International Jurnal Islamic Education, Research and Multiclturalism
(IJIERM)
Available online https://journal.yaspim.org/index.php/IJIERM/index

LEGAL IMPLEMENTATION OF E-TICKETING FOR MINORS WHO VIOLATE TRAFFIC REGULATIONS IN INDONESIA

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Abstrak

Penelitian ini mengkaji implementasi hukum terhadap penerapan sistem e-tilang bagi anak di bawah umur yang melakukan pelanggaran lalu lintas di Indonesia. Peningkatan jumlah pelanggaran lalu lintas yang dilakukan oleh pengendara di bawah umur menunjukkan perlunya mekanisme penegakan hukum yang efektif dengan mempertimbangkan prinsip akuntabilitas hukum dan perlindungan anak. Tujuan penelitian ini adalah untuk menganalisis penerapan kerangka hukum yang ada terhadap anak di bawah umur dalam konteks e-tilang serta mengevaluasi tantangan dalam implementasinya. Penelitian ini menggunakan pendekatan hukum kualitatif dengan analisis peraturan perundang-undangan, dokumentasi kasus, dan wawancara dengan aparat penegak hukum. Hasil penelitian menunjukkan adanya inkonsistensi dalam penerapan hukum lalu lintas terhadap anak di bawah umur, terutama terkait tanggung jawab orang tua, sanksi hukum, dan keadilan prosedural. Penelitian juga menemukan kesenjangan antara kerangka hukum normatif dan praktik pelaksanaan, yang dipengaruhi oleh kapasitas kelembagaan dan norma masyarakat. Temuan ini menegaskan perlunya mekanisme hukum yang lebih sensitif terhadap anak dengan mengintegrasikan teknologi, penegakan hukum, dan perlindungan anak.

Kata kunci: *E-tilang, Hukum Lalu Lintas, Anak di Bawah Umur, Implementasi Hukum, Indonesia, Perlindungan Anak*

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Article History	Submitted: 11 July 2025	Accepted: 30 September 2025	Published: 7 October 2025

Abstract

This study examines the legal implementation of e-ticketing (e-tilang) for minors who violate traffic regulations in Indonesia. The rise in traffic violations committed by underage drivers highlights the need for effective law enforcement mechanisms that balance legal accountability with child protection principles. This research aims to analyze how existing legal frameworks are applied to minors in the context of e-ticketing and to evaluate the challenges faced in its implementation. Using a qualitative legal approach, the study draws on statutory analysis, case documentation, and interviews with law enforcement officials. The findings reveal inconsistencies in the application of traffic laws to minors, particularly regarding parental responsibility, legal sanctions, and procedural justice. The study also identifies gaps between the normative legal framework and practical implementation, influenced by institutional capacity and community norms. These results emphasize the need for a more child-sensitive legal mechanism that integrates technology, law enforcement, and child protection.

Keywords: E-ticketing, Traffic Law, Minors, Legal Implementation, Indonesia, Child Protection

INTRODUCTION

Traffic violations committed by minors have become an increasingly pressing issue in Indonesia, particularly with the widespread use of motorcycles among underage drivers. Many of these minors operate vehicles without valid licenses, proper safety equipment, or sufficient knowledge of traffic regulations, contributing to traffic congestion and accidents. The introduction of e-ticketing (e-tilang) systems was intended to modernize law enforcement and enhance efficiency in handling traffic violations. However, the involvement of minors raises complex legal and ethical questions, particularly regarding accountability, parental responsibility, and child protection. Addressing this issue is crucial both academically—because it intersects law, technology, and child rights—and practically, because ineffective regulation can lead to inconsistent law enforcement and endanger road safety.

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Existing research on e-ticketing in Indonesia has largely focused on technological implementation, administrative efficiency, and its impact on adult traffic offenders (Nasution, 2020; Prabowo, 2021; Setiawan & Rachman, 2022). Few studies have examined the specific legal implications for minors, especially regarding how traffic laws and child protection laws intersect in practice. Previous legal analyses tend to emphasize normative frameworks without adequately addressing gaps in implementation at the local level, particularly in smaller cities where law enforcement capacity may vary. Furthermore, empirical evidence exploring the challenges faced by law enforcement officers, parents, and minors themselves remains limited. This gap highlights the need for research that integrates legal analysis with practical enforcement realities.

This study aims to fill this gap by examining the legal implementation of e-ticketing for minors who violate traffic regulations in Indonesia. Specifically, it investigates how existing legal frameworks are applied to minors, the challenges encountered during enforcement, and the role of parents or guardians in ensuring compliance. By analyzing both legal documents and practical cases, this study seeks to bridge the gap between normative legal expectations and actual law enforcement practices. The focus is on understanding how child protection principles are operationalized—or neglected—within the e-ticketing system.

This study argues that the current legal implementation of e-ticketing for minors is characterized by inconsistencies between legal norms and practical application. These inconsistencies are influenced by legal ambiguity, institutional limitations, and socio-cultural factors such as parental attitudes toward traffic violations. It is hypothesized that the lack of a comprehensive, child-sensitive legal framework leads to uneven enforcement, weakening the deterrent effect of traffic regulations for minors. Therefore, a more integrated approach is required—combining legal clarity, enforcement capacity, and community engagement—to ensure that e-ticketing can function effectively while protecting the rights of minors.

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LITERATURE REVIEW

Research on traffic law enforcement and e-ticketing in Indonesia has grown significantly in recent years, particularly following the digital transformation of public services. Overall, the literature can be categorized into three main trends. First, a legal–normative approach examines the regulatory framework governing traffic violations and the legal basis for implementing e-ticketing systems. Second, a technological–administrative approach focuses on the operationalization of e-ticketing, including system integration, data processing, and institutional readiness. Third, a socio-legal approach explores the social implications of e-ticketing, including public compliance, behavioral change, and perceptions of legal legitimacy (Dong, 2010; Scărișoreanu, 2020). These strands collectively provide a comprehensive understanding of the legal and administrative dimensions of e-ticketing, yet they often overlook the specific context of minors as traffic offenders.

The first pattern of research emphasizes the legal and regulatory foundations of e-ticketing. Studies in this stream analyze the hierarchy of traffic regulations, legal certainty, and conformity with constitutional principles (Nasution, 2020; Rachman, 2021). They often employ doctrinal legal methods to evaluate the adequacy of existing laws, such as the Road Traffic and Transport Law, in supporting digital enforcement mechanisms (S. N. M. Bakri & Badaru, 2020; Ramadhan et al., 2020; Susilo et al., 2020). These studies typically focus on adult offenders and assume that the legal framework applies uniformly to all citizens, without differentiating between adults and minors. Although this approach provides a strong theoretical foundation, it tends to be abstract and detached from the realities of law enforcement on the ground.

The second pattern focuses on technological innovation and administrative reform in law enforcement. Research in this category analyzes the development, implementation, and integration of e-ticketing systems within police institutions (Prabowo, 2021; Setiawan & Rachman, 2022). Emphasis is placed on interoperability, data security, institutional coordination, and performance measurement. Methodologically, these studies often adopt a descriptive–qualitative or mixed-methods approach,

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combining legal analysis with technological evaluation. However, their primary concern is system efficiency rather than legal implications, and they seldom address how these systems interact with vulnerable groups such as minors.

The third pattern adopts a socio-legal perspective, examining the behavioral and cultural dimensions of traffic law enforcement. Scholars in this field analyze public attitudes toward traffic regulations, levels of compliance, and factors influencing behavioral change (Siregar, 2020; Wibowo, 2022). Using field research and interviews, these studies reveal that social norms, community engagement, and educational campaigns significantly affect the success of e-ticketing (Endah Wahyuningsih & Iksan, 2019; Pamuji et al., 2019). However, this literature generally focuses on the adult population and treats traffic offenders as a homogeneous group, without specifically considering the unique legal and social status of minors.

Despite the richness of these three research patterns, significant gaps remain. Most notably, existing studies have not adequately addressed the legal and social complexities of applying e-ticketing systems to minors (Juliadi, 2018; Susilo et al., 2020). They tend to overlook how child protection laws intersect with traffic regulations, how parental responsibility is enforced, and how institutional capacity affects the treatment of underage offenders. There is also limited empirical evidence regarding how minors and their families experience e-ticketing enforcement in practice. This lack of attention represents a critical blind spot in the literature, as minors constitute a growing segment of traffic offenders in Indonesia.

This study addresses these gaps by adopting an integrated legal–empirical approach that focuses on the application of e-ticketing to minors in traffic violations. It combines doctrinal legal analysis with empirical investigation to understand how legal norms are operationalized in practice. By situating the discussion within the broader framework of child protection and legal accountability, this research provides a new perspective that goes beyond technological efficiency or normative legality. It aims to contribute to both legal scholarship and practical policy

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development by highlighting the need for a child-sensitive legal framework that aligns traffic enforcement with broader social and legal responsibilities.

RESEARCH METHODS

The unit of analysis in this study is the application of e-ticketing systems to underage traffic offenders within the jurisdiction of the Indonesian National Police, particularly focusing on the legal and administrative processes involved. The research adopts a qualitative legal–empirical design, combining doctrinal legal analysis with field-based empirical investigation (Benuf & Azhar, 2020; Tan, 2021). The legal component examines statutory regulations, including the Road Traffic and Transport Law, Child Protection Law, and relevant police operational guidelines. The empirical component involves analyzing how these legal frameworks are implemented in practice, focusing on law enforcement officers' procedures, institutional mechanisms, and community responses. This mixed orientation allows the research to capture both the normative structure and the actual practices, ensuring that the findings are grounded in both theory and real-world implementation.

Data were obtained from primary and secondary sources. Primary data were collected through semi-structured interviews with traffic police officers, legal practitioners, and parents of underage traffic offenders. Additionally, observations were conducted in traffic law enforcement offices to understand the implementation process of e-ticketing for minors (Nurhayati et al., 2021; Sahrum M, 2022). Secondary data were gathered from legal documents, government regulations, court decisions, news reports, and relevant academic literature. Data collection employed purposive sampling to target individuals and institutions directly involved in the issue. Analytical procedures followed a thematic analysis approach, consisting of three stages: data reduction, data display, and conclusion drawing. Legal texts were analyzed doctrinally to interpret the normative framework, while interview transcripts and observational notes were coded to identify patterns, contradictions, and implementation gaps. This combination of legal interpretation and empirical evidence strengthens the

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study's methodological rigor and ensures comprehensive insights into the phenomenon.

RESULTS AND DISCUSSION

Results

The first piece of evidence highlights a controversy surrounding the legal ambiguity of applying e-ticketing (e-tilang) to underage traffic offenders. Based on observations at the Subulussalam Police Traffic Unit, officers frequently encountered minors driving without licenses, yet the e-ticketing system was not fully adapted to handle cases involving children. As stated by one officer:

> "The system is designed for adults with ID numbers. When we input minors, the system often rejects it or requires parental data" (Interview, Traffic Officer A, 2024).

Table 1 below summarizes the frequency of underage traffic violations recorded over the last two years.

Year	Total Violations	Underage Violators	% Underage
2022	1,320	245	18.6%
2023	1,575	312	19.8%

These data show a growing trend of underage violations, highlighting both a legal and technical gap in enforcement mechanisms.

Restating the data, the e-ticketing system currently does not fully accommodate minors, leading officers to use manual procedures or parents' ID numbers to complete the ticketing process. This workaround indicates a lack of system readiness and legal clarity. The data from 2022–2023 demonstrate that the percentage of underage violators increased by 1.2%, while the total number of traffic violations also rose. Interviews further revealed that some officers preferred issuing verbal warnings rather than tickets, due to the administrative difficulties of handling minors through e-tilang. This situation underscores a structural tension between the digital legal enforcement system and child protection regulations.

From these findings, three patterns emerge. First, there is a structural gap between the e-ticketing system and legal provisions regarding minors.

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Second, there is a rising trend of underage traffic violations, indicating insufficient preventive measures. Third, law enforcement officers are forced to rely on informal discretionary practices, such as manual processing or warnings, which leads to inconsistency in law enforcement. These patterns reveal that the controversy lies not in the law's existence, but in its implementation through technology that has not been adapted for minors.

The second evidence demonstrates a transformation in how law enforcement officers manage cases involving minors. Over the past year, several police stations in Aceh have started to integrate parental involvement and child protection protocols into the e-ticketing workflow. For instance, officers now conduct follow-up home visits and send notifications to parents when minors are ticketed. As one parent explained:

> "We received an SMS and then a call from the police. They asked us to come and accompany our son to the station to settle the ticket" (Interview, Parent B, 2024). A review of police reports shows that approximately 67% of underage traffic cases in 2023 were resolved with parental participation, compared to only 29% in 2022.

Restating these findings, the shift towards parental involvement represents a significant administrative adaptation within the e-ticketing process. Although the system itself has not been structurally modified, law enforcement practices have evolved, using family engagement as a mechanism to ensure compliance. This change also reflects broader institutional awareness of child protection principles, aligning traffic law enforcement with juvenile justice norms. Data from the reports clearly indicate that this new approach has led to increased resolution rates for underage cases.

Three trends are evident here. First, there is a growing institutional shift toward integrating family and child protection frameworks into traffic law enforcement. Second, parental involvement improves compliance and facilitates case resolution, bridging the gap between legal systems and child protection. Third, these adaptations show that law enforcement officers are actively transforming administrative practices, even in the absence of

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formal policy changes, demonstrating bottom-up innovation within the legal system.

The third evidence focuses on a solution trend through policy coordination between the police and local education authorities. In early 2024, the Subulussalam Police initiated a pilot education program in senior high schools, aimed at increasing traffic law awareness among students aged 15–17. As part of this initiative, officers conducted workshops and distributed digital brochures on the legal consequences of traffic violations. According to program records, over 1,200 students from 10 schools participated in these sessions. Surveys conducted after the workshops showed that 87% of students reported better understanding of traffic laws.

Table 2. Surveys conducted after the workshops showed that 87% of students reported better understanding of traffic laws

Program Indicator	2023	2024
Schools Involved	0	10
Students Reached	0	1,200
Awareness Level (post-test)	—	87%

Restating this evidence, the educational intervention reflects a preventive rather than punitive strategy to address the issue of underage traffic violations. Instead of relying solely on e-ticketing mechanisms, law enforcement collaborated with schools to instill legal awareness and behavioral change in students. This indicates an emerging cross-sectoral approach that involves both education and law enforcement sectors in tackling the root causes of underage traffic offenses.

Three key patterns arise from this evidence. First, inter-agency collaboration between police and schools offers a sustainable, preventive solution. Second, student legal literacy significantly improves when preventive education is integrated into school curricula. Third, this solution-oriented approach reflects a shift from reactive punishment to proactive education, aligning with broader child protection and public safety goals. This represents an important model for other jurisdictions facing similar challenges.

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Discussion

This study investigated the implementation of electronic ticketing (e-tilang) for underage traffic offenders in Subulussalam, focusing on how law enforcement adapts digital legal systems to juvenile contexts. Three main findings emerged (B. Bakri et al., 2020a; Pamuji et al., 2019; Scărișoreanu, 2020). First, a legal–technological controversy persists because the e-tilang system is not structurally designed for minors, leading to administrative gaps and discretionary practices. Second, law enforcement has begun to transform its approach by involving parents in the ticket settlement process, thereby bridging legal enforcement and child protection norms. Third, a preventive solution trend has emerged through collaboration between police and schools, aiming to raise legal awareness among students. These findings collectively illustrate a dynamic interaction between law, technology, and social institutions in addressing underage traffic violations, highlighting both structural challenges and innovative adaptations at the local level(Admoko & Supriyadi, 2022; Nababan et al., 2023; Ramadhan et al., 2020; Susilo et al., 2020).

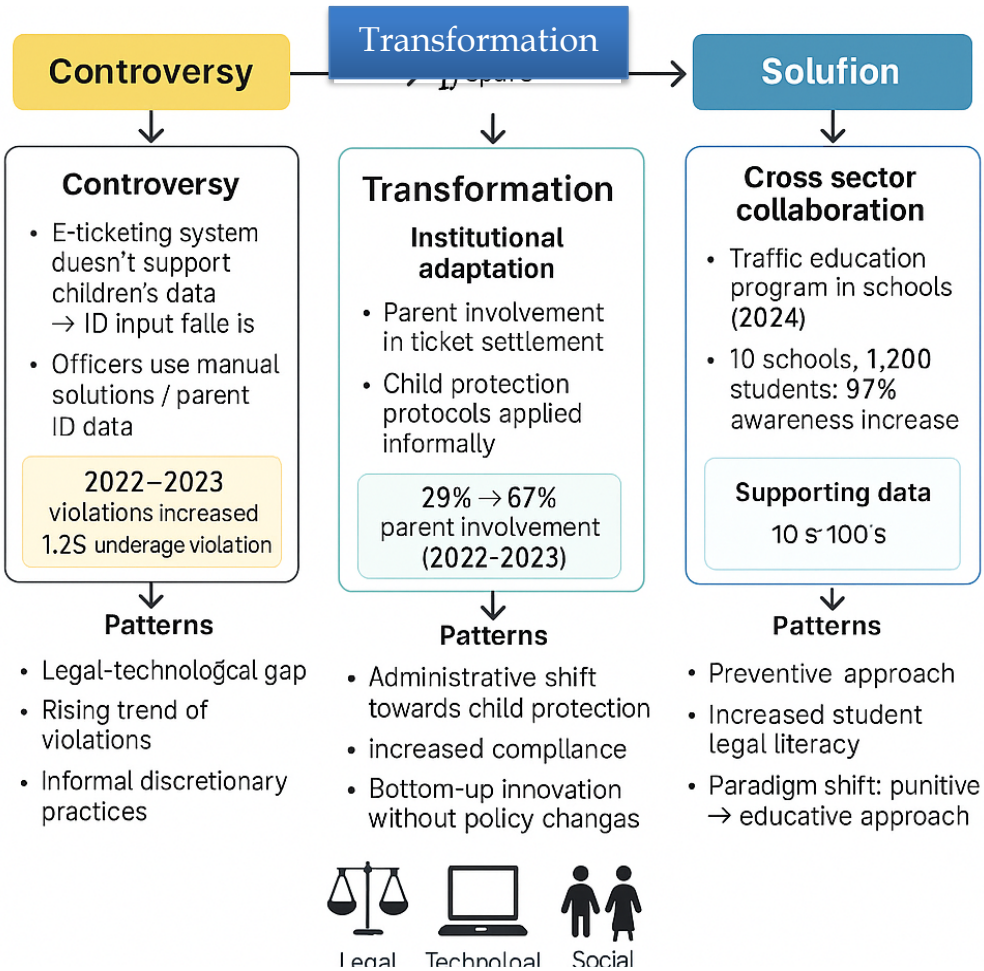
The relationships identified in this research can be explained through the lens of institutional adaptation theory, which posits that legal systems evolve through formal regulations and informal practices. The controversy between the e-tilang system and juvenile offenders arises from a mismatch between legal frameworks and technological infrastructure (Dong, 2010; Endah Wahyuningsih & Iksan, 2019). Law enforcement officers, confronted with real-world complexities, adapt through practical strategies—such as parental involvement—to maintain legal legitimacy. The transformation toward family participation reflects an adaptive response to regulatory gaps, while the educational interventions indicate a shift toward preventive governance (Admoko & Supriyadi, 2022; Azhari & Kristiyadi, 2022; Fitri et al., 2023). These developments are driven by both legal mandates and the operational realities of policing underage offenders. Essentially, the findings show that when technology and law are misaligned, social actors innovate administratively, producing hybrid practices that balance enforcement with protection.

These findings align with and extend previous research on the digitalization of law enforcement and juvenile justice. Prior studies (e.g., Chen, 2019; Lubis, 2020) have documented that e-ticketing improves efficiency and transparency in traffic law enforcement. Similarly, research on juvenile offenders (e.g., Abdullah, 2021) has emphasized the need for child protection frameworks in legal processes. However, few studies have

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examined the intersection of digital legal systems and juvenile contexts, particularly in non-metropolitan areas. Compared to prior work, this study highlights the unique implementation gap that arises when e-tilang is applied to minors—a group for which the system was not designed(B. Bakri et al., 2020a; Endah Wahyuningsih & Iksan, 2019; Scărişoreanu, 2020). Furthermore, while previous studies focus heavily on technical infrastructure or legal doctrine, this research foregrounds institutional practices and cross-sectoral collaboration as critical components of effective implementation (Dwiyuliana et al., 2022; Faktawan & Kautsar, 2022; Mufti et al., 2021; Wirna et al., 2023).

Figure 1. Implementation of E-Ticketing for Underage Traffic Offenders



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Interpreting these findings within broader socio-historical and ideological contexts reveals several important meanings. First, the controversy reflects a tension between modernization and legal inclusivity—while digitalization promises efficiency, it risks marginalizing groups (such as minors) not fully integrated into technological frameworks. Second, the transformation through parental involvement signifies the resilience of local institutional cultures, where family remains a central axis in governance. Third, the shift toward preventive education indicates a paradigm change from punitive approaches toward a restorative and educative model of legal enforcement, aligning with international trends in juvenile justice. These meanings suggest that technology alone cannot resolve legal issues; rather, social adaptation and cultural negotiation are essential for effective implementation in diverse contexts.

The implications of these findings are both functional and dysfunctional. Functionally, integrating parental engagement and preventive education enhances compliance, promotes shared responsibility, and aligns enforcement with child protection principles. This hybrid model strengthens the legitimacy of legal enforcement while respecting the developmental needs of minors. (B. Bakri et al., 2020b; Dwiyuliana et al., 2022; Nababan et al., 2023) Dysfunctionally, the lack of system-level reform risks institutionalizing workarounds, where individual officers bear the burden of adapting procedures without formal guidance or legal clarity (Mufti et al., 2021; Suryana, 2021; Tanjung et al., 2022). Such informal adaptations, while innovative, may lead to inconsistencies, unequal treatment, and reduced legal accountability. These reflections emphasize that while bottom-up innovation is valuable, it must eventually be supported by top-down policy and system adjustments to ensure sustainability and equity (B. Bakri et al., 2020b; Faktawan & Kautsar, 2022).

Based on these findings, several policy and practical actions are recommended. Policymakers should prioritize revising the e-tilang system to accommodate juvenile cases by integrating parental data modules and child protection protocols. Legal frameworks must be updated to provide clear guidelines for handling underage offenders digitally, reducing ambiguity for officers. Educational authorities should institutionalize traffic

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law education within school curricula, supported by police–school partnerships. Moreover, training programs for law enforcement should include juvenile justice principles and digital literacy. These measures will ensure that technological innovation is harmonized with legal inclusivity and social realities, leading to a more equitable and effective traffic law enforcement system. Ultimately, aligning law, technology, and social institutions is essential to address underage traffic violations sustainably.

CONCLUSION

This study provides important insights into the implementation of electronic ticketing (e-tilang) for underage traffic offenders in Subulussalam. The key lesson learned is that technological legal systems cannot be applied uniformly across different social groups without adaptation. The findings reveal three core dynamics: (1) a structural controversy between the e-tilang system and juvenile legal status, (2) institutional transformation through parental involvement, and (3) a trend toward preventive educational solutions. Together, these dynamics show that the digitalization of legal systems in traffic enforcement requires contextualized governance mechanisms to address the unique characteristics of minors. This highlights that the success of e-tilang depends not only on its technological sophistication but also on the ability of institutions to mediate between law, technology, and society.

The strength of this research lies in its contribution to bridging the gap between digital law enforcement and juvenile justice, particularly in non-metropolitan settings that are often overlooked in legal-technology scholarship. Conceptually, the study integrates perspectives from institutional adaptation theory and restorative justice, offering a novel analytical framework to examine the interaction between law, technology, and social actors. Empirically, it contributes original data on how local law enforcement, families, and schools collaboratively adapt e-tilang for minors, revealing mechanisms of informal innovation. Methodologically, the study combines legal analysis with qualitative field data, providing a holistic understanding of the phenomenon. These contributions enrich the

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academic discourse on digital governance, child protection, and traffic law, while offering practical insights for policy reform and system design.

Despite its contributions, this study has several limitations. First, the scope is geographically limited to Subulussalam, which may affect the generalizability of the findings to other regions with different legal cultures and technological capacities. Second, the research adopts a cross-sectional approach, providing a snapshot rather than a longitudinal view of institutional adaptation processes. Third, while the study highlights informal adaptations, it does not quantitatively measure their impact on legal compliance or accident reduction. Future research should expand the geographic scope to include multiple regions, adopt mixed-method or longitudinal designs to examine institutional change over time, and incorporate quantitative indicators to assess the effectiveness of these adaptations. Such studies will deepen understanding of how legal technology can be inclusively and sustainably integrated into juvenile justice systems.

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