward travelers requiring manual verification, thereby improving risk management and focusing resources on individuals flagged for additional checks. Despite these benefits, the implementation remains partial. Not all passengers are eligible to use the autogates due to restrictions such as nationality, age, or validity of travel documents, creating a dual-track clearance system. This duality has operational implications: while some travelers enjoy expedited processing, others still face traditional manual verification, resulting in uneven service delivery. Such partial implementation highlights the system's limitations in achieving full operational integration. Moreover, technical observations indicate occasional bottlenecks at the transition points between manual and automated processes, demonstrating that infrastructure adjustments are necessary to support seamless operation.

Furthermore, the introduction of the autogate system requires adaptation by both travelers and immigration staff. For travelers unfamiliar with automated processes, initial usage can be confusing, leading to hesitation or errors during biometric scans. Immigration personnel must provide guidance and manage these interactions while maintaining overall efficiency. Training programs for staff have been implemented but vary in depth and frequency, which affects operational consistency. Additionally, the system relies heavily on stable technical infrastructure, including biometric scanners and software, making it susceptible to downtime or malfunction, which in turn disrupts the intended efficiency gains.[11] In conclusion, the autogate system in Batam demonstrates a successful step toward technological modernization of immigration procedures, offering clear advantages in speed and resource allocation. However, its partial implementation, dual-track clearance, and reliance on well-trained personnel and robust infrastructure underscore that while the system is effective in certain contexts, it is not yet fully comprehensive. Future development should focus on expanding eligibility, integrating manual and automated processes, and enhancing training and infrastructure to maximize the system's potential benefits.

4.2 Legal and Juridical Gaps

From a legal perspective, the autogate system in Batam operates within an ambiguous regulatory framework. Existing legislation, such as Law No. 6 of 2011 concerning Immigration and Ministerial Regulation No. 44 of 2015, provides general guidance on immigration procedures and checkpoint operations, but it does not specifically address the use of biometric-based clearance systems. This legislative gap creates uncertainty about the legal status of automated processing, particularly regarding the collection, storage, and use of sensitive personal data. The absence of explicit regulations weakens legal certainty and raises questions regarding the protection of travelers' rights, especially when their biometric information is involved. Empirical findings from interviews with travelers indicate that while they appreciate the efficiency of the autogate system, many are concerned about the transparency and security of their personal data. Questions arise about who has access to the biometric information, how long it is retained, and what mechanisms are in place to prevent unauthorized use or breaches. From a juridical standpoint, the system lacks both preventive and repressive mechanisms. Preventive measures, such as clear protocols for data protection and oversight, are not explicitly codified, while repressive measures, such as legal remedies or sanctions in the event of system errors or data breaches, are largely absent. This deficiency exposes both travelers and the government to potential risks.

Additionally, the lack of explicit legislation has implications for accountability. In the event of technical failures or misuse of biometric data, the current regulatory framework does not provide clear guidance on liability. Immigration officers may be unclear about the legal consequences of errors, and travelers may not have sufficient avenues for legal recourse. This situation underscores a broader gap between technological innovation and legal adaptation: while the autogate system modernizes immigration processes, the legal framework has not evolved at the same pace to ensure robust protection and accountability. The absence of specific laws also affects public perception. Trust in the system is influenced not only by operational reliability but also by legal assurance that personal data is protected and that any disputes can be addressed through established mechanisms. Consequently, the juridical effectiveness of the autogate system is only partial: it functions efficiently in practical terms but fails to fully guarantee legal certainty, accountability, and comprehensive protection for all users. Strengthening legal frameworks and regulatory clarity is therefore crucial to aligning technological advancement with legal safeguards. [12]

4.3 User Perceptions and Practical Impact

Empirical evidence suggests that foreign travelers generally perceive the autogate system positively, appreciating the speed, convenience, and reduced waiting time it provides. The system allows passengers to bypass long queues, which is particularly beneficial during peak travel periods, and offers a sense of autonomy as travelers manage their own clearance process. This positive reception demonstrates that the technological innovation meets an important practical need in immigration management, aligning with global trends in automated border control. However, user satisfaction is not uniform. Technical malfunctions, such as biometric mismatches or system downtime, often generate frustration and delays, undermining the perceived efficiency of the system. Passengers encountering errors may need to revert to manual verification, which diminishes the advantages of automation and increases stress for both travelers and staff. In addition, many travelers express concerns regarding the lack of transparency about the use and storage of their biometric data. Questions such as how long data is retained, who has access, and what measures exist to prevent misuse remain largely unanswered, leading to partial trust in the system.

The practical impact of the autogate system also extends to institutional workflow. Immigration officers report that the system reduces workload for routine cases, allowing more focused attention on high-risk or non-eligible travelers. Nonetheless, the dual-track process, where some passengers use automated gates and others require manual checks, introduces operational complexity. Officers must switch between automated oversight and manual procedures, which can create inconsistencies and slow down service in some cases. This indicates that while the system achieves operational efficiency in many situations, its practical benefits are contingent upon both reliable technology and well-trained staff. From a juridical perspective, user perceptions highlight the partial effectiveness of the system. While travelers experience tangible improvements in speed and convenience, the absence of clear legal protections for biometric data limits public confidence. The system succeeds technologically but does not fully meet legal and ethical standards expected by users, particularly regarding data privacy, accountability, and redress mechanisms. This gap between user expectations and legal safeguards illustrates the broader challenge of integrating technological solutions into public services without parallel development in regulatory frameworks. Overall, user perceptions indicate that the autogate system enhances efficiency and passenger experience but simultaneously exposes weaknesses in legal clarity, technical reliability, and institutional readiness. Addressing these concerns is essential to consolidate trust, ensure consistent operational performance, and strengthen the system's juridical effectiveness. Without addressing legal and procedural transparency, even technologically successful innovations may fail to achieve full public acceptance.[13]

4.4 Technical and Institutional Challenges

Despite its advantages, the autogate system faces several technical and institutional challenges that limit its overall effectiveness. Technically, biometric mismatches, software errors, and periodic downtime compromise the intended efficiency of automated clearance. When passengers encounter recognition errors or system malfunctions, they are redirected to manual verification counters, leading to delays and undermining the purpose of automation. The system's dependence on consistent and accurate biometric scanning highlights the need for high-quality infrastructure and maintenance routines, which are sometimes insufficient due to budgetary and operational constraints. Institutional challenges further complicate implementation. Immigration officers exhibit varying levels of familiarity and competence in handling the autogate system, affecting consistency in passenger processing. While some officers are well-trained, others lack experience, which can lead to inconsistent application of procedures and delays. Furthermore, limited maintenance budgets and insufficient technical support exacerbate the impact of system failures, as repairs may not be timely, and preventive maintenance is not always systematically conducted. These factors indicate that institutional capacity has not fully aligned with the demands of technological innovation, limiting the system's

operational reliability. The challenges also have juridical implications. Frequent technical issues and inconsistent application of automated procedures compromise preventive legal protection, as the system cannot guarantee seamless service for all users. Data integrity and security may be jeopardized when malfunctions occur, raising concerns regarding the protection of sensitive biometric information. Without clear institutional protocols for addressing errors, including reporting mechanisms and remedies, the system's juridical effectiveness is compromised, exposing both travelers and the government to potential legal risks. Moreover, coordination between technical teams and operational staff is crucial but often insufficient. Officers may lack timely guidance when encountering technical problems, while technical teams may be constrained by limited budgets or organizational hierarchy. Such gaps hinder swift problem-solving and reduce system reliability. Addressing these technical and institutional challenges requires not only upgrading infrastructure but also implementing comprehensive training, clear procedural protocols, and adequate resource allocation.. [14]

5. Comparison

When analyzing the effectiveness of the autogate system in Batam, it is important to compare it with similar implementations in neighboring countries such as Singapore and Malaysia. These comparisons reveal both the strengths and weaknesses of Indonesia's approach while highlighting lessons that can be adopted for future reforms. In Singapore, the Immigration and Checkpoints Authority (ICA) has developed one of the most advanced border management systems in the region. Autogates in Singapore integrate biometric verification with e-passports and national databases, allowing travelers to pass through immigration checkpoints within seconds. The system is inclusive, covering almost all categories of travelers, including citizens, permanent residents, and frequent foreign visitors. The legal framework in Singapore also ensures strong protection of biometric data through the Personal Data Protection Act (PDPA), which provides legal certainty, transparency, and accountability. This combination of technology and regulation demonstrates a high level of juridical effectiveness, where efficiency is matched by legal safeguards and public trust.

Malaysia presents another useful comparison. The country has long implemented autogates at airports and land borders, particularly to facilitate the movement of ASEAN citizens and Malaysian nationals. The system integrates biometric recognition with national identification cards, ensuring both speed and accuracy. Unlike Singapore, Malaysia still faces occasional technical disruptions, which sometimes force travelers to revert to manual clearance. Nevertheless, Malaysia has introduced clear immigration regulations governing autogates, offering stronger legal certainty compared to Indonesia.These regulations explicitly recognize the system's role in border management, ensuring that immigration officers and travelers alike understand the procedures and safeguards in place.

Compared to these two countries, Indonesia's autogate system in Batam appears less advanced both in scope and in legal certainty. While it has succeeded in reducing waiting times for eligible travelers, its coverage remains limited, technical issues persist, and statutory regulations are absent. The reliance on ministerial decrees without specific legislative provisions weakens the juridical foundation of the system. Moreover, Indonesia lacks comprehensive data protection laws to regulate the use of biometric information, raising concerns about privacy and misuse. This creates a gap between technological innovation and legal adaptation, reducing the system's overall effectiveness. The comparison shows that Indonesia can draw important lessons from its neighbors. Singapore demonstrates the importance of a strong legal framework for biometric data protection, while Malaysia illustrates how explicit immigration regulations can ensure legal certainty despite technical challenges. For Batam, adopting these lessons means strengthening the legal basis of the autogate system, expanding its coverage, and ensuring accountability for data usage. By bridging the gap between regulation and practice, Indonesia can ensure that technological innovation in immigration services is not only efficient but also legally sound and sustainable.[15]

6. Conclusions and Suggestion

Based on the discussion in the previous chapter, the following conclusions can be drawn:

a. Improved Immigration Service Efficiency

The autogate system at Batam's international ports has successfully reduced waiting times and expedited clearance for foreign travelers. It has also helped minimize long queues during peak hours, thereby facilitating smoother mobility across borders

b. Weaknesses in the Legal Framework

Despite its technical effectiveness, the autogate system lacks explicit statutory regulations. Its legal foundation relies mainly on ministerial decrees and general provisions under Law No. 6 of 2011 on Immigration, without specific rules governing biometric technology. This gap undermines legal certainty and raises concerns regarding accountability and data protection.

c. Institutional Limitations
Operational challenges persist due to inadequate officer training, limited budgets for maintenance, and recurring technical disruptions. These institutional weaknesses reduce the system's reliability and overall effectiveness in practice.

d. Comparison with Neighboring Countries
Singapore and Malaysia have developed more advanced autogate systems with clear legal frameworks and stronger biometric data protection. In contrast, Indonesia still lags behind in providing juridical certainty, even though technological innovation has already been introduced.

From these conclusions, the author can offer several recommendations, namely:

a. Enact Specific Regulations on Autogates
The government should introduce statutory regulations or government decrees that explicitly govern the use of autogates. These must include provisions on operational procedures, user eligibility, accountability, and comprehensive biometric data protection standards

b. Strengthen Institutional Capacity
The Directorate General of Immigration must enhance officer training programs, allocate adequate budgets for system maintenance, and adopt modern monitoring technologies to ensure reliability and minimize technical failures.

c. Expand System Coverage
The autogate system should be extended to cover a wider range of travelers beyond limited categories. Broader coverage would maximize efficiency and reduce dependence on manual clearance.

d. Adopt International Best Practices
Indonesia should align with regional and global standards, particularly by adopting data protection frameworks similar to Singapore's Personal Data Protection Act (PDPA).[6] Cooperation with ASEAN partners may also help harmonize immigration standards in cross-border mobility.

e. Institutionalize Continuous Monitoring and Evaluation
A permanent mechanism for monitoring and evaluation should be established to ensure that the autogate system remains efficient, legally sound, and consistent with principles of sovereignty and human rights protection.

Author Contributions: A short paragraph specifying their individual contributions must be provided for research articles with several authors **(mandatory for more than 1 author)**. The following statements should be used "Conceptualization: X.X. and Y.Y.; Methodology: X.X.; Software: X.X.; Validation: X.X., Y.Y. and Z.Z.; Formal analysis: X.X.; Investigation: X.X.; Resources: X.X.; Data curation: X.X.; Writing—original draft preparation: X.X.; Writing—review and editing: X.X.; Visualization: X.X.; Supervision: X.X.; Project administration: X.X.; Funding acquisition: Y.Y."

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Data Availability Statement: We encourage all authors of articles published in FAITH journals to share their research data. This section provides details regarding where data supporting reported results can be found, including links to publicly archived datasets analyzed or generated during the study. Where no new data were created or data unavailable due to privacy or ethical restrictions, a statement is still required.

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