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Implementation of ETLE in Improving Traffic Law Compliance in Indonesia

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Abstract

This study aims to analyze the effectiveness of the implementation of the Electronic Traffic Law Enforcement (ETLE) system in traffic law enforcement in Indonesia. The problems raised include the high level of traffic violations, the ineffectiveness of manual law enforcement, and the potential for deviations in the application of administrative sanctions. This study uses a descriptive method with a qualitative approach, utilizing primary data through interviews and secondary data in the form of statistical documentation of traffic violations in the jurisdiction of the Polda Metro Jaya. The results of the study indicate that the ETLE system is able to increase transparency and efficiency of traffic law enforcement by minimizing direct interaction between the police and violators, thereby reducing the potential for deviations such as bribery. In addition, ETLE has proven effective in automatically detecting violations and providing a deterrent effect on violators through the imposition of integrated sanctions. However, challenges still exist, such as limited ETLE camera coverage, a lack of socialization with the community, and technical constraints in operating the system. The ETLE system is an innovation that supports the modernization of traffic law enforcement in Indonesia. To increase its effectiveness, it is necessary to strengthen technological infrastructure, expand the coverage area, and educate the community regarding the importance of traffic compliance.

Keywords: *Influence, Implementation of ETLE System, Compliance, Community Discipline, Traffic.*

Introduction

Various aspects of human life, including the transportation sector, are greatly influenced by the rapid development of information and communication technology. Transportation itself is the activity of transporting goods and people using vehicles driven by humans or machines from one location to another. It is undeniable that transportation is very important for everyday life because it allows mobility from the place of origin to the destination. The use of transportation continues to increase due to human needs. As a result, increased traffic flow causes congestion, delays, accidents, air pollution, and traffic violations (Irfan, 2023; Junior et al., 2021; Ruci et al., 2024).

Considering the densely populated island of Java and urban areas such as the capital city of DKI Jakarta, developing countries like Indonesia have the highest population density and mobility in the world. The extraordinary amount of traffic in this country is caused by a number of factors, including economic growth, urbanization, and high mobility. Thus, traffic problems are complex problems that need to be handled properly. Various problems of traffic violations are caused by high traffic density, the increasing number of vehicles, and disorderly driver behavior

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It is a fact that problems always arise along with the need for solutions. Proper law enforcement is one solution to overcome traffic problems. This aims to increase compliance and awareness of road users by focusing on Law Number 22 Year 2009 on Road Traffic and Transportation (LLAJ Law), which regulates traffic in Indonesia.

According to Article 1, paragraph (2) of the LLAJ Law, traffic is the movement of vehicles and people in the road traffic space. Article 3 of the a quo law states that the purpose of organizing traffic and road transportation in Indonesia is to create security, safety, order, smoothness, and integration with other modes of transportation in traffic services, including complying with traffic ethics.

The police are part of the legal structure that is tasked and authorized to carry out law enforcement activities to maintain security, safety, order, and smoothness of traffic in Indonesia, by Article 14 paragraph (1) letter b of Law Number 2 of 2002 Concerning the Republic of Indonesia National Police. Specifically for the Traffic Police, the law enforcement agency closest to the community, and always the leader in implementing traffic regulations and taking action against violations with tickets (Hasibuan, 2024; Solichan & Mashdurohatun, 2023; Susanto et al., 2022).

Until now, there are still laws that regulate traffic and the Traffic Police system that works manually to record traffic violations. However, the general traffic system has not been changed or improved. The main factor causing accidents is the large number of people using the road who do not obey traffic rules. Until now, the Indonesian National Police (POLRI) is still facing new problems in establishing and implementing laws to enforce traffic laws.

On the other hand, the manual implementation of administrative sanctions (tickets) by the Traffic Police often experiences deviations in its implementation by several individuals, both from the police and road users who ask for or give bribes so as not to be ticketed. Looking deeper, the problem of traffic violation enforcement itself has occurred from the inventory system of violations recorded in the ticket only being completed when the violation sanction and final recording are imposed, so that traffic violators who repeat (recidivist) violations will be given the same sanction without any aggravation/increase in sanctions, this does not provide an optimal deterrent effect (Airlangga & Suryokencono, 2024; Gunawan, 2022; Prihatin & Cahyani, 2022).

To overcome these challenges, the Police have adopted the Electronic Traffic Law Enforcement (ETLE) system. This system uses technology such as cameras and sensors to automatically record traffic violations and send evidence of violations to vehicle owners. It is hoped that this will improve the performance of traffic law enforcement, reduce direct interaction between the police and violators, and minimize the potential for deviations such as bribes. In addition, ETLE allows for systematic data collection of violations, which allows repeat violators to be subject to heavier sanctions. A step forward towards modernizing traffic law enforcement in Indonesia is the launch of ETLE (Dahlan et al., 2023; Kristanto et al., 2024; Triono, 2022).

The implementation of automated traffic enforcement systems has been widely studied in developed countries. Bazzan & Klügl (2022) emphasized that intelligent transportation systems significantly reduce human error and bias in traffic management. Meanwhile, Pinim et al. (2022) found that electronic enforcement reduces corruption and improves public trust in Sulawesi. However, Wahono et al., (2025) noted that enforcement alone is insufficient without public

education and a responsive sanction system. In the Indonesian context, Mayastinasari & Lufpi (2022) identified the lack of legal harmonization as a major barrier in the success of ETLE. Unlike prior research that often isolates legal or technological analysis, this study integrates both to evaluate ETLE as a systemic innovation in traffic law enforcement.

Despite various efforts to modernize traffic law enforcement in Indonesia, including the introduction of the Electronic Traffic Law Enforcement (ETLE) system, little empirical research has evaluated its actual effectiveness using integrated qualitative and legal perspectives. This study contributes to filling this gap by offering an evaluative framework of ETLE's implementation from both regulatory and behavioral standpoints. Moreover, this research provides context-specific insights from the Polda Metro Jaya area, which has the highest traffic density and violation rate in Indonesia, serving as a critical case study. By combining statutory analysis with field data and comparative literature, this study aims to propose an evidence-based policy model that strengthens the enforcement capacity of ETLE and supports sustainable traffic discipline.

Based on the background that has been described above, there are several problem formulations that are discussed further in this study, as follows:

1. How is the construction and phenomenon of traffic law enforcement in Indonesia before and after the implementation of the ETLE system?
2. What are the factors that influence the effectiveness (or ineffectiveness) of the ETLE system in Indonesia?
3. What is the effective ETLE system model in traffic law enforcement in order to create orderly traffic in Indonesia?

Research Method

This study employs an empirical juridical approach with a qualitative-descriptive research design (Pratiwi et al., 2023; Rafsanai et al., 2025; Satria & Hafidz, 2024). The objective is to assess the effectiveness of the Electronic Traffic Law Enforcement (ETLE) system in reducing traffic violations and enhancing legal compliance in Indonesia, particularly in the jurisdiction of Polda Metro Jaya.

Primary data were collected through semi-structured interviews with law enforcement officers (Ditlantas Polda Metro Jaya), transportation experts, and road users. Secondary data consisted of official statistics on traffic violations (2019–2023), Law No. 22 of 2009 on Road Traffic and Transportation, and institutional documents and academic literature.

Informants were selected using purposive sampling based on their involvement with or exposure to the ETLE system. A total of 15 key informants were interviewed, including traffic police officers, legal scholars, and frequent road users. Data were obtained through direct observation of ETLE installations in key traffic areas, face-to-face and phone interviews, and also document analysis of violation records and media coverage.

The data were analyzed using content analysis and thematic coding to identify recurring patterns in responses related to legal awareness, enforcement perception, and system effectiveness. The analysis framework followed Soekanto's theory of law enforcement effectiveness, focusing on structural, cultural, and substance dimensions. To enhance data credibility, triangulation was used by comparing interview data with official documents and media reports. Member-checking

was conducted with selected respondents to confirm interpretation accuracy.

Result and Discussion

Economic growth, urbanization, and high mobility in Indonesia, especially in densely populated areas such as Java Island and DKI Jakarta, contribute to extraordinary traffic density. Proper law enforcement in the traffic environment can improve compliance and awareness of traffic and road users. Law Number 22 of 2009 concerning Road Traffic and Transportation (LLAJ Law) is the legal basis for organizing traffic, which aims to realize security, safety, order, smoothness, and integration with other modes of transportation, as well as traffic ethics and national culture.

As part of the Indonesian National Police (Polri), the Traffic Police performs a very important job in enforcing traffic laws. Although there are rules and laws that are implemented through manual ticketing, traffic violations still often occur, and people's behavior has not changed much. In addition, manual ticketing is susceptible to deviation from the authorities and the community, known as bribery practices. Only violation sanctions and final recording are recorded in the violation inventory system in the ticket. Traffic rule violators who commit repeat violations (recidivists) will be given the same sanctions without any aggravation or increase.

In general, traffic violation data is influenced by many variables. Traffic violations tend to be high and varied before the implementation of ETLE, especially in areas with heavy traffic, such as DKI Jakarta. Violations of traffic signs, road markings, speed limits, helmet use, and completeness of vehicle documents are some of the most common traffic violations.

This high level of violations causes accidents and threatens the safety of others on the road. In addition, the image of law enforcement is getting worse because the manual ticketing system used by the Traffic Police is often misused by officers and members of the public involved in bribery. In addition, the violation inventory system that only records sanctions and does not burden repeat offenders (recidivists) is considered not to provide an adequate deterrent effect. This condition shows that the Indonesian National Police face major challenges in making policies and implementing more efficient law enforcement to address traffic violations that continue to be repeated and increasingly complex.

Then, the results of a survey conducted on the community in the jurisdiction of Polda Metro Jaya showed that most respondents had a basic understanding of traffic law provisions, especially Law Number 22 of 2009. However, knowledge about the Electronic Traffic Law Enforcement (ETLE) system, including the working mechanism, use of cameras, and the ticket delivery process, varied, with many respondents feeling that information about ETLE had not been well socialized.

In terms of experience related to traffic violations, many respondents admitted to having committed violations, with common types of violations including running red lights, not wearing helmets, and violating road markings. Most respondents also had experience of being ticketed either manually or electronically, with the reasons for violations often mentioned being a lack of awareness or ignorance of the rules.

Effectiveness of law enforcement, the majority of respondents considered that ETLE is fairer than manual ticketing because it reduces direct interaction with officers, which has the potential to lead to bribery practices. They also believe that ETLE helps improve traffic discipline, although the deterrent effect on violators is considered not yet optimal. Respondents believe that the existing sanctions are not enough to provide a deterrent effect for repeat violators and suggest

that the violation recording system be improved to provide heavier sanctions.

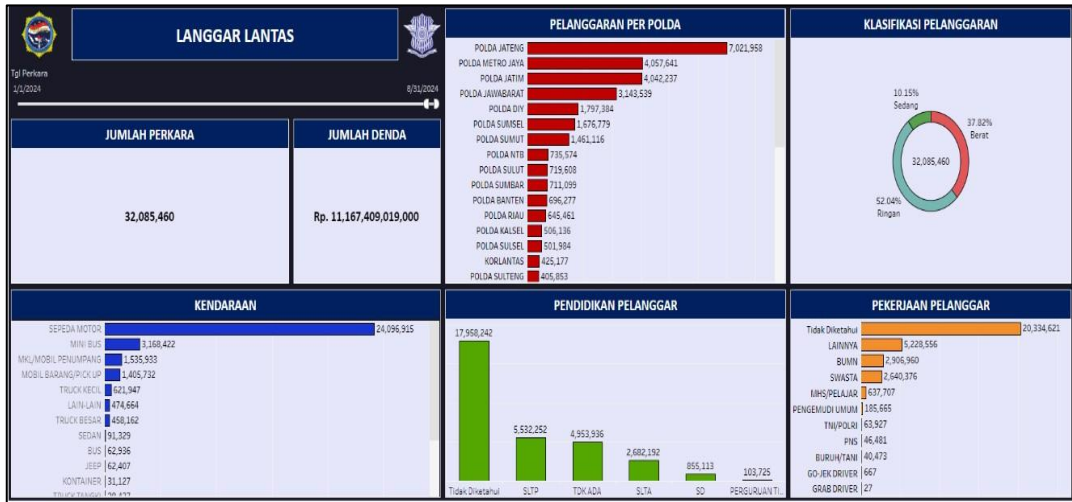
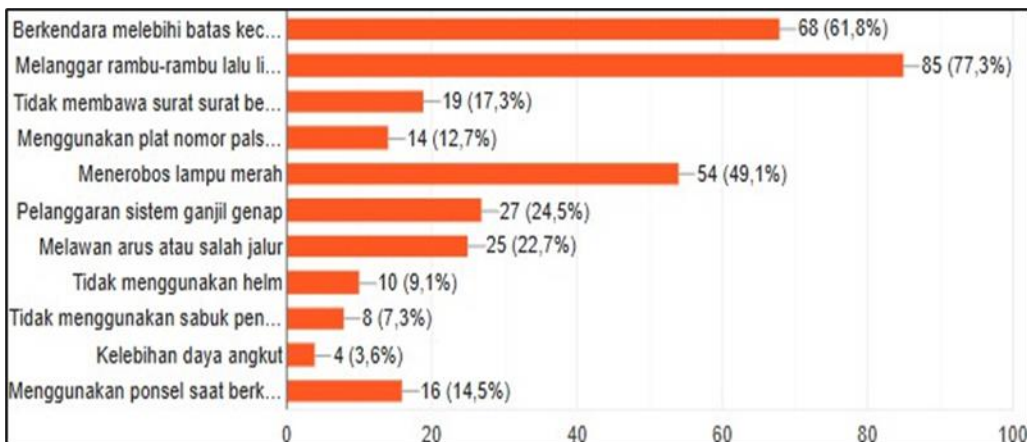


Figure 1. Data Before and After ETLT Implementation



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Based on the data presented in the figure above, ETLE has gradually begun to be used, with an initial focus on metropolitan areas. This data shows that there is a gradual correlation between the implementation of ETLE and a decrease in the number of traffic violations. However, this decrease is not uniform across regions and is influenced by various factors. The level of ETLE socialization, the availability of ETLE infrastructure (including the number and location of cameras), and the level of community compliance are some of them.

Data from 2022 and 2023 provide a clearer indication of the effectiveness of ETLE. Although there is no specific data on the number of violations nationally, a comparative analysis between the periods before and after the implementation of ETLE shows a significant decrease in the number of violations in areas that have implemented ETLE well.

Previous studies have examined the implementation of Electronic Traffic Law Enforcement (ETLE) in various jurisdictions and found positive initial outcomes. For instance, AS et al. 2025 and Wirna et al., (2023) reported that the adoption of ETLE in South Sulawesi led to a measurable reduction in visible traffic violations, especially in zones with stable surveillance infrastructure. Similarly, Mashdurohatun & Hr (2024) emphasized that the transition from manual to electronic enforcement enhanced public perception of fairness and reduced opportunities for bribery. However, both studies noted that the success of ETLE is highly dependent on local government support, public awareness, and technological readiness.

These empirical findings are consistent with Soerjono Soekanto's theory (2016) of legal effectiveness, which asserts that law enforcement outcomes are shaped by three key dimensions: the structure of legal institutions, the substance of legal norms, and the legal culture of the community. In the context of ETLE, the structure is represented by the presence and reliability of technology (cameras, data systems), the substance lies in the clarity of regulations and sanctions, while the culture is reflected in the public's willingness to comply with the law even without physical supervision.

Building on these perspectives, this research supports the notion that ETLE has the potential to reduce traffic violations, particularly in metropolitan regions where infrastructure and public outreach are more advanced. Data from 2022 and 2023 show a significant decline in recorded violations in areas with well-implemented ETLE systems. However, this impact is not uniformly distributed. Regions with limited camera coverage or weak legal socialization programs tend to experience lower compliance rates.

Regarding the Construction and Phenomenon of Traffic Law Enforcement in Indonesia Before and After the Implementation of the ETLE System

Traffic law enforcement in Indonesia relies heavily on manual ticketing carried out by the Traffic Police (Polantas) before the implementation of the Electronic Traffic Law Enforcement (ETLE) system, using this method causes ineffectiveness in the implementation of ticketing in traffic. Soerjono Soekanto stated that the theory of effectiveness is measured by the existence of rules and how the law influences people's behavior. In terms of manual law enforcement, Law Number 22 of 2009 concerning Traffic and Road Transportation (LLAJ Law) regulates violations and sanctions, but its implementation is often ineffective in changing the behavior of traffic violators.

The potential for deviation is a major problem. The theory of law enforcement emphasizes the importance of clean and integrity law enforcement officers; however, police officers and the community can be involved in bribery practices, which damage the integrity of the law

enforcement system. In addition, the manual ticketing system is also less effective in dealing with repeat offenders (recidivists) because there are no systematic sanctions applied to those who violate it. As a result, the level of traffic violations remains high. Many road users ignore the rules, which causes accidents and threatens the safety of other road users. The Indonesian National Police face major challenges in determining policies and implementing them to enforce the law on ongoing traffic violations.

To overcome the weaknesses of manual law enforcement, the ETLE system uses technology to improve traffic compliance and awareness, reduce the possibility of deviation, and improve law enforcement performance. According to public policy theory, the implementation of ETLE is a form of government intervention to address traffic problems. This system uses cameras to automatically capture violations and send tickets to the vehicle owner's address. This is expected to increase the deterrent effect and reduce violations.

The results of the study showed that the majority of the public knows about ETLE and agrees that this system can help reduce traffic violations. Respondents also feel more orderly in traffic after ETLE and consider this system to be fairer than manual law enforcement. Traffic violation data also shows a decrease after the implementation of ETLE. However, ETLE also has shortcomings. This system still needs to be refined and requires adequate infrastructure. In addition, the effectiveness of ETLE also depends on the legal awareness and legal compliance of the community.

The implementation of ETLE is a positive step in improving traffic law enforcement in Indonesia. However, to achieve optimal effectiveness, there needs to be continuous system improvement, increased public legal awareness, and consistent law enforcement. By learning from other countries such as Japan, Indonesia can build a more effective traffic law enforcement system and contribute to better road safety.

Previous studies by Priyogo (2025) stated that ETLE is a new effort made by the Police as a way to reduce the number of violations and motor vehicle accidents in today's traffic system. However, this has not been optimally felt its positive impact on society. This paper uses a qualitative method. Based on the study conducted, it can be seen that the implementation of electronic traffic supervision in an effort to reduce traffic violations in the Demak Police area has not been effective. Because after installing the CCTV program as a surveillance camera and a warning camera for traffic violators on the highway, the number of traffic violations at red lights in the jurisdiction of the Demak Police is still high.

These empirical findings align with Soekanto's legal effectiveness theory (2016), which argues that the success of law enforcement is determined by three interrelated components: the legal structure (institutions and infrastructure), substance (the legal content and consistency of sanctions), and legal culture (the awareness, attitude, and behavior of the public toward the law). In the case of ETLE, the structure refers to the availability and distribution of surveillance cameras and data systems; the substance relates to clear procedures and proportional sanctions; and legal culture manifests in how willingly and consistently the public complies with traffic regulations.

The present study confirms several of these prior insights while also offering new perspectives from the jurisdiction of Polda Metro Jaya. Survey data show that most respondents were familiar with the ETLE system and agreed that it has contributed to reducing traffic violations. Many indicated that they became more disciplined after the system's implementation and perceived

ETLE to be fairer than traditional manual enforcement. Official traffic data from 2022–2023 support this perception, showing a marked reduction in violations in areas covered by ETLE.

Nonetheless, the system has not yet achieved optimal performance. Respondents pointed out issues such as limited coverage of ETLE cameras, lack of clarity in the sanction process, and insufficient public outreach. These findings suggest that while ETLE effectively addresses structural and procedural weaknesses of manual law enforcement, its long-term success depends on improvements in legal socialization and public engagement.

From the researcher's perspective, ETLE represents a strategic advancement in Indonesia's traffic law enforcement landscape. However, to maximize its impact, there must be ongoing investments in infrastructure, consistent enforcement practices, and public legal education. Drawing lessons from countries like Japan, where electronic enforcement is integrated with citizen scoring systems and long-term behavioral monitoring, Indonesia can develop a more holistic and adaptive traffic law enforcement model.

Regarding Factors Affecting the Effectiveness (or Ineffectiveness) of the ETLE System in Indonesia

Many aspects of human life have changed due to advances in information and communication technology, including the transportation sector. The transportation sector in developing countries like Indonesia still faces classic problems such as congestion, accidents, air pollution, and traffic violations. The Indonesian government uses the ETLE system to address these issues. Surveillance cameras and information technology can improve legal compliance and reduce traffic accidents.

In Indonesia, the effectiveness of ETLE is determined by many variables. The two main categories are supporting and inhibiting factors:

1) High Legal Awareness

People who have a good understanding of traffic regulations and are aware of the importance of legal compliance tend to be more obedient to the regulations, even without direct supervision. One of the factors that determines the success of ETLE is the level of legal awareness of the community. People who understand traffic regulations and are aware of the importance of legal compliance will be more likely to avoid violations.

2) Effective Socialization

To increase public awareness and encourage legal compliance, an extensive ETLE system, including its mechanisms, types of violations, and sanctions, is very useful. Socialization can be done through various communication channels, such as direct outreach activities and social media.

3) Transparency and Accountability

A transparent process for handling violations, which includes the provision of clear evidence and an easily accessible complaint mechanism, can increase public trust in the ETLE system and prevent abuse of authority.

Factors Inhibiting ETLE Effectiveness

1) Lack of Legal Awareness

Although most people know the term "road traffic and transportation," there are still a few who are not familiar with this term. Lack of legal awareness can be an obstacle to achieving the effectiveness of ETLE. If people do not understand the regulations or are not aware of the consequences of violations, they will be more likely to commit violations, even though there is supervision from ETLE.

2) Community Resistance

Many people oppose the ETLE system, which can interfere with the performance of the system. This can be seen in various forms, such as deliberate violations, attempts to avoid cameras, or criticism on social media.

3) Deviations by Law Enforcement Officers

Deviations committed by law enforcement, such as corruption or abuse of authority, can damage the integrity of the ETLE system and reduce public trust in it. As a result, the system can be less effective and can even trigger public resistance.

4) Unclear Regulations

Ambiguity about the regulations of the ETLE system, such as procedures for handling violations, complaint mechanisms, and personal data protection, can cause confusion and uncertainty among the public, reduce public trust in the system, and hinder its performance.

Various interrelated factors, both supporting and inhibiting, influence the performance of the ETLE system in Indonesia. To achieve maximum results, extensive efforts need to be made to increase public legal awareness, socialize the ETLE system, ensure transparency and accountability, improve infrastructure and technology, and continue to enforce the law. The ETLE system can be a useful tool to improve legal compliance, reduce accident rates, and create a safer traffic culture in Indonesia by addressing existing challenges and utilizing existing opportunities. In addition, questionnaires and interviews conducted with drivers in the jurisdiction of the Polda Metro Jaya showed several obstacles that hinder the performance of ETLE.

One of them is social tolerance, where the public misunderstands due to the lack of professional officers and the limited location of ETLE camera installations. For example, entering the busway lane when there is a traffic jam creates the perception that the rules are flexible, but drivers who use cellphones for navigation are still ticketed. In addition, public compliance is usually temporary and only appears when there is direct supervision, such as ETLE cameras or the police.

Previous research has acknowledged that the effectiveness of the Electronic Traffic Law Enforcement (ETLE) system is not determined solely by the presence of technology but also by human behavior, enforcement consistency and public perception. For instance, Maharani & Tri (2025) highlighted that public responses to enforcement both manual and electronic are largely shaped by situational awareness rather than deep legal understanding. ETLE compliance often occurs only in areas under visible surveillance, and social behavior remains resistant to long-term legal discipline without proper education. Additionally, inconsistent camera placement and poor public communication reduce the deterrent effect of ETLE in less-developed regions.

These insights are consistent with the results of this study, which identified a range of structural and cultural barriers based on questionnaires and interviews with drivers in the jurisdiction of

Polda Metro Jaya. One significant obstacle is social tolerance toward violations, often stemming from uneven enforcement and misinformation. Respondents reported uncertainty about which violations are prioritized and where enforcement is likely. For example, many drivers admitted to entering the busway lane during traffic congestion, assuming that enforcement would be relaxed in such circumstances. Meanwhile, other actions—such as using a mobile phone for navigation resulted in automatic fines, which many perceived as unfair due to the lack of contextual consideration.

In addition, public compliance is often external and temporary, triggered primarily by the presence of ETLE cameras or officers, rather than rooted in personal commitment to legal norms. This reactive behavior suggests a weak internalization of traffic laws, and highlights the need for legal culture development an aspect heavily emphasized in Soerjono Soekanto's theory of legal effectiveness.

Therefore, while ETLE is structurally sound and procedurally consistent in many ways, its optimal impact is contingent on broader reforms. These include improving professional capacity among enforcement officers, expanding camera infrastructure equitably across regions, and fostering public trust through consistent legal communication and education. Learning from past studies and field experiences, it is clear that a purely technological solution cannot substitute for the need to cultivate a socially embedded culture of traffic compliance.

Regarding the Effective ETLE System Model in Traffic Law Enforcement to Create Orderly Traffic in Indonesia

The ETLE enforcement system offers an innovative solution to Indonesia's complex traffic problems. Promising more efficient, transparent, and accountable law enforcement, ETLE relies on an integrated system model that relies on advanced technologies such as high-quality surveillance cameras, stable communication networks, and electronic law enforcement systems. To realize justice and legal certainty, consistent and transparent law enforcement with clear Standard Operating Procedures (SOPs) and effective complaint mechanisms must be implemented. In addition, increasing public legal awareness through intensive and continuous socialization, as well as traffic education from an early age, is an important foundation. Research shows that the implementation of ETLE has succeeded in reducing the number of traffic violations, but there are still people who commit violations. Therefore, ETLE must be balanced with efforts to increase legal awareness and public education. The public also has a positive perception of ETLE, considering it fairer than manual law enforcement. An effective and progressive sanction system is also needed to provide a deterrent effect, such as a violation point system and alternative sanctions. An effective ETLE system model requires long-term investment, but this investment will provide major benefits in the form of reduced accident rates, improved traffic order, and the creation of a safer and more responsible traffic culture.

Several studies have examined the implementation of ETLE and its effects on traffic law compliance in Indonesia. Priyogo (2025) observed a significant decline in traffic violations following the ETLE rollout, although he noted that repeat violations remained due to the lack of progressive sanctioning mechanisms. Similarly, Praharsa et al., (2024) found that while public perceptions of fairness increased under ETLE, gaps in infrastructure and inconsistent enforcement practices limited its overall deterrent effect.

These findings are well-grounded in Soerjono Soekanto's theory of legal effectiveness (2016), which identifies three core factors that determine whether a law can be enforced effectively: the

legal structure, legal substance, and legal culture. In the context of ETLE, the structure refers to the existence of supporting institutions and technologies; substance refers to the clarity, consistency, and fairness of the legal rules and sanctions; and culture pertains to the attitudes, awareness, and behaviors of the public toward traffic regulations. A system may fail, even with the most advanced infrastructure, if it lacks social legitimacy and cultural acceptance.

From the perspective of the present study, while ETLE represents a technological leap forward in Indonesia's legal enforcement framework, its full potential will only be realized if it is supported by consistent legal norms, targeted public education, and a responsive sanctioning model. The positive public perception of ETLE should be viewed as an opportunity to further strengthen trust in legal institutions. Therefore, the researcher advocates for the incorporation of a violation point system and rehabilitative penalties, such as mandatory traffic education or temporary license suspension for repeat offenders. These strategies not only punish violations but also serve corrective and preventive functions, fostering a more law-abiding driving culture.

In sum, ETLE is not merely a law enforcement tool but a vehicle for broader behavioral change. Its continued success will require long-term investment, not just in hardware, but in the legal consciousness of citizens, institutional integrity, and adaptive policy development.

Conclusions

This study concludes that the implementation of the ETLE system in the jurisdiction of Polda Metro Jaya has succeeded in reducing the number of traffic violations, especially after being implemented comprehensively in 2022. This shows that a technology-based law enforcement system can improve legal compliance. However, many factors, both objective, such as legal basis and political support, and subjective, such as the professionalism of the apparatus, availability of facilities, and the legal culture of the community, influence the performance of this ETLE system. Lack of adequate socialization, existing legal loopholes, and low public trust in the system are the main obstacles that need to be overcome. There are several strategic steps needed to optimize the effectiveness of ETLE:

1. The government needs to update the Traffic and Road Transportation Law to keep up with technological developments and the need for law enforcement through the ETLE system, including implementing a more organized and tiered sanction system.
2. In order for the system to function properly, it is necessary to increase the number and quality of ETLE devices and improve road infrastructure and traffic signs.
3. To increase public awareness of the importance of the ETLE system and compliance with traffic laws, education and socialization are needed.
4. In-depth training and understanding of ETLE technology are needed to improve the professionalism of law enforcement officers. In addition, it is important to ensure that the ETLE system is integrated with other law enforcement systems.
5. To foster public trust in the ETLE system, the application of penalties must be transparent and consistent.
6. To support ETLE operations, the government needs to allocate more resources and funds, and traffic law enforcement must be a national priority with cooperation between the government, law enforcement officers, and the private sector.

References

- Airlangga, U. A. W., & Suryokencono, P. (2024). Sinkronisasi Hukum Pengaturan Electronic Traffic Law Enforcement (Etle) Menurut Undang-Undang No. 22 Tahun 2009 tentang Lalu Lintas dan Angkutan Jalan. *Indonesian Journal of Law and Justice*, 1(4), 9. <https://doi.org/10.47134/ijlj.v1i4.2278>
- AS, A. G., Alauddin, A., & Rosmanila, R. (2025). Static Electronic ETLE Electronic Tickets In Traffic Violations Processing At The Bengkulu Regional Police Traffic Directorate. *Fox Justi: Jurnal Ilmu Hukum*, 15(02), 379–391.
- Bazzan, A. L. C., & Klügl, F. (2022). *Introduction to intelligent systems in traffic and transportation*. Springer Nature. [https://books.google.com/books?hl=id&lr=&id=p4RyEAAAQBAJ&oi=fnd&pg=PR1&dq=Bazzan,+Ana+L.C.,+Franziska+Klügl,\(2022\),+“Introduction+to+Intelligent+Systems+in+Traffic+and+Transportation”,+Synthesis+Lectures+on+Artificial+Intelligence+and+Machine+Learning,\(Switzerland:+Springer+Nature+Switzerland+AG.&ots=IuELh3wAMp&sig=AVCBMaCknKFLVFi8quhcC6W5SJk](https://books.google.com/books?hl=id&lr=&id=p4RyEAAAQBAJ&oi=fnd&pg=PR1&dq=Bazzan,+Ana+L.C.,+Franziska+Klügl,(2022),+“Introduction+to+Intelligent+Systems+in+Traffic+and+Transportation”,+Synthesis+Lectures+on+Artificial+Intelligence+and+Machine+Learning,(Switzerland:+Springer+Nature+Switzerland+AG.&ots=IuELh3wAMp&sig=AVCBMaCknKFLVFi8quhcC6W5SJk)
- Dahlan, M., Jalil, H., & Tripa, S. (2023). Electronic Traffic Law Enforcement (Etle) Policy: The Principle Of Legal Certainty In A Rule Of Law. *Petita: Jurnal Kajian Ilmu Hukum Dan Syariah*, 8(2), 275–289.
- Police have adopted the Electronic Traffic Law Enforcement (ETLE) sys
- Gunawan, H. (2022). Analisa etika dan keterampilan terhadap tingkat pelanggaran lalu lintas (roda dua) di Indonesia. *Jurnal Sosial Dan Sains*, 2(8), 823–830. <https://doi.org/10.59188/jurnalsosains.v2i8.447>
- Hasibuan, S. A. (2024). Effectiveness Electronic Traffic Law Enforcement (Etle) In The Efforts To Regulate Traffic Directorate Cross-Regional Police Affairs Within A Region Bengkulu City. *International Journal of Policy and Public Administration*, 5(2), 147–154. <http://dx.doi.org/10.30659/rlj.2.2.%25p>
- Irfan, B. (2023). Electronic Governance in the Implementation of Electronic Traffic Law Enforcement (ETLE) in the City of Makassar. *KnE Social Sciences*, 8(17 SE-Articles), 443–452. <https://doi.org/10.18502/kss.v8i17.14139>
- Junior, U. A., Sumadinata, R. W. S., Widianingsih, I., & Nurasa, H. (2021). Implementation of ETLE (Electronic Traffic Law ENforcement) policy at Polda Metro Jaya’s Ditlantas. *Seybold Rep*, 182–195. <https://www.academia.edu/download/108331141/V17I05A15.pdf>
- Kristanto, L., Suryandari, W. D., & Sejati, H. (2024). Implementation of Road Traffic Observation with ETLE as a Form of Legal Development in the Digital Era. *UNES Law Review*, 6(4), 11408–11416. <https://doi.org/10.31933/unesrev.v6i4.2159>
- Law Number 2 of 2002 Concerning the Republic of Indonesia National Police.
- Law Number 22 Year 2009 on Road Traffic and Transportation.
- Maharani, L. A. Y., & Tri, N. G. A. A. M. (2025). The Effectiveness of the Application of Electronic Ticketing Criminal Sanctions Against Traffic Violators in the Denpasar. *Journal of Law, Politic and Humanities*, 5(4), 3012–3023. <https://doi.org/10.38035/jlph.v5i4.1681>
- Mashdurohatun, A., & Hr, M. (2024). 2024 Implementation Of Electronic Traffic Law Enforcement (Etle) Based On Justice Values Linanda. 32(1), 101–107.
- Mayastinasari, V., & Lufpi, B. (2022). Efektivitas electronic traffic law enforcement. *Jurnal Ilmu Kepolisian*, 16(1), 9. <https://doi.org/10.35879/jik.v16i1.350>
- Narendroputro, W., & Rusfian, E. Z. (2023). The Innovation Capacity of the Electronic Traffic Law Enforcement (ETLE) of the Indonesian National Police Viewed by the Observatory of Public Sector Innovation (OPSI) Framework. *Jurnal Public Policy*, 9(4), 262–269. <https://doi.org/10.35308/jpp.v9i4.7890>
- Nurhanifah, I., & Kusdarini, E. (2023). Discipline and Honest Character Formation through the

- Implementation of Electronic Traffic Law Enforcement in High School Students. *Journal of Education Research and Evaluation*, 7(3), 545–551. <https://doi.org/10.23887/jere.v7i3.67156>
- Pinim, F. H., Pawennei, M., & Zainuddin, Z. (2022). Efektifitas Penegakan Hukum Pelanggaran Lalu Lintas Melalui Tilang Elektronik: Studi Direktorat Lalu Lintas Kepolisian Daerah Sulawesi Selatan. *Journal of Lex Generalis (JLG)*, 3(8), 1409–1423. <https://www.pasca-umi.ac.id/index.php/jlg/article/view/1050>
- Praharsa, L. B. W., Muslim, M. A., Kusuma, R., & Arisandi, A. (2024). Policy Implementation of The Electronic Traffic Law Enforcement in The Greater Jakarta Metro Area Police Jurisdiction. *Jurnal Ilmu Kepolisian*, 18(2), 191–205. public perceptions of fairness increased under ETLE, gaps in infrastructure and inconsistent enforcement practices limited its overall deterrent effect.
- Pratiwi, I. S., Agustiwati, A., & Priambada, B. S. (2023). Law enforcement obstacles to traffic violations through electronic tips (Etle) in Surakarta. *The International Journal of Politics and Sociology Research*, 11(2), 245–253. <https://doi.org/10.35335/ijopsor.v11i2.116>
- Prihatin, P. S., & Cahyani, I. (2022). Implementation of Electronic Ticketing Program Policies in Pekanbaru City. *MIMBAR*, 38(2), 232–239. <https://repository.uir.ac.id/id/eprint/22124>
- Priyogo, T. (2025). Optimization of Electronic Traffic Monitoring in Traffic Violations (Case Study in Demak Police Area). *Ratio Legis Journal*, 4(1), 247–258. <http://dx.doi.org/10.30659/rlj.4.1.247-258>
- Rafsana, A. R., Hasbi, H., & Faisal, M. (2025). Criminological Analysis Of Electronic Ticketing (ETLE). *HORIZON PUBLIC LEGAL STUDIES*, 1(2). <https://doi.org/10.56087/hegels.v1i2.976>
- Ruci, K. D., Soehodho, S., & Sumabrata, R. J. (2024). Study of Factors Influencing Traffic Violations in Jakarta: Perspective of the Theory of Planned Behavior (TPB) in the Implementation of Electronic Traffic Law Enforcement (ETLE). *Smart City*, 4(2), 2. <https://doi.org/10.56940/sc.v4.i2.2>
- Satria, M. P. P., & Hafidz, J. (2024). Implementation of Electronic Traffic Law Enforcement System in Resolving Traffic Violation Crimes to Improve Legal Order (Case Study at Grobogan Police). *Jurnal Hukum Khaira Ummah*, 19(2), 210–221. <http://dx.doi.org/10.30659/jhku.v19i2.19333>
- Soekanto, S. (2016). Faktor-faktor yang mempengaruhi penegakan hukum.
- Solichan, S., & Mashdurohaturun, A. (2023). Law Enforcement of Traffic Violations Through Electronic Traffic Law Enforcement (ETLE) at the Central Java Regional Police. *Ratio Legis Journal*, 2(2), 1011–1030. <http://dx.doi.org/10.30659/rlj.2.2.%25p>
- Susanto, I. S. W., Aini, V. E. Q., Risqi, K. L., Khandari, M. A., & Kurniawan, A. (2022). Effectiveness of Implementing the ETLE Program in Following Traffic Violations. *Int. J. Latest Res. Humanit. Soc. Sci*, 5(12), 127–132. <http://www.ijlrhss.com/paper/volume-5-issue-12/17-HSS-1617.pdf>
- Sutarno, S., Putriana, L., & Miranda, A. (2022). The Influence Of Implementation Of Electronic Tickets, Policy Issuing Permissions Driving And Discipline Against Traffic Violations. *International Journal of Economics and Management Research*, 1(2), 64–77. <https://doi.org/10.55606/ijemr.v1i2.20>
- Triono, A. Y. (2022). Law Enforcement Against Traffic Violations And Electronic-Based Road Transport Through Electronic Traffic Law Enforcement. *Jurnal Hukum Khaira Ummah*, 17(4), 190–203. <http://dx.doi.org/10.30659/jhku.v17i4.19322>
- Wahono, T. C., Isnaini, I., & Fresh, W. (2025). Effectiveness of Traffic Law Enforcement and Alternative Models for Solving It at the Central Tapanuli Police. *Journal of Public Representative and Society Provision*, 5(2), 317–325. <https://doi.org/10.55885/jprsp.v5i2.536>
- Wirna, I. N., Paraniti, A. A. S. P., & Pidada, I. B. A. (2023). Implementation of E-Tickets in the Prosecution of Traffic Violations in Denpasar City (A Study of the Ticket Hearing Process at the Denpasar District Court). *Sharia Oikonomia Law Journal*, 1(4), 221–240. <https://doi.org/10.55849/solj.v1i4.604>