

Smart Law Enforcement and Urban Mobility: Evaluating the Impact of Electronic Traffic Law Enforcement (ETLE) on Traffic Discipline (Kamseltibcarlantas) in Emerging Cities

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Citation: Amiruddin, S., Aziz, Y. M., Rosyid, M. I., Danial, D. W., Sugiharto, A., & Nurfebriansyah, A. R. (2025). Smart Law Enforcement and Urban Mobility: Evaluating the Impact of Electronic Traffic Law Enforcement (ETLE) on Traffic Discipline (Kamseltibcarlantas) in Emerging Cities. *Journal of Cultural Analysis and Social Change*, 10(3), 2213–2231. <https://doi.org/10.64753/jcasc.v10i3.2738>

Published: December 03, 2025

ABSTRACT

This research discusses the Implementation of the Electronic Traffic Law Enforcement (ETLE) Program and the mechanisms and legal sanctions in order to create Kamseltibcarlantas in the Rangkasbitung City Area, Lebak Regency, Banten Province. The research method used in this study is a descriptive qualitative method. The theory used is Edward III's theory of Public Implementation seen from four variables, namely communication. Resources, disposition, and organizational structure. In the discussion of this study, it is seen from vehicle users in complying with traffic and the ETLE program whether it is carried out properly or whether there are obstacles in its implementation. The purpose of this is to achieve Security, Safety, Order, and Smooth Traffic (Kamseltibcarlantas) desired by every road user. The behavior of road users greatly influences the realization or not of Kamseltibcarlantas in the Rangkasbitung City area, Lebak Regency, Banten Province.

Keywords: Public Implementation, ETLE Program, Rangkasbitung City.

INTRODUCTION

The advancement of digital technology within the legal sector and urban governance has spurred the emergence of diverse innovations directed toward fostering efficient, transparent, and accountable government. A particularly notable innovation in the domain of traffic law enforcement is the implementation of the Electronic Traffic Law Enforcement (ETLE) system. This system employs surveillance cameras (CCTV) in conjunction with digital technologies to automatically detect, record, and process traffic violations. Such a mechanism supplants the conventional manual ticketing system, which has been susceptible to irregularities and heavily reliant on direct interactions between law enforcement officers and offenders (Wahyuningsih & Iksan, 2019). The introduction of ETLE constitutes a constructive response to societal demands for enhanced security, convenience, order, and safety in traffic management, particularly in metropolitan areas (Bagasatwika, 2020). The overarching objective of ETLE is to establish safer, more orderly, and more efficient traffic conditions, while simultaneously reinforcing public trust in law enforcement institutions (Devi Lestari et al., 2020).

In major cities such as Jakarta and Surabaya, the ETLE system has demonstrated a positive impact on road user behavior. Empirical studies indicate a decline in traffic violations following the implementation of ETLE, particularly in offenses captured by surveillance cameras, such as lane violations, the use of mobile phones while

driving, and the failure to wear seat belts. Furthermore, this innovation has contributed to reducing the overall incidence of traffic violations and has mitigated the occurrence of illicit practices involving direct interactions between officers and violators, as observed in the case of Surabaya (Devi Lestari et al., 2020). In addition, the application of electronic ticketing has been found to minimize the rate of traffic accidents (Deformasi; Lindawati et al., 2023). These findings underscore the role of technology as an effective instrument of social control in metropolitan areas where supporting infrastructure is relatively well developed.

Nevertheless, the majority of prior studies have predominantly focused on large metropolitan areas characterized by well-developed infrastructure, sufficient human resources, and relatively high levels of digital literacy. For instance, the study by Putra et al. (2025) demonstrates that while the implementation of ETLE in Jakarta has had a positive impact on traffic order, it continues to face various technical and participatory challenges, such as limited camera availability and low public awareness of the digital system. Similarly, research conducted by Atmojo & Kusumastuti (2023) in Semarang indicates that although ETLE has been implemented since 2021, public understanding of its mechanisms remains limited, particularly among communities with lower levels of digital literacy. In a different context, the study of Dwiningrum & Irma Fitriana Ulfah (2024) ETLE implementation in South Tangerang reveals that insufficient public outreach, inadequate human resource support, and institutional unpreparedness represent major obstacles to system optimization. Accordingly, scholarly inquiry into ETLE in emerging cities characterized by infrastructural and institutional limitations remains relatively scarce in the literature, leaving considerable room for further academic exploration regarding both the effectiveness and challenges of implementing this system outside metropolitan areas.

Rangkasbitung, as the administrative center of Lebak Regency in Banten Province, represents a typical example of an emerging city that faces such challenges. According to data from the Central Bureau of Statistics (BPS) of Lebak Regency in 2024, the region has a total population of 1,433,698, consisting of 737,148 males and 696,558 females. The high level of community mobility in this area has inevitably contributed to an increase in vehicle volume as well as the potential for traffic violations. Data from the Lebak Resort Police Traffic Unit (2024) indicate that throughout 2023 there were 117 recorded traffic accidents, resulting in 106 fatalities, 17 cases of serious injury, and material losses amounting to IDR 227,900,000. These figures highlight the urgency of strengthening the traffic law enforcement system in the region.

Legally, the foundation for the implementation of ETLE is stipulated in Law No. 22 of 2009 on Road Traffic and Transportation, which affirms the role of the police as both law enforcers and protectors of road user safety. This provision is also consistent with Article 27(1) of the 1945.

Constitution of the Republic of Indonesia, which guarantees the equality of all citizens before the law. In this context, traffic law enforcement is not merely repressive in nature but also carries educational and preventive dimensions aimed at fostering a culture of orderly traffic behavior (Dwilaksana, 2020). The application of technologies such as ETLE is considered strategic within the framework of road safety policing, in order to realize *Kamseltibcarlantas* (traffic security, safety, order, and flow).

From a theoretical perspective, this study draws upon the Policy Implementation Theory proposed by Edward III (1980). This theory posits that the success of policy implementation is influenced by four key variables: (1) Communication, (2) Resources, (3) Disposition or Attitudes of the Implementers, and (4) Bureaucratic Structure. These four variables interact with one another and serve as critical determinants in ensuring the effectiveness of policy at the implementation level.

In the context of implementing the Electronic Traffic Law Enforcement (ETLE) system in Rangkasbitung, these four variables serve as an analytical framework for assessing policy effectiveness. Ineffective distribution of communication may result in low public understanding of the procedures and objectives of the policy. Limited resources, whether in the form of budget allocation, technological infrastructure, or the quality of human resources, affect the scope and consistency of implementation. The disposition or attitudes of implementers, such as their level of commitment, integrity, and willingness to adapt to digital systems, determine the sustainability of the policy in practice. Meanwhile, a fragmented bureaucratic structure or insufficient interagency coordination has the potential to generate procedural obstacles and slow down policy execution.

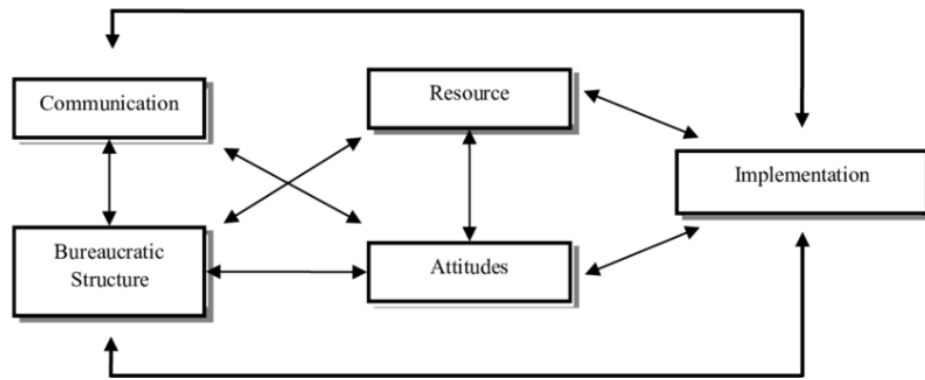


Figure 1. George C. Edward III's Policy Implementation Model.

Source: Researcher, 2025.

Nevertheless, the implementation of ETLE in Rangkasbitung continues to encounter several serious challenges. Obstacles such as limited dissemination of policy information to the public, low awareness of digital regulations, and the suboptimal mapping of high-risk areas for traffic violations and accidents constitute critical barriers (Prabawa et al., 2021). Moreover, budgetary constraints, inadequate technical capacity among local law enforcement officers, and weak inter-agency coordination further represent structural impediments to accelerating the transformation toward digital-based law enforcement (Prabawa et al., 2021).

Given these complexities, evaluating the implementation of ETLE in emerging cities such as Rangkasbitung becomes highly significant. The novelty of this study lies in its attempt to fill the gap in the existing literature, which has predominantly focused on large metropolitan areas, by offering insights from a region characterized by limited infrastructure, weak institutional capacity, and uneven levels of digital literacy within society. This research not only assesses the effectiveness of ETLE in fostering traffic discipline but also identifies the social, technical, and institutional factors that either hinder or support its implementation process. By employing George C. Edward III's Policy Implementation Theory, this study seeks to explain how the variables of communication, resources, implementers' disposition, and bureaucratic structure interact to shape the success of adopting technology-based law enforcement systems.

By employing an empirical, data-driven approach and contextual analysis, this study is expected to contribute to the development of a smart law enforcement model that is both inclusive and adaptive to regional characteristics. The findings of this research are not only relevant for policymaking in Rangkasbitung but may also serve as a reference for other emerging cities in Indonesia in implementing technology-based law enforcement systems more effectively.

LITERATURE OVERVIEW

Implementation study is an analysis within policy studies that focuses on the process of carrying out a policy. In practice, policy implementation is a highly complex process and often carries political implications due to the intervention of various interests. According to (Daniel Mazmanian and Paul Sabatier (1983:139) in Agustino (2016:138):

"Implementation is the carrying out of a basic policy decision, usually incorporated in a statute but which can also take the form of important executive orders or court decisions. Normally, such a decision identifies the problem(s) to be addressed, explicitly states the objectives to be pursued, and outlines the principal methods for structuring or organizing the implementation process."

George C. Edwards III views policy implementation as a dynamic process in which multiple factors interact and influence the implementation of a given policy. These factors must be identified in order to understand how each affects the implementation process. To address this, Edwards begins by posing the question: what preconditions are necessary for successful policy implementation? Edwards III refers to his public policy implementation model as Direct and Indirect Impact on Implementation, identifying four critical variables that determine the success of policy implementation: (1) communication, (2) resources, (3) disposition, and (4) bureaucratic structure.

Figure

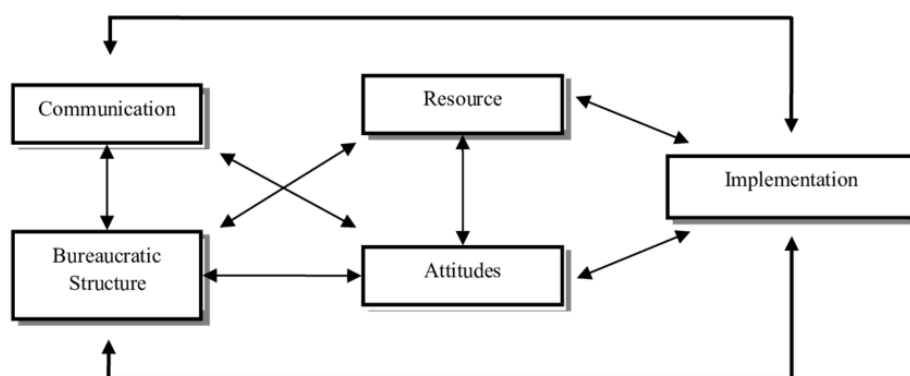


Figure 2. Implementation Approach Model George C. Edwards III.

The variables influencing the success of policy implementation, according to George C. Edwards III, are as follows:

Communication

Communication is crucial to achieving the objectives of public policy implementation. Effective implementation occurs when policymakers understand what actions need to be taken. Such understanding can only be achieved if communication functions properly so that every policy decision and its implementing regulations are transmitted to the appropriate personnel. Moreover, the communication of the policy must be accurate, clear, and consistent. Proper communication ensures that policymakers and implementers act consistently in applying policies within society. There are three key indicators for assessing the success of communication:

1. **Transmission**
Good communication transmission produces good implementation outcomes. Miscommunication frequently occurs during transmission because messages pass through several bureaucratic levels, causing distortion of the intended meaning along the way.
2. **Clarity**
The communication received by policy implementers must be clear and unambiguous. Lack of clarity does not always hinder implementation—some degree of flexibility may be required in certain contexts—but excessive ambiguity can lead to deviation from the original policy goals.
3. **Consistency**
Directives given during implementation must be consistent and clear. Frequent changes in directives may cause confusion among field implementers, thus hindering effective execution.

Resources

Resources represent another essential factor identified by Edwards III in policy implementation. The resource indicators consist of several elements:

1. **Staff**
Human resources are the main element in implementing policy. One of the most common causes of implementation failure is an insufficient number of staff or a lack of competent personnel. Merely increasing the number of staff is inadequate; it is essential to ensure that staff possess the necessary expertise and skills to perform the tasks required by the policy.
2. **Information**
Information plays two critical roles in policy implementation. First, implementers must understand how to carry out the policy. Second, they need data on compliance with laws and regulations to determine whether actors involved in implementation adhere to established rules.
3. **Authority**
Authority must generally be formal to ensure that directives can be executed. Authority serves as the legitimacy or formal power of implementers to perform their duties.
4. **Facilities**
Physical facilities are also crucial in policy implementation. Even when implementers have adequate staff, knowledge, and authority, implementation may still fail without sufficient supporting infrastructure or logistics.

Disposition

Disposition or attitude of policy implementers is the third key factor in the implementation process. According to George C. Edwards III, the following aspects are essential in understanding disposition:

1. Appointment of Bureaucrats
The attitudes of implementers can pose significant barriers to implementation when individuals fail to carry out the policies determined by higher authorities. Therefore, the appointment of policy implementers should prioritize individuals who demonstrate commitment and dedication to the established policy and public interest.
2. Incentives
Edwards suggests using incentive manipulation as a technique to address issues related to implementers' motivation. Since individuals tend to act in their own interest, policymakers can influence implementers' behavior by adjusting benefits or costs to encourage compliance and effective performance. This approach seeks to align personal or organizational interests with policy objectives.

Bureaucratic Structure

Even when sufficient resources and capable implementers are available, policy implementation may still fail due to weaknesses in bureaucratic structure. Complex policies require coordination among many actors; when the bureaucratic structure is not conducive, resources become inefficient, and implementation is hindered. As the executing body of a policy, the bureaucracy must support politically decided policies through effective coordination and collaboration.

RESEARCH METHODS

This study employs a qualitative method as it emphasizes an in-depth understanding of a social phenomenon based on the experiences, meanings, and contexts attached to the research subjects. As stated by Creswell & David Creswell (2014), the qualitative approach aims to explore and understand the meanings constructed by individuals or groups regarding a social or human problem. In this regard, data were collected through observation, interviews using purposive sampling techniques, and field documentation, and subsequently presented descriptively in accordance with the natural conditions of the research object. This perspective is also in line with the views of Moleong (2017) and Pasolong (2019), who assert that qualitative research is oriented toward uncovering meaning through the interaction between researchers and participants within specific social and cultural contexts. The primary focus of this study is to examine the implementation of the Electronic Traffic Law Enforcement (ETLE) policy in efforts to promote traffic security, safety, order, and flow (*Kamseltibcarlantas*) in Rangkasbitung, Lebak Regency. Through a qualitative approach, this research seeks to provide a comprehensive and holistic account of the dynamics, perceptions, and responses of both policymakers and the public toward the existence of the ETLE system. This approach enables the researcher to capture the complexities of policy within social realities that are deeply embedded with values, interpretations, and distinctive cultural challenges at the local level.

In the process of data analysis, this study adopts the Interactive Data Analysis Model of Miles and Huberman (1994), which consists of three key stages: data reduction, data display, and conclusion drawing/verification. This process is dynamic and iterative, allowing the researcher to continuously evaluate and reflect on the findings throughout the course of data collection. Consequently, the final outcomes of this study are not merely descriptive reports of data, but rather a synthesized and in-depth understanding of how ETLE is interpreted, adopted, and implemented within the practice of traffic policy in Rangkasbitung.

DISCUSSION

The implementation of Electronic Traffic Law Enforcement (ETLE) in Rangkasbitung reflects the spirit of modernization in traffic law enforcement, which had previously been dominated by conventional practices and direct interactions that were often vulnerable to irregularities. However, since this technological policy format has been introduced in an environment that is not yet fully prepared in terms of infrastructure, culture, and institutional capacity, its effectiveness must be critically questioned. Drawing upon George C. Edward III's (1980) Policy Implementation Theory, the success of a policy is determined by four essential elements: communication, resources, implementers' disposition, and bureaucratic structure. In the case of Rangkasbitung, these elements reveal systemic unpreparedness, rendering ETLE more symbolic in nature than a substantive solution.

Communication: Information Inequality within a Fragmented Social Sphere

From the perspective of George C. Edward III's (1980) policy implementation theory, communication constitutes an essential variable that serves as a prerequisite for the success of any public policy. Policy communication encompasses the clarity of messages, the consistency of instructions, and the scope and comprehensibility of information among both implementers and target groups. In the context of the

implementation of Electronic Traffic Law Enforcement (ETLE) in Rangkasbitung, this communicative dimension reveals symptoms of structural failure that are multidimensional in nature spanning social, cultural, and institutional aspects.

Inadequate and Non-Inclusive Public Outreach

The implementation of Electronic Traffic Law Enforcement (ETLE) was officially initiated on February 22, 2023, on Jalan Multatuli and subsequently relocated to Jalan Ahmad Yani on August 6, 2024, with the primary objective of enhancing the effectiveness of traffic surveillance at strategic points in Rangkasbitung. However, this reform initiative in law enforcement was not accompanied by a contextual and inclusive public communication strategy. The outreach conducted by law enforcement agencies tended to be top-down and formalistic, relying on press conferences and mainstream media coverage. Such a communication model is premised on the assumption of homogeneous access to information, which becomes problematic in the context of a developing city like Rangkasbitung, where disparities in legal and digital literacy persist across different social groups.

Field findings confirm the low level of public understanding regarding the operational mechanisms and legal consequences embedded in the ETLE system. An interview with a student of SMAN 3 Rangkasbitung, Dhika Surya Pratama (2025), revealed that some students still neglect the use of helmets for aesthetic reasons (Interview, 2024). Moreover, instances were identified in which individuals attempted to manipulate the ETLE system by covering license plates with school bags to avoid camera detection. This phenomenon illustrates the failure of policy communication to reach the normative dimension of public awareness, which should serve as the basis for internalizing the values of traffic safety and order. From the perspective of policy communication theory, this condition reflects the weakness of participatory communication approaches that ought to be a prerequisite for fostering collective awareness. Conversely, the approach adopted has opened avenues for social resistance and the reproduction of deviant behaviors, ultimately undermining the legitimacy of ETLE as an instrument of modernization in traffic law enforcement.

Structural Inequalities and Cultural Barriers to Information

The failure of communication in the implementation of Electronic Traffic Law Enforcement (ETLE) in Rangkasbitung cannot be attributed solely to the weakness of information dissemination, but rather is rooted in structural inequalities and systemic cultural barriers to information. These inequalities reveal a gap between technology-oriented policy design and the socio-cultural realities of the local community, which continue to be constrained by limited legal and digital literacy.

Sociologically, the absence of bridging communication namely, communicative mechanisms that connect authorities with the public through contextual approaches has generated biases in implementation. As noted by Allrifki Surya Wibawa, a resident of Rangkasbitung, the socialization of ETLE tends to be elitist and concentrated in urban spaces, thereby neglecting peripheral communities with limited access to information (Interview, 2024). This condition affirms Edward III's (1980) assertion that policy communication which fails to consider the socio-cultural characteristics of its recipients will result in policy distortion, wherein the meaning and objectives of the policy are reduced during the process of public reception.

Furthermore, Allrifki emphasized the necessity of collaboration between the Traffic Unit of the Lebak District Police and social actors such as *Bhabinkamtibmas*, who serve as street-level actors with cultural proximity to local communities (Interview, 2024). Such collaboration functions not only as an instrument of dissemination but also as a means of internalizing values through participatory and sustainable approaches. This perspective aligns with Lipsky's (1980) argument concerning the crucial role of street-level bureaucrats in building policy legitimacy through direct interaction with communities.

On the other hand, administrative barriers of a technocratic nature have further exacerbated communication inequalities. According to Aipda Edi Suwaryadi, many ETLE violation confirmation letters failed to reach offenders due to inaccurate data ranging from unregistered phone numbers to mismatched addresses. This barrier indicates that policy communication falters not only at the narrative level but also within its supporting systems. Such technocratic failures carry serious implications: first, the loss of the deterrent effect that ETLE is expected to produce; and second, the breakdown of the legal-social learning process that should be reinforced through the certainty of sanctions. Accordingly, the structural inequalities and cultural barriers to information in the implementation of ETLE in Rangkasbitung are twofold: on one hand, the absence of culturally grounded bridging communication renders information dissemination exclusive; on the other, administrative shortcomings underscore the weakness of data governance as a prerequisite for effective communication. Without improvements at both levels, ETLE risks becoming merely a symbol of digitalization that fails to substantively transform legal behavior within society.

Limitations of Structured and Systematic Communicative Strategies

The outreach efforts undertaken by the Traffic Unit of the Lebak District Police through educational and awareness activities, as noted by Ipda Adi Nugraha, have indeed targeted student groups at the junior and senior high school levels (Interview, 2024). However, from an institutional perspective, these activities remain sporadic and have yet to be formulated within a framework of public communication strategy that is structured, systematic, and long-term oriented. This condition illustrates the weakness of policy communication planning as an integral component of the broader process of public policy implementation.

From the perspective of Edward III's (1980) policy communication theory, the success of implementation is highly dependent on the clarity, consistency, and continuity of communication designed in a deliberate manner. The fact that legal education remains confined to the institutional space of formal education illustrates a failure to expand the reach of communication into more heterogeneous public arenas. As Mefalopulos (2008) argue, effective development communication must leverage community social spaces that hold high legitimacy in the eyes of the public, such as markets, places of worship, and village forums. The inability of the Lebak District Police Traffic Unit to penetrate these community spaces has constrained the process of internalizing legal values into the collective consciousness of society. Markets, mosques, and village halls are not merely sites of social interaction, but also arenas for the formation of public opinion and the reproduction of social norms. Neglecting these spaces means overlooking informal actors who possess strong social capital in shaping community behavior (Putnam et al., 1994).

In addition, the communication approach employed has tended to be linear and informative rather than dialogical and participatory. The absence of public participation in the formulation of policy narratives has caused the ETLE message to lose contextual relevance and to be difficult to embrace as a shared societal need. Habermas (1987) underscores the importance of deliberative communication, wherein public discourse serves as a medium for building normative consensus. Without such participatory mechanisms, ETLE will continue to be perceived as a coercive instrument of the state rather than as a tool of social protection. Thus, the limitations of ETLE's communicative strategies in Rangkasbitung are not merely technical, but also structural and epistemological. The failure to design public communication that is inclusive, community-based, and participatory hinders the transformation of legal norms into collective awareness. Accordingly, a paradigm shift is required from one-way, institution-centered communication toward dialogical, community-based communication that integrates formal authority with local social legitimacy.

The Absence of a *Kamseltibcarlantas* Narrative in Building Collective Awareness

Beyond the mere transmission of information, policy communication should also function as a tool for constructing social meaning. In the case of ETLE in Rangkasbitung, the absence of a strong public narrative regarding the importance of a traffic safety culture (*Kamseltibcarlantas*) serves as a key indicator of communicative weakness. The narrative of ETLE as a symbol of modernization and technology-based law enforcement has not been fully embraced by the public, who continue to perceive it more as a repressive instrument than as a mechanism of social protection.

The phenomenon of motorists without driving licenses using "back roads" and the prevalence of illegal street racing at night, *particularly* along Jalan Ahmad Yani, reflects the system's failure to instill legal discipline comprehensively. A communication approach that remains technocratic and insufficiently grounded in sociological realities has contributed to negative public perceptions of the policy while undermining its normative legitimacy. Thus, it can be concluded that the communicative dimension of ETLE implementation in Rangkasbitung has not yet achieved optimal performance strategically, technically, or culturally. Policy communication remains trapped in linear and elitist approaches, thereby failing to reach the diverse social conditions of the community. Accordingly, a transformation of communication strategies toward dialogical, participatory, and locally grounded models is required. Only then can ETLE function not merely as a surveillance technology but as a medium for transforming the legal culture of society in a developing city.

RESOURCES: THE IMBALANCE BETWEEN SYSTEMIC DEMANDS AND LOCAL CAPACITIES

Within the framework of George C. Edward III's (1980) policy implementation theory, resources constitute one of the key variables that significantly influence the success of a policy. Resources are not limited to physical aspects such as infrastructure and technology, but also include the availability of competent human resources as well as accurate and valid information to support the implementation process. The absence, insufficiency, or imbalance of these aspects may become critical barriers to achieving policy objectives. This condition is clearly evident in the

implementation of the Electronic Traffic Law Enforcement (ETLE) policy in Rangkasbitung, which demonstrates a tangible disparity between the complex demands of a digital system and the highly limited local capacities.

Limitations of Infrastructure and Spatial Coverage

The implementation of Electronic Traffic Law Enforcement (ETLE) in Rangkasbitung, which was initiated on February 22, 2023, along Jalan Multatuli and later relocated to Jalan Ahmad Yani on August 6, 2024, was normatively intended to optimize traffic surveillance at locations with the highest incidence of violations. However, when analyzed critically, the policy still reveals fundamental weaknesses in terms of infrastructure and spatial coverage. The spatial limitations of the ETLE system, which is installed only at a few strategic points, have created a significant enforcement gap and reduced the effectiveness of the policy as a technology-based law enforcement instrument.

The geographical disparity in law enforcement has direct implications for the uneven distribution of the deterrent effect on traffic violations. Areas beyond the reach of ETLE cameras effectively function as “law-free zones,” which in turn become arenas for subcultural violations, including illegal street racing at night. This phenomenon reflects what Bayley (1994) terms *selective enforcement*, wherein law enforcement is only effective within limited spaces, thereby indirectly legitimizing violations in unmonitored areas.

The limited spatial coverage of ETLE also illustrates the weakness of spatial evidence-based policy planning. Within the framework of Foucault (1995) surveillance theory, the effectiveness of modern surveillance technologies can only be achieved when monitoring is comprehensive, thereby fostering an awareness of the *panoptic gaze* the perception that every action is potentially under constant observation. When surveillance is only partial, the system inevitably loses its symbolic power in cultivating collective discipline (*disciplinary power*).

Furthermore, this phenomenon highlights the gap between policy design and implementation capacity. Rather than serving as an instrument of reform, ETLE in Rangkasbitung has become trapped in a pattern of *symbolic compliance* (Edelman, 1985), wherein the policy is deployed more as a symbol of modernization than as an effective law enforcement tool. This situation is exacerbated by the local government’s inability to integrate traffic spatial planning with the deployment of digital surveillance infrastructure. Consequently, the limitations in ETLE infrastructure and spatial coverage are not merely technical issues but represent structural failures in evidence-based spatial policy planning and traffic risk management. Future ETLE implementation reforms must adopt a spatial data-driven approach, incorporate risk mapping of violations, and ensure more equitable distribution of surveillance infrastructure to guarantee fairness in law enforcement and sustain the deterrent effect across the urban area.

Technological Capacity and Dependence on Static Approaches

According to Aipda Edi Suwaryadi, S.Sos., the implementation of Electronic Traffic Law Enforcement (ETLE) by the Lebak District Police Traffic Unit employs two approaches: a static approach, involving fixed cameras along Jalan Ahmad Yani, and a dynamic approach, utilizing mobile devices operated directly by field officers (Interview, 2024). However, empirically, both approaches have yet to yield optimal results. Limitations in supporting infrastructure and incomplete vehicle databases particularly invalid addresses and missing owner contact numbers have hindered the delivery of violation confirmation letters. Consequently, the effectiveness of ETLE as a technology-based law enforcement instrument has experienced significant erosion.

Analytically, the system’s inability to perform real-time data verification reflects weak integration between surveillance technology and administrative databases. The absence of a standardized and regularly updated vehicle information system indicates that ETLE in Rangkasbitung is more partial and reactive rather than integrative and predictive, as would be ideal for a digital law enforcement system. This aligns with the critique of Margetts & Dunleavy (2013), who emphasize that failures in digital transformation within government often stem from misalignment between technological infrastructure and the quality of administrative data.

The complete reliance on a central system for vehicle data validation also highlights the weak technological autonomy and administrative capacity at the local level. From the perspective of government technology decentralization theory (Janssen & van der Voort, 2016), technological autonomy at the regional level constitutes a critical prerequisite for the effective implementation of digital policies. When local authorities serve merely as passive implementers without the authority to update or validate data, the policy risks becoming trapped in a centralistic bureaucratic pattern that hinders timely responses to violations.

Furthermore, the reliance on a static approach through fixed cameras also limits the flexibility of the ETLE system in responding to spatially dynamic patterns of violations. The dynamic approach using mobile devices, which should serve as a key complement to reach high-risk areas, is rendered suboptimal due to limitations in technological support and database completeness. As a result, ETLE loses its adaptive deterrence function—the capacity to align law enforcement with continuously shifting violation patterns. Consequently, dependence on static approaches and weak data integration not only diminishes ETLE’s effectiveness as a law enforcement instrument but also reveals institutional unpreparedness in establishing a sustainable technology-based traffic surveillance system. Future

reforms require strengthening the integration of vehicle information systems, decentralizing data validation authority at the local level, and developing dynamic technologies that can adapt to traffic mobility patterns.

Limited Human Resource Capacity and Operational Burden

One crucial determinant that hampers the effectiveness of Electronic Traffic Law Enforcement (ETLE) in Rangkasbitung is the limited human resource (HR) capacity to manage a digital law enforcement system. Operationally, field officers tend not to receive comprehensive technical training regarding the operation of ETLE devices and data management. As a result, system implementation still heavily relies on the physical presence of officers rather than on technological automation and integration, thereby diminishing ETLE's innovative value as a modern law enforcement instrument. This condition also underscores the gap between policy modernization and the readiness of implementers at the local level, as critiqued by Pressman & Wildavsky (1973) within the framework of policy implementation theory, where failures often stem from weak implementer competence relative to the substance of the policy.

The phenomenon of ETLE system manipulation by students—such as covering vehicle license plates, as reported by Dhika Surya Pratama—empirically illustrates the supervision gap in the field due to the limited human resources capable of conducting consistent, real-time technology-based patrols (Interview, 2024). Such control vacuums create spaces for the public, particularly youth groups, to engage in symbolic resistance against the law, ultimately undermining the legitimacy and credibility of ETLE as a trusted law enforcement instrument. From a theoretical perspective, the limited technical competence of officers represents a form of institutional failure to adapt to the demands of digital governance. Janssen & van der Voort (2016) emphasize that the success of digital transformation in the public sector is highly dependent on local actors' capacity to understand, operate, and maintain technology-based systems. When human resources are not intensively engaged in technology knowledge transfer and the strengthening of adaptive capacity, digital policies risk becoming mere modernization ceremonies without substantive impact. Furthermore, the high operational burden on officers, resulting from a combination of manual and digital tasks, generates a work-priority dilemma.

Officers are predominantly allocated to direct field supervision, which inherently contradicts the primary objective of ETLE to reduce reliance on face-to-face interactions and to promote law enforcement efficiency. This situation creates an implementation paradox: technological modernization, rather than alleviating operational burdens, actually exacerbates them due to the absence of human resource management strategies aligned with the technological design. Thus, the limited human resource capacity and the high operational burden are not merely technical factors but also structural impediments to ETLE's success. Implementation reforms require substantial investment in digital-based technical training, the augmentation of competent human resources, and the restructuring of workloads so that ETLE can function as an autonomous, credible, and sustainable law enforcement system.

The Imbalance between Vehicle Growth and Surveillance Capacity

The growth of motor vehicles in Lebak Regency has shown a significant trend over the past decade. According to the Central Bureau of Statistics (2023), two-wheeled vehicles dominate, exceeding 250,941 units in 2022, followed by a relatively consistent increase in four-wheeled vehicles and trucks year by year. However, this acceleration in vehicle growth has not been accompanied by a corresponding enhancement in technology-based traffic surveillance capacity, particularly through the Electronic Traffic Law Enforcement (ETLE) system.

Table 1. Number and Types of Motor Vehicles in Lebak Regency.

Kabupaten	Jumlah Kendaraan Bermotor dan Jenis Kendaraan di Kabupaten Lebak (Unit)											
	Mobil Penumpang			Bus			Truk			Sepeda Motor		
	2022	2021	2020	2022	2021	2020	2022	2021	2020	2022	2021	2020
Lebak	20.926	19.404	18.219	313	321	18	10.166	9.828	9.564	250.941	253.026	256.689

Source: Central Bureau of Statistics, 2023.

The disparity between vehicle volume and the coverage of ETLE surveillance has created a structural imbalance in traffic law enforcement. The ETLE system in Rangkasbitung is installed only at certain locations, leaving the majority of vehicles operating outside the technological monitoring radius. This condition opens opportunities for undetected-violations and directly reduces the policy's effectiveness in curbing infractions. This aligns with the findings of May & Winter (2007), who assert that a mismatch between administrative capacity and the complexity of policy issues can potentially decrease public compliance with the policy.

Analytically, this imbalance is not merely technical but also systemic. The rapid growth of motor vehicles without adaptive planning for surveillance technology reflects weak long-term policy foresight. Within the context of policy implementation theory, this condition represents an *implementation gap*—the disparity between policy design and

operational reality—which hinders the comprehensive achievement of policy objectives. Furthermore, the uneven distribution of traffic surveillance also generates distortions in the fairness of law enforcement.

Areas equipped with ETLE tend to enforce traffic regulations more strictly, whereas regions without technological surveillance become “legal gray zones,” where traffic violations occur extensively without sanctions. This not only weakens the deterrent effect of the ETLE policy but also risks undermining public trust in the consistency and credibility of traffic law enforcement in Lebak Regency. Therefore, addressing this imbalance requires strategies to strengthen adaptive surveillance capacity, including the expansion of ETLE installation points, real-time integration of traffic data, and synergy between technological monitoring and manual patrols. Without such measures, ETLE risks becoming a symbolic policy that fails to produce substantive impacts on traffic behavior.

Implications for Policy Implementation Effectiveness

The imbalance between system demands and local capacity in the implementation of Electronic Traffic Law Enforcement (ETLE) in Rangkasbitung reflects a policy bias that tends to be top-down. While the policy was designed as part of the national agenda for traffic law enforcement, its formulation insufficiently considered the social, geographical, and institutional capacities of the local context. The lack of adaptation to regional characteristics has serious consequences for policy implementation effectiveness, particularly in ensuring equitable surveillance and law enforcement.

According to George C. Edward III’s implementation theory (1980), insufficient resources constitute a primary determinant that can lead to policy implementation failure. In the context of ETLE in Rangkasbitung, resource limitations are evident in several aspects, including inadequate surveillance technology infrastructure, inaccurate vehicle data, and insufficient technical competence among implementing officers. This condition results in partial policy implementation, as the ETLE system can operate optimally only at specific locations equipped with monitoring devices, while the majority of other areas remain law enforcement “gray zones,” where traffic violations are inadequately detected.

From the perspective of adaptive implementation theory, these limitations indicate the policy’s inability to transform responsively in accordance with local dynamics. An overly centralistic approach creates an *implementation gap*, namely the disparity between normative policy design and empirical realities at the regional level. If this condition persists, ETLE in Rangkasbitung risks becoming merely a *symbolic policy* (Edelman, 1985), emphasizing the image of technologically modernized law enforcement rather than producing substantive changes in traffic behavior.

To bridge this gap, strategic planning grounded in adaptive and participatory policy principles is required. This strategy includes strengthening technological surveillance infrastructure through the expansion of ETLE installation points and real-time system integration, enhancing the technical capacity of field officers through intensive training and digital competency certification, as well as comprehensive updates and synchronization of motor vehicle data, including validation of addresses and owners’ contact numbers to ensure more accurate law enforcement. Furthermore, collaboration with local social actors, such as Bhabinkamtibmas officers, community organizations, and educational institutions, is also a crucial step to expand the reach of participatory traffic law education.

Without comprehensive and contextually grounded policy reforms, ETLE will struggle to achieve long-term effectiveness in fostering sustainable traffic law awareness in Lebak Regency, ultimately functioning merely as a symbol of technological modernization without generating significant changes in public behavior.

IMPLEMENTERS’ DISPOSITION: RESISTANCE TO CHANGE AS AN INTANGIBLE BARRIER

In the public policy implementation theory developed by George C. Edward III (1980), the variable of implementer disposition constitutes a key component influencing policy execution effectiveness. Disposition encompasses the attitudes, perceptions, and commitment of implementers toward the policy being enacted. Even when communication is effective and resources are available, if policy implementers do not demonstrate strong ideological or psychological support, the policy tends to fail at the implementation stage (Edward III, 1980; Sabatier & Mazmanian, 1980).

Bureaucratic Resistance to System Automation

The implementation of Electronic Traffic Law Enforcement (ETLE) in Rangkasbitung represents a paradigm shift in law enforcement from a conventional system based on direct interaction to a digital system with automation mechanisms and electronic recording. This transformation fundamentally reduces officers’ discretionary space and closes opportunities for informal settlements, which have historically been inherent in traffic bureaucracy practices in many regions. Dwiyanto (2014) describes this phenomenon as a form of “patrimonial bureaucratic culture,”

where personal relationships and non-formal resolutions are often perceived as more effective than formal procedures.

This fundamental change has generated both psychological and structural resistance among lower-level policy implementers. Based on field observations and interviews with officers from the Lebak Police Traffic Unit as well as students in Rangkasbitung (Interview, 2025), this resistance stems from two main factors. First, the loss of discretionary control and authority, which had previously served as a source of informal legitimacy for officers in the eyes of the public. Second, the reduction of non-formal incentives previously obtained through direct interactions, creating discomfort with a fully digital work pattern. Furthermore, ETLE is perceived as a system that is “too rigid” and insufficiently responsive to social dynamics. The absence of negotiation space in addressing violations fosters the impression that the policy is purely administrative and not yet fully understood as an instrument for reforming traffic behavior. Within the framework of bureaucratic resistance to technological innovation (Lipsky, 1980; Sabatier & Mazmanian, 1980), this condition indicates that street-level bureaucrats tend to implement policies minimally, merely fulfilling formal obligations without substantive commitment to policy objectives.

Such resistance becomes a key factor hindering the effectiveness of ETLE as an instrument of law enforcement modernization. Therefore, a change management strategy is required, encompassing several essential measures. First, the integration of technology-based training with the dissemination of bureaucratic reform values, so that officers understand ETLE not merely as a tool but as part of public service modernization. Second, the provision of digital performance-based incentives to replace lost non-formal incentives while simultaneously enhancing the motivation of frontline bureaucrats. Third, the creation of participatory internal communication spaces to ensure officers feel involved in system improvements rather than acting as passive implementers. Without such adaptive strategies, ETLE risks being trapped in procedural formalism, projecting an image of modernization while failing to produce substantive changes in traffic behavior in Rangkasbitung.

Implementation as Administrative Compliance, Not Transformational Change

The phenomenon of policy implementation that is primarily procedural, without a corresponding orientation toward substantive change, is a characteristic of bureaucracies that have not yet fully adapted to innovation (Lipsky, 1980). In the context of Electronic Traffic Law Enforcement (ETLE) implementation in Rangkasbitung, this pattern is evident. Based on field documentation and interviews (Figure 4.2; Interview, 2025), monitoring and enforcement are conducted intensively only during specific hours, particularly around 7:00 a.m.

Outside of these time frames, traffic law enforcement activities are barely visible, whether in the form of active patrols or rapid responses to violations occurring beyond the reach of ETLE cameras.



Figure 3. Rider Not Wearing a Helmet While Passing Through ETLE.

Source: Researcher, 2025.

This condition indicates a weak internalization of policy values at the implementer level. Officers do not execute the policy out of an awareness of the importance of traffic order as a public necessity, but merely due to structural compliance with superior directives. This demonstrates that ETLE, which should serve as an instrument for

modernizing law enforcement and enhancing public legal awareness, is instead reduced to mere administrative obligation.

Within the framework of street-level bureaucracy theory (Lipsky, 1980), this phenomenon illustrates the tendency of frontline officers to implement policies minimally, merely to fulfill formal procedures without commitment to the normative objectives of the policy. Consequently, the transformation anticipated through the digitalization of law enforcement is not achieved, and ETLE in Rangkasbitung becomes trapped in implementation stagnation—functioning more as a symbol of modernization rather than as an instrument for substantive changes in traffic behavior.

Misalignment Between Organizational Culture and ETLE Values

The implementation of Electronic Traffic Law Enforcement (ETLE) fundamentally carries a mission of reforming law enforcement through the application of principles such as transparency, accountability, and rule-based enforcement. However, these modern values often clash with the characteristics of the local bureaucratic culture, which remain dominated by patrimonial, transactional patterns and personal relationship-oriented practices. Hofstede et al. (2010) emphasizes that the success of organizational value change is largely determined by the alignment between newly introduced values and the core values already ingrained among organizational members. This misalignment, in the context of ETLE, constitutes a source of cultural resistance that hampers the effectiveness of policy implementation.

In Rangkasbitung, the organizational adaptation process to ETLE values appears to remain technocratic and procedurally oriented. Based on interviews with personnel from the Lebak Police Traffic Unit, the training provided emphasized technical-operational aspects, such as image capture procedures, data validation, and the electronic ticketing delivery mechanism (Interview, 2025). The educative and normative dimensions—which are intended to foster ethical awareness, integrity, and a substantive understanding of ETLE as an instrument of law enforcement reform—are almost entirely neglected. As a result, officers tend to perceive ETLE merely as an administrative obligation rather than as part of a systemic transformation agenda in traffic law enforcement.

This condition aligns with the findings of Pollitt & Bouckaert (2004), who assert that bureaucratic reform will not succeed if it focuses solely on procedural changes without accompanying value reorientation. When the value dimension is neglected, policy meaning is reduced to mere administrative routine, losing its transformational character. Thus, the misalignment between organizational culture and ETLE values constitutes not merely a technical obstacle, but also a structural barrier to achieving sustainable law enforcement modernization in Rangkasbitung.

The Need for Visionary and Reformative Leadership

To address the obstacles posed by implementer disposition, public leadership that is visionary, participatory, and value-oriented (transformational leadership) is required. Such leadership not only provides directives but also cultivates a shared meaning regarding the public policy being implemented. In the context of ETLE, the leadership of the Traffic Unit must be able to construct a strategic narrative that positions the system as part of police service reform and the enhancement of public safety. Leaders capable of driving transformation do not merely provide technical training; they also facilitate spaces for internal dialogue and moral reflection among officers. This approach aligns with Edward III's principle that implementer disposition cannot be imposed structurally, but must be nurtured through internalization and ownership of values (Edward III, 1980; Van Meter & Van Horn, 1975). Therefore, the challenge of implementer disposition in ETLE implementation in Rangkasbitung is not merely a technical or administrative issue, but involves a paradigm shift and institutional value transformation. Without such value transformation, a policy intended as an instrument of modernization risks becoming a procedural project with minimal substantive impact.

BUREAUCRATIC STRUCTURE: INSTITUTIONAL FRAGMENTATION UNDERMINING COORDINATION

From the perspective of public policy implementation theory developed by George C. Edward III (1980), bureaucratic structure is a determinant variable in the success or failure of policy implementation. This structure encompasses institutional apparatus, coordination mechanisms, allocation of authority, and administrative procedures that underpin policy execution at technical and operational levels. When the bureaucratic structure is rigid, unresponsive, and fragmented, the effectiveness of public policy is hindered, even when communication, resources, and implementer disposition are adequately in place.

Institutional Fragmentation and Weak Interoperability

The implementation of Electronic Traffic Law Enforcement (ETLE) in Rangkasbitung City still reflects significant institutional fragmentation, which undermines the effectiveness of digital traffic law enforcement. Coordination among the involved agencies, such as the Lebak Police Traffic Unit, the Transportation Office, and the Regional Government, occurs in a partial manner and tends to follow their respective administrative silos. Each institution primarily focuses on its core functions without making substantial efforts to establish an integrated operational system. This condition hampers real-time information exchange, slows down the violation confirmation process, and reduces the accuracy of law enforcement.

This coordination limitation is evident in the absence of an integrated information system capable of linking motor vehicle data, population records, and vehicle owners' contact information. According to Aipda Edi Suwaryadi from the Lebak Police Traffic Unit, the unit still faces difficulties in distributing violation notification letters due to numerous vehicle records being invalid or not connected to population data (Interview, 2024). Consequently, compliance rates among violators remain low, as many notification letters fail to reach the vehicle owners. This data disconnect highlights the weak interoperability between agencies, which should serve as a fundamental foundation for technology-based law enforcement.

In the context of public institutions, this phenomenon aligns with May & Winter (2007) findings, which suggest that unintegrated bureaucracies give rise to policy disarticulation, where policies intended to be collaborative are instead implemented in a fragmented manner, losing their transformational impetus. In Rangkasbitung, the weak inter-agency integration has resulted in ETLE functioning merely as a technical and procedural law enforcement tool, rather than as an instrument of systemic reform in traffic management.

Furthermore, the absence of routine and participatory inter-agency coordination forums exacerbates this situation. The lack of open communication mechanisms causes the Traffic Unit of the Lebak Police Resort to often operate unilaterally, without optimally involving the Transportation Agency or the Regional Government in the planning or evaluation of ETLE implementation. The success of this system requires cross-functional synergy, such as in the provision of supporting infrastructure, updating vehicle registration data, and public outreach involving multiple actors. This condition indicates that the effectiveness of ETLE is determined not only by the availability of technology but also by the institutional capacity to establish solid operational integration. Weak system interoperability and minimal inter-agency collaboration are therefore key factors limiting the effectiveness of digital traffic law enforcement in Rangkasbitung.

Resistensi terhadap Transformasi Digital dalam Birokrasi

The implementation of Electronic Traffic Law Enforcement (ETLE) in Rangkasbitung City reveals serious challenges stemming from bureaucratic resistance to digital transformation. This resistance is not only related to technological limitations but also involves an institutional culture still oriented toward traditional and hierarchical work patterns. As an electronic law enforcement innovation, ETLE demands fundamental changes in bureaucratic logic: shifting from merely following hierarchical instructions to a data-driven, responsive, collaborative, and socially adaptive approach (Dunleavy et al., 2006). However, most local bureaucratic personnel still perceive ETLE as an additional administrative burden rather than a modern public service innovation. This mindset reflects the organizational unpreparedness of the bureaucracy to adapt to the digital paradigm. On one hand, ETLE technology is expected to create transparency and accountability; on the other hand, officials tend to implement the policy minimally, limited only to procedural compliance.

Interviews with Allrifki Surya Wibawa, a resident of Rangkasbitung (Interview, 2024), reinforce these findings. He noted that weak inter-agency coordination results in uneven public outreach, while enforcement procedures are carried out inconsistently. This indicates a decoupling between the normative goals of the policy and its implementation practices, as described by Meyer and Rowan (1977), where bureaucracy implements policies symbolically to maintain formal legitimacy without genuine commitment to substantive objectives. This resistance is also related to psychological and structural aspects within the bureaucracy. Officials accustomed to patrimonial work patterns and informal social relations perceive a loss of discretionary space and nonformal incentives that have long been part of traffic bureaucratic culture. The shift to a digital-based system is considered "too rigid" and reduces flexibility in field decision-making. Consequently, the implementation of ETLE is more oriented toward administrative compliance rather than the substantive transformation of traffic behavior.

From the perspective of bureaucratic innovation theory, this condition reflects the low adaptive capacity of public organizations, where digital innovations such as ETLE risk being trapped in procedural formalism if not accompanied by institutional value change. Therefore, digital transformation in traffic law enforcement cannot rely solely on the provision of technology; it requires efforts in organizational culture reform, value-based training, and the strengthening of visionary leadership so that digital policies are genuinely internalized as part of public service modernization, rather than merely a short-term administrative project.

Low Participation of Local Actors in the Implementation Structure

The low involvement of local actors in the implementation of Electronic Traffic Law Enforcement (ETLE) in Rangkasbitung represents a structural factor that hinders policy effectiveness. The centralistic and exclusive bureaucratic structure results in the design and execution of ETLE being predominantly dominated by formal authorities, without adequately integrating the strategic roles of local actors such as schools, Bhabinkamtibmas officers, community leaders, and civil society organizations. From the perspective of community-based public policy, multi-stakeholder participation is a crucial prerequisite for building social legitimacy, expanding the reach of public education, and ensuring policy sustainability (Ansell & Gash, 2008).

The lack of synergy between formal and non-formal actors directly impacts public legal awareness and compliance, particularly among the younger generation. This is corroborated by Dhika Surya Pratama, a student at SMAN 3 Rangkasbitung (Interview, 2024), who acknowledged that many students deliberately manipulate the ETLE system, for instance, by covering vehicle license plates or using alternative routes (“jalan tikus”) that are not monitored by cameras. This phenomenon indicates that without participatory education involving educational institutions and local communities, ETLE is perceived merely as a repressive enforcement tool rather than a collective effort to promote traffic order.

From the perspective of collaborative governance, the limited involvement of local actors indicates that the principles of participation, inclusivity, and shared responsibility—fundamental pillars for successful cross-actor collaboration—have yet to be implemented (Emerson et al., 2012). Local bureaucracy tends to maintain hierarchical work patterns, preventing the policy from evolving into a shared agenda among government, community, and educational institutions. The low level of community engagement also impedes the internalization of ETLE values—such as transparency, accountability, and traffic safety—into societal norms. Structurally, the minimal participation of local actors reflects the absence of institutional mechanisms that systematically accommodate community roles in policy implementation. There are no dialogue forums, community-based outreach programs, or strategic partnerships with schools and civil society organizations to foster shared ownership of ETLE. Without reforms in coordination patterns and a more inclusive institutional design, ETLE in Rangkasbitung risks remaining a top-down, elitist project with limited impact on substantive changes in traffic behavior.

Recommendations for Institutional Reform

The effectiveness of Electronic Traffic Law Enforcement (ETLE) implementation in Rangkasbitung City heavily depends on structural and cultural institutional reforms. There are two crucial aspects that must be urgently addressed to overcome the various implementation barriers.

First, the development of an integrated cross-agency information system is an urgent necessity. The lack of interoperability among the Lebak District Traffic Unit, the Department of Transportation, and other relevant agencies has hindered the distribution of electronic traffic fines and the real-time tracking of vehicle data. The integrated information system should be designed to enable the rapid and accurate exchange of population, vehicle, and owner contact data, thereby making enforcement processes more effective and transparent. This effort requires strong political commitment as well as technological investment from the local government to ensure that digital infrastructure can support data-driven law enforcement.

Second, a transformation of bureaucratic culture is required through the continuous enhancement of human resource (HR) capacity. Training should not only focus on technical and operational aspects but also on strengthening collaborative values, integrity, and data-driven public service orientation. Implementing officers need to gain a substantive understanding that ETLE is not merely an instrument for administrative enforcement but an integral part of public service modernization and efforts to improve traffic safety. This approach aligns with the principles of New Public Management (NPM), which emphasize the importance of efficiency, transparency, innovation, and cross-sectoral collaboration in public service delivery (HOOD, 1991).

The challenges in implementing ETLE in Rangkasbitung—including institutional fragmentation, resistance to digital systems, and limited involvement of local actors—indicate that conventional hierarchical bureaucracy is no longer adequate for managing modern technology-based policies. Therefore, institutional reform must focus on creating an adaptive bureaucratic structure capable of accommodating innovation, fostering community participation, and strengthening inter-agency coordination. Only through comprehensive and targeted institutional reform can ETLE function optimally as an electronic traffic law enforcement instrument that not only enhances deterrent effects but also sustainably builds legal awareness and traffic order in Rangkasbitung.

CRITICAL SYNTHESIS: ETLE BETWEEN TECHNOLOGICAL ILLUSION AND SOCIAL REALITY

The implementation of Electronic Traffic Law Enforcement (ETLE) in Rangkasbitung reflects an effort to modernize traffic law enforcement through digital technology. Normatively, this policy is designed to enhance transparency, accountability, and efficiency, while minimizing informal practices in enforcement processes. However, empirical data indicate that ETLE in Rangkasbitung functions more as a symbol of modernity rather than as a tool for systemic transformation integrated into the local social, cultural, and institutional structures.

ETLE as a Representation of Symbolic Reform

The implementation of Electronic Traffic Law Enforcement (ETLE) in Rangkasbitung can be analyzed within the framework of symbolic reform, as articulated by Edelman (1985) and Gusfield (1984), who argue that many public policies function more as instruments of political image-making and institutional legitimacy than as mechanisms for substantive change. In this context, ETLE primarily represents a response to demands for the technological modernization of traffic law enforcement, rather than a fundamental effort to transform public traffic behavior or the operational practices of implementing bureaucracies.



Figure 4. Rider Not Wearing a Helmet While Passing Through ETLE.

Source: Researcher, 2024.

Empirically, the presence of ETLE cameras conveys an impression of modernized traffic surveillance; however, it has yet to produce significant behavioral changes among road users. Field findings indicate that traffic violations continue to occur extensively, particularly among students. Many consciously disregard safety regulations, such as the mandatory use of helmets for aesthetic reasons, and even manipulate the system by covering vehicle license plates or using alternative routes not monitored by the cameras (Interview, 2024). These practices demonstrate both the low level of legal awareness among the public and the weakened deterrent effect that ETLE is intended to achieve.

On the other hand, the police, as implementing actors, also tend to operate the ETLE system purely procedurally and administratively. Law enforcement is treated merely as a bureaucratic routine to fulfill structural obligations rather than as part of a broader project of value reform and traffic culture transformation. This low level of internalization aligns with what Meyer et al. (2023), within the framework of new institutionalism, describe as decoupling—a condition in which organizations adopt symbols of modernity to gain public legitimacy but fail to integrate reform values into everyday institutional practices. This situation indicates that ETLE in Rangkasbitung remains at the stage of symbolic reform, emphasizing visual legitimacy and procedural formality rather than producing substantive transformation. Without participatory public communication strategies, the enhancement of legal awareness among the public, and the internalization of reform values within the police bureaucracy, ETLE risks becoming a case of pseudo-modernization, where technology exists merely as a symbol of progress rather than as a means of structural and cultural change in traffic law enforcement.

Social and Cultural Unpreparedness in Technology Acceptance

The success of technology-based policy implementation, such as Electronic Traffic Law Enforcement (ETLE), is highly dependent on the social and cultural readiness of the target community. According to the Technology Acceptance Model (TAM) proposed by Davis (1989), the adoption of technology by users is influenced by two key

factors: perceived usefulness and perceived ease of use. In the context of ETLE in Rangkasbitung, these factors have not been optimally developed. Field findings indicate that many traffic violators do not fully understand the operational mechanisms of ETLE, including the violation detection process, confirmation system, and fine payment procedures. Moreover, a portion of the public does not perceive ETLE as a credible or effective system in producing a deterrent effect, resulting in compliance that is situational and opportunistic. This situation reflects low perceived usefulness and perceived credibility of ETLE in the eyes of the public.

In addition, the unpreparedness of bureaucratic culture constitutes a significant barrier. ETLE, as a rule-based enforcement instrument, demands high levels of professionalism, transparency, and accountability. However, the local bureaucracy still tends to maintain traditional work patterns characterized by patrimonial and transactional practices, resulting in the suboptimal internalization of the new values promoted by ETLE. This phenomenon aligns with Ogburn's (1922) concept of cultural lag, where technological development outpaces the adaptation of social and bureaucratic cultural values. Such social and cultural unpreparedness not only lowers public acceptance of the technology but also undermines the legitimacy of ETLE as a modernization tool for law enforcement. Without intensive efforts to build technological literacy among the public and to implement value reform within the bureaucracy, ETLE in Rangkasbitung risks remaining a procedurally operational innovation, failing to produce substantial changes in traffic behavior or overall law enforcement governance.

Imbalance Between Digital Instruments and Governance Infrastructure

The effectiveness of Electronic Traffic Law Enforcement (ETLE) as a digital-based law enforcement instrument is highly dependent on the readiness of the supporting governance infrastructure. In the context of Rangkasbitung, ETLE implementation still faces significant structural challenges. One of the main issues is the misalignment of inter-agency data, particularly between population records and motor vehicle registries. This misalignment results in many violation confirmation notices failing to reach recipients due to incorrect addresses, outdated vehicle ownership information, or unrecorded owner contact numbers. Aipda Edi Suwaryadi emphasized that these data inaccuracies constitute a major obstacle to ensuring timely and accurate follow-up on traffic violations (Interview, 2024).

This phenomenon reflects a form of governance failure (May & Winter, 2007) wherein policy innovations are implemented without adequate institutional support. This weakness indicates that ETLE has not yet functioned as a self-enforcing system but remains dependent on manual intervention by officers, including in data verification and direct enforcement. Such reliance on manual mechanisms creates potential for inconsistencies in law enforcement, thereby undermining ETLE's primary advantages as a digital instrument designed to promote efficiency, transparency, and objectivity.

Moreover, the limited operational hours of ETLE exacerbate the mismatch between the digital enforcement instrument and the governance infrastructure. Camera-based surveillance is conducted only during specific hours, while at other times, law enforcement is suboptimal. This imbalance weakens the deterrent effect on violators and creates the perception that ETLE functions merely symbolically. Thus, as long as institutional unpreparedness and infrastructural limitations remain unaddressed, the primary objectives of digitalizing law enforcement in Rangkasbitung cannot be achieved substantively.

Transformation-Based Evaluation, Rather than Output-Focused

The evaluation of the Electronic Traffic Law Enforcement (ETLE) policy in Rangkasbitung has so far been dominated by an administrative orientation, focusing primarily on quantitative outputs, such as the number of violations captured by cameras and the number of electronic tickets issued to offenders. This type of evaluation is superficial because it only assesses procedural performance without considering the substantive impact of the policy. Patton (2008), through the concept of Utilization-Focused Evaluation, emphasizes that public policy evaluation should be directed toward achieving social transformation—namely, the extent to which a policy can change community behavior, enhance legal awareness, and improve bureaucratic integrity as the policy implementer.

In the context of ETLE in Rangkasbitung, there is little evidence of reflective and adaptive policy learning. Implementing officers continue to apply a one-size-fits-all approach, enforcing uniform procedures without accounting for the region's distinctive social, economic, and cultural variations. Rangkasbitung faces specific challenges, including low legal literacy, limited access to technology among marginalized communities, and the persistence of patrimonial traffic culture. Without policy-oriented learning, ETLE risks remaining merely an administrative project—successful in terms of numbers but failing to effect significant behavioral change at the community level. Therefore, transformation-based evaluation must encompass dimensions such as changes in traffic behavior, enhancement of legal legitimacy, and the internalization of accountability values within the bureaucracy. Only through this approach can ETLE function as a law enforcement reform instrument that is not merely technologically modern but substantively effective in promoting sustainable traffic order.

Direction of Reform: Positioning ETLE as a Digital Justice Initiative

In order for Electronic Traffic Law Enforcement (ETLE) to move beyond its status as a mere symbol of pseudo-digitalization and genuinely function as an instrument of substantive legal reform, the policy must be oriented toward the paradigm of smart governance, as proposed by Meijer & Bolívar (2016). Smart governance emphasizes the integration of technological innovation, active public engagement, and the strengthening of institutional capacity as a cohesive systemic approach. ETLE should be positioned not merely as a tool for repressive enforcement, but also as a medium for public education and the reconstruction of legal values within the social sphere.

Within the framework of a digital justice project, ETLE should ideally serve as a mechanism that ensures fairness, efficiency, and public participation in traffic law enforcement. To achieve this, future reforms need to accommodate four strategic agendas. First, value- and ethics-based training for policy implementers to ensure the internalization of principles such as transparency, accountability, and justice-oriented public service. Second, the enhancement of public communication through outreach that is adaptive to local socio-cultural characteristics, enabling the community not only to understand ETLE procedures but also to internalize legal awareness as a collective necessity. Third, the development and integration of cross-sectoral information systems, facilitating effective coordination among the police, the Transportation Agency, and local government through real-time data exchange. Fourth, active involvement of civil society and local communities in policy evaluation, monitoring, and feedback processes, thereby fostering social legitimacy and a sense of ownership over the system.

By adopting this approach, ETLE has the potential to become more than merely a technological modernization project. It can evolve into a contextual digital justice instrument—a law enforcement system that is not only administratively efficient but also fair, participatory, and aligned with the social values of the local community. This approach also represents an initial step toward broader institutional transformation, paving the way for sustainable, technology-based traffic governance.

CONCLUSIONS

The implementation of Electronic Traffic Law Enforcement (ETLE) in Rangkasbitung represents a technological modernization of traffic law enforcement aimed at enhancing transparency, accountability, and road safety. However, its execution continues to face numerous structural, social, cultural, and institutional challenges. First, communication between law enforcement officers and the public remains ineffective. Information about ETLE has yet to reach all segments of society, particularly in peripheral areas with low legal and digital literacy. As a result, many drivers do not fully understand the ETLE mechanism and do not perceive it as an important or credible system. Second, technological and human resource limitations pose serious obstacles. Vehicle data are often inaccurate and not linked to population records, causing many violation notices to fail in reaching the intended recipients. Moreover, some officers have not received adequate training to operate the technology optimally. Third, bureaucratic resistance further undermines policy effectiveness. Some personnel implement ETLE merely as an administrative obligation rather than as part of efforts to change behavior and modernize public service delivery. Fragmented bureaucratic structures and insufficient inter-agency coordination also weaken implementation, compounded by the minimal involvement of local actors such as schools, Bhabinkamtibmas, and civil society organizations.

Overall, ETLE in Rangkasbitung currently functions more as a symbol of modernization than as an instrument of substantive change. To enhance its effectiveness, institutional reforms are necessary, including the integration of inter-agency information systems, improved training and value awareness for officers, and public education programs that actively engage the community. Policy evaluation should also focus on behavioral change among the public, rather than solely on the number of recorded violations. If these measures are implemented consistently, ETLE has the potential to evolve into a traffic law enforcement system that is not only technology-based but also equitable, participatory, and capable of fostering sustainable traffic order.

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