Jurnal
ILMU KEPOLISIAN
ISSN : 2620-5025
E-ISSN : 2621-8410

Vol. 18, No. 2, 2024

Policy Implementation of The Electronic Traffic Law Enforcement in The Greater Jakarta Metro Area Police Jurisdiction

Submitted 20 July 2024, Revised 23 July 2024, Accepted 29 July 2024, Published 14 August 2024

Louis Bisma Wicaksana Praharsa[1]*, Muh Azis Muslim[2], Reyhan Kusuma[3], Azel Arisandi [4]

[1,2]Faculty of Administrative Science, University of Indonesia, Depok, Indonesia
[3]Central Java Regional Police, Pati, Indonesia
[4]Jambi Regional Police, Indonesia
E-mail Corresponding Author: *louis.bisma@ui.ac.id

DOI : https://doi.org/10.35879/jik.v18i2.465

Abstract

The aim of this study is to investigate the implementation of the ETLE policy in the Greater Jakarta Metro Area Police Jurisdiction. Data has shown that there have been fluctuations in the trend of traffic violations in the Greater Jakarta Metro Area Police Jurisdiction from 2018-2023. This research examines further the implementation of the Electronic Traffic Law Enforcement (ETLE) policy to realize an orderly traffic area in the Greater Jakarta Metro Area Police Jurisdiction. Researchers use Grindle's policy implementation model to look at policy implementation. The researchers used a post-positivist approach by conducting data analysis techniques using illustrative methods on primary data in the form of in-depth interviews. In-depth interviews were conducted with several crucial policymakers, including the Traffic Director at the Greater Jakarta Metro Area Police, who led the ETLE policy in its jurisdiction. The results showed that implementation of the ETLE policy in the Greater Jakarta Metro Area Police jurisdiction has not run optimally in establish an orderly traffic area. Although there is progress in implementation, there are several critical notes that must be addressed to achieve policy objectives.

Keywords: Electronic Traffic Law Enforcement (ETLE), Policy Implementation, Public Policy

INTRODUCTION

Public policy in the realm of policing is fundamental and crucial in realizing an orderly and lawful society, as it underscores the link between policy objectives and the concrete results of government activities in the implementation process. According to Grindle (1980), policy implementation in developing countries is often colored by various factors that affect the success or failure of the policy. Grindle emphasizes that the content of policy is fundamental in determining how policy is implemented and the resulting impact. Macro policy content includes goals, objectives and means used to achieve these goals. Grindle points out that policy content reflects the strategic choices made by policymakers, which ultimately affect how the policy is implemented and how likely

it is to succeed. Policy content is one of the dimensions that influence the success of policy implementation. Clear objectives, equitable distribution of benefits, and adequate means are important elements of policy content that policymakers must consider. Political context, bureaucratic capacity, and public participation are also crucial factors that influence implementation. By understanding and managing related matters, policymakers can increase the likelihood of successful policy implementation.

The police have implemented various policies to address issues related to public order and law enforcement, especially in matters directly related to the community's daily activities. One of the related policies is a policy in the traffic sector such as the Electronic Traffic Law Enforcement policy or what is often referred to by the public as ETLE. The implementation of ETLE in the Greater Jakarta Metro Area Police jurisdiction has not effectively addressed the high number of traffic violations. This is evident from the increase in recorded violations when manual ticketing stops are applied (Sari, 2023). The introduction of ETLE Mobile at various road points has also failed to significantly reduce the number of violations. From 2018 to 2023, the Greater Jakarta Metro Area Police consistently recorded the highest number of traffic violations among regional police forces. The statistics shown on Figure 1. highlight the complexity of the problems associated with the ETLE policy, indicating that its implementation has not yet resulted in a more orderly traffic system in the region (Pusiknas Polri, 2024).

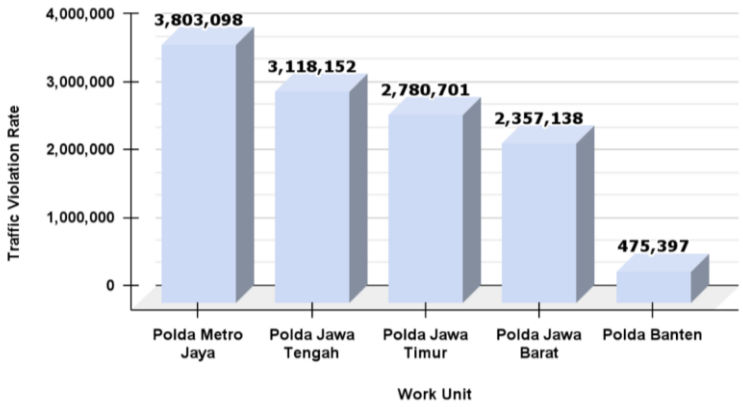

Figure 1. Regional Police with the Highest Number of Traffic Violations 2018-2023 (National Criminal Information Centre of the Indonesian National Police, 2024)

Figure 1. shows that the Greater Jakarta Metro Area Police recorded 3,803,098 traffic violations, the highest among all regional police jurisdictions. This is followed by Central Java Regional Police with 3,118,152 violations, East Java Regional Police with 2,780,701 violations, West Java Regional Police with 2,357,138 violations, and Banten Regional Police with 475,397 violations.

These statistics highlight the complexity of the problems associated with the ETLE policy, indicating that its implementation has not yet resulted in a more orderly traffic system in the region. The chart signifies that despite the deployment of ETLE technology, the Greater Jakarta Metro Area continues to struggle with a high incidence of traffic violations. This raises questions about the effectiveness of the ETLE policy and suggests that additional measures or improvements are needed to achieve better traffic law enforcement and compliance.

Act No. 22/2009 has strongly mandated the authorized agency, in this case, the National Police, to realize traffic and road transport services that are safe and orderly traffic systems. This topic is considered important to be researched further and in-depth because the data has shown that the implementation of ETLE in the Greater Jakarta Metro Area Police jurisdiction from the time it was implemented until now has not been able to reduce the number of traffic violations effectively and tends to increase. This needs to be examined more comprehensively from a policy implementation perspective so that in the end, problems in implementation can be identified that hinder the goals to be achieved.

In recent years, there has been a surge in research on the implementation of ETLE. This research primarily focuses on the direct effects of ETLE implementation, namely in improving traffic compliance and lowering traffic accidents. For instance, Dandebo et al. (2021) examine the impact of ETLE, with a particular focus on its effectiveness, collaborative governance in its implementation, and the execution of road safety policies. Sajid & Nuharjadmo (2023) also conducted a study on the performance of Electronic Traffic Law Enforcement (ETLE) and collaborative governance in the implementation of ETLE policy in Surakarta City. They also examined the impact of road safety policy in an international organization, the odd-even system policy in Jakarta, and the effectiveness of ETLE policy in the Greater Jakarta Metro Area. These studies yielded valuable insights into the immediate effects of ETLE on traffic compliance and safety. However, they have not analyzed the implementation method and how the policy implementation system could impact the overall success and sustainability of ETLE. Particularly, the dynamic relationship among various stakeholders, the structure of governance, and the intricate procedures involved in policy formulation and implementation.

Therefore, this study seeks to address this deficiency by performing a thorough analysis of the execution of the ETLE policy under the jurisdiction of the Greater Jakarta Metro Area Police. Using Grindle's (1980) policy implementation model theory (see Figure 2) which sees policy implementation as a process carried out by politics and government, the discussion in this study focuses on the execution of ETLE policy. The Grindle model is only used in this study's evaluation of the ETLE policy's ability to maintain an orderly traffic situation. Furthermore, the application of

the Merilee S. Grindle model aims to assess the degree of policy implementation. Because it illustrates how policy actors contribute to the realization of an ordered traffic area, this study improves our comprehension of the idea of ETLE policy implementation. The policy implementation model utilized in this study is based on the framework created by Merilee S. Grindle. The framework examines policy implementation from the standpoint of implementation, taking into account two aspects: the content of the policy and the context of its execution. Specific policy goals and resources, for instance, may go under the content dimension, whilst the sociopolitical climate and the administration's capacity for implementation may fall under the context dimension.

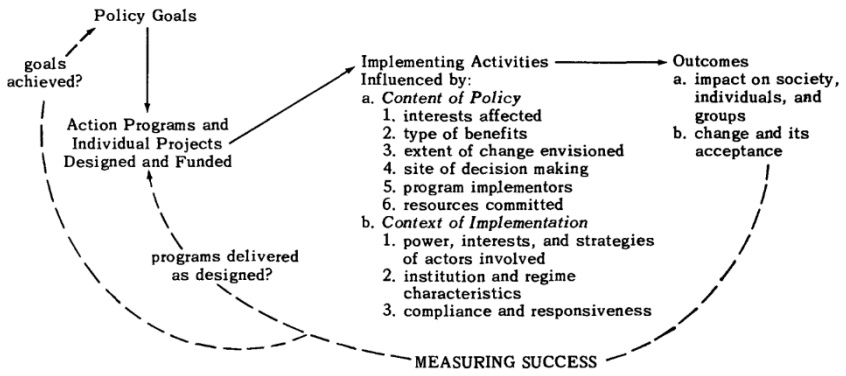

Figure 2. The Policy Implementation Model (Grindle, 1980)

The grindle rule implementation type documents the implementation's sustainability based on two key components: (a) verifying that the implementation is proceeding in accordance with the established factors; and (b) offering an evaluation of whether the intended expectations have been met. The evaluation considers the consequences on citizens either separately or collectively, as well as the degree of agreement and difference within the target group. The grindle model looks at two dimensions and their subdimensions to determine how well the level of implementation is being implemented.

Subdimensions inside the substantive dimension of the decision includes the decisions carried by the effect are subdimensions that, via influencing the process of policy implementation, check on multiple decisions either directly or indirectly. The subdimension considers how decision implementers are involved and how their policies affect the state of affairs at the moment. Then there are the benefit types, which are the subdimensions are predicated on several intended advantages, each of which necessitates successful outcomes. evaluate the advantages that the target audience anticipates. Furthermore, the Extent of Change Envisioned assesses the degree of change a policy

aims to achieve, which is inherently tied to the policy's goals. It involves explaining the desired changes with clear scales and indicators.

The Resources Committed indicates the success of a program's implementation heavily depends on the resources allocated, such as adequate facilities and infrastructure. This sub-dimension examines whether the policy is supported by sufficient resources. While the Programme Implementors is a sub-dimension focuses on the competence and capability of the implementers. It evaluates how effectively the program implementors support the policy's implementation through their skills and expertise. Lastly, the Site of Decision Making relates to the location where decisions are made by stakeholders. It highlights the importance of the decision-making process and evaluates whether the decisions are made in the appropriate locations for effective policy implementation.

The other dimension is the context of implementation; that dimension consists of three sub-dimensions. The first one is the power, interests, and strategies of the actors involved. In a policy, some things need to be considered such as the power, interests, and strategies of policy actors. This sub-dimension will explain how these three components can work together with each other directly or indirectly to support the course of policy implementation. Then, the second sub-dimension is institution and regime characteristics, the ruling government greatly affects the course of policy implementation. This sub-dimension will explain how the current institutions and regimes will affect the policy. The last sub-dimension is compliance and responsiveness. This sub-dimension will describe the extent to which the level of compliance and responsiveness of programme implementors in the context of responding to the dynamics that occur in policy implementation. Based on the background, the study aims to examine further the implementation of the Electronic Traffic Law Enforcement (ETLE) policy to realize an orderly traffic area in the Greater Jakarta Metro Area Police Jurisdiction.

METHOD

This research employs a qualitative approach within a post-positivist paradigm. The post-positivist approach recognizes the value of established theories but also allows for the emergence of new understandings through research (Creswell & Creswell, 2018). This framework enables the author to investigate various factors that influence the topic under study without being constrained by pre-existing theories. In collecting data and information, the author conducted in-depth interviews and literature reviews to determine whether the data supports or challenges existing theories. The in-depth interviews will be analyzed using thematic analysis to identify key patterns and insights. observer implementers include officials who are directly involved in the implementation of the ETLE strategy from the level of the Metro Jaya regional police, including several actors involved such as

several scientists and other Indonesian citizens (Fauzi, 2021). The author determines respondents by purposive sampling, where this technique is based on certain assessments, such as examples of unique views or greatness, in order to ensure that the collected data is significant and useful by Neuman (2014). correspondents include the director of the Metro Jaya regional police traffic division, implementers in the sub-directorate of law enforcement, students at the police science college, public observers and other Indonesian citizens.

RESULTS AND DISCUSSION

Policy Dynamics of Electronic Traffic Law Enforcement in the Greater Jakarta Metro Area Police

The dynamics of traffic problems since the ETLE method's implementation show how the procedure has been implemented in the Polda Metro Jaya jurisdiction (see Figure 3). According to data gathered by experts at the Indonesian National Police's National Criminal Law Information Centre, there seems to be a significant annual fluctuation in the overall number of traffic irregularities under Polda Metro Jaya's jurisdiction.

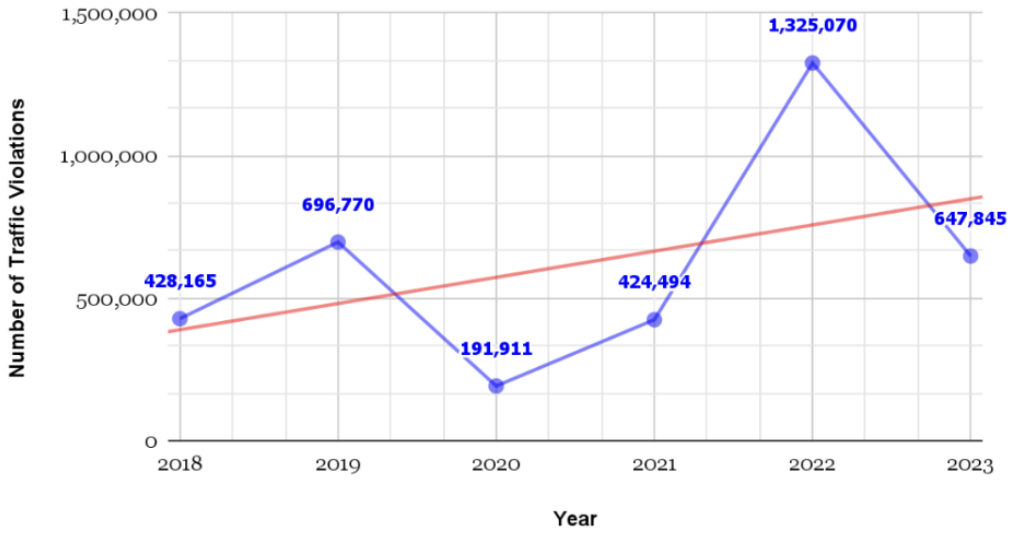

Figure 3. Number of Traffic Violations in the Greater Jakarta Metro Area Police 2018-2023 (National Criminal Information Centre of the Indonesian National Police, 2024)

There were a lot of high-level traffic deviations in the early ETLE stages. This rise in the deviation level could be brought on by community worries and ignorance of a specific choice. According to news from Antara News, during the first nine days of the ETLE camera's deployment, there were over 1,134 deviations. This indicates that some inhabitants were not aware of the new regulation, as reported by Antara News in 2019. When it is put into practice, awareness of the ETLE

camera's presence can rise rather quickly, leading to a reduction in the quantity of traffic deviations. Better driving conduct results from newcomers realizing that every infraction will be noted and dealt with. Still, this period of comprehension is fleeting. where the number of deviations started to rise again following the period of drop at the start of implementation, indicating variables that potentially affect these variations. While there is a chance that rising deviations will make the program less effective overall, the benefits outweigh the drawbacks. two very significant factors that contribute to the storage are the uneven application of the legislation and the inadequate transit infrastructure. Despite the fact that ETLE is offered to raise the degree of effectiveness Even though ETLE was created to improve law enforcement's efficiency, its scope is still somewhat narrow. based on information from WRI Indonesia (2018), only 19.8% of Jakarta's population really uses public transportation; yet, some individuals choose to drive their own cars. Due to the large volume of traffic and the dearth of public transportation, drivers frequently search for the side of the road for traffic laws in an effort to avoid traffic bottlenecks. By conducting in-depth interviews with the relevant parties, this study seeks to get a full understanding of the issues that could impact the ETLE policy.

In order to educate the public, the execution of this traffic decision is frequently balanced with the delivery. Nevertheless, this education's efficacy is not operating at optimal capacity. For instance, the community is confused by the constant changes made to laws and practices. Unintentional deviations are caused by the inconsistent socialization of this knowledge, which influences the fluctuating level of deviations (Mayastinasari & Lufpi, 2022). The state of the economy and all kinds of communal activities have an impact on this inconsistency. Modifications to government policies that impact transportation, including the financial sector's actions during the COVID-19 epidemic, which resulted in traffic diversions, as stated by the Ministry of Transportation (2020). The social and cultural factors present in a community have an impact on the variations in traffic deviations. For example, the strong cultural association of owning a private vehicle as a symbol of social status persists in Jakarta, partly due to a development pattern that remains car-oriented (CNN Indonesia, 2021). Many individuals prefer using private vehicles over public transport, despite inadequate road infrastructure to accommodate the growing number of vehicles. Consequently, there has been an increase in traffic violations as people seek to avoid traffic jams or find faster alternative routes. Overall, fluctuations in traffic violation numbers within the Greater Jakarta Metro Area Police jurisdiction result from various interacting factors, including the initial implementation of ETLE, infrastructure limitations, changing policies, economic conditions, and social and cultural changes, particularly those related to community attitudes toward traffic orderliness. Interviews with stakeholders can shed light on how cultural attitudes toward traffic rules impact policy effectiveness, offering deeper insights into these social and cultural aspects.

Analysis of ETLE Policy Implementation in the Greater Jakarta Metro Area Police Based on Grindle's Policy Implementation Model

Interests Affected

This sub-dimension addresses the agendas or interests that drive the implementation of a given policy. In policy analysis, identifying the stakeholders involved—whether they support or oppose the policy—is crucial. This includes agendas from various sectors such as government, civil society, non-governmental organizations, and the private sector. Understanding these agendas is key to grasping the power dynamics and their influence on policy implementation (Grindle, 1980). The execution of this traffic decision is often balanced with the delivery in order to educate the public. However, the effectiveness of this education is not working to its full potential. For example, the community finds it confusing that rules and procedures are changed on a regular basis. The uneven socialization of this knowledge leads to unintentional deviations, which in turn affects the varying degree of deviations. This discrepancy is influenced by various societal activities as well as the status of the economy. Government policy changes that affect transportation, such as the actions of the banking sector during the COVID-19 pandemic that caused traffic diversions (Ministry of Transportation, 2020). The variances in traffic diversions are influenced by the social and cultural characteristics that exist within a community.

Type of Benefits

The subdimension evaluates the different benefits received, such as who will gain from it and whether this aim may be attained directly or indirectly as well as in the medium and long terms. in order to comprehend the laws and how they affect society. Grindle (1980) cites the advantages of the ETLE-related strategy, including less traffic congestion, improved air quality, and better pedestrian safety. Grindle's theory of policy implementation places a strong emphasis on the crucial aspect of making decisions actionable. Under the Metro Jaya regional police's jurisdiction, policies and regulations pertaining to ETLE are displayed through sub-dimension considerations, which can facilitate decision-making (Hidayat, 2022). Offer long-term guarantees and significant immediate benefits in the traffic culture system. Nevertheless, a lot of material concentrates on a variety of issues, including a lack of public awareness and several infrastructure-related barriers.

Extent of Change Envisioned

The degree of change that must be expected determines the degree of change that is taken into account when putting this policy into practice. this progresses from little tweaks to significant

redesigns. In this instance, it is crucial to concentrate on policies that are in line with and accomplished within the allotted time frame. Quoting Sutrisno (2019), it is crucial to provide an assessment of the degree of change in order to ascertain whether or not the community can accept the policy. For instance, the ETLE policy in the Greater Jakarta Metro Area aims to achieve significant reductions in traffic violations and substantial improvements in traffic flow. However, based on the analysis of in-depth interviews, it is evident that the sub-dimensional indicators for the desired degree of change have not been fully met. Specific goals, such as comprehensive ETLE camera coverage, the development of an online notification system, and the integration of handheld technology, remain incomplete. The current implementation shows progress but highlights significant gaps, such as limited ETLE camera deployment and an underdeveloped online notification system (Wayne, 2020). This indicates that, while the policy's direction is clear and initial steps have been taken, achieving the ultimate goal of the desired transformation is ongoing and requires additional time and continuous effort.

Site of Decision-Making

Policy implementation often encounters a range of challenges that can impact its effectiveness and efficiency. Grindle's policy implementation theory highlights that this process involves not only the formulation and execution of decisions but also their adaptation and response at various levels. In the case of the ETLE policy, decision-making occurs at multiple levels: the national government, Jakarta local government, and Jakarta Metro Police. One crucial aspect of policy implementation is the site of decision-making, which encompasses where decisions are made and how decentralization affects their success (Grindle, 1980). Analysis of the interview transcripts indicates that the sub-dimensional indicators of decision-making location in the ETLE policy implementation within the Greater Jakarta Metro Area Police jurisdiction have been addressed, particularly regarding stakeholder involvement and decentralization. However, there are significant issues related to coordination between the local government and the police. For instance, conflicting priorities and communication gaps have been identified as barriers that may impede effective policy implementation. While cross-agency involvement and good internal socialization are positive factors, there is a need for enhanced coordination and unified intentions. Improving these aspects is essential for the ETLE policy to be executed in a more structured and effective manner (Aprillia, 2020). Specific examples, such as instances of miscommunication or coordination failures, could further illustrate how these decision-making processes have influenced the policy's implementation.

Program Implementors

Program implementers, including government officials, non-governmental organizations, and private sector actors, play a crucial role in the successful execution of policies. Their capacity and competence are pivotal for effective policy implementation (Grindle, 1980). Evaluation of these implementers involves assessing human resources, infrastructure, and coordination mechanisms. In the context of the ETLE policy implementation within the Greater Jakarta Metro Area Police jurisdiction, it can be affirmed that the sub-dimension indicators related to implementer competence are generally met. Officers have undergone specialized training and obtained relevant certifications, which have notably enhanced their technical skills and enforcement capabilities. This training has contributed to more efficient and effective policy enforcement. However, challenges remain. Regulatory barriers, such as ambiguous legal provisions and difficulties in accessing relevant data from other agencies, hinder the implementation process (Nugroho, 2022). Although training programs have proven to be beneficial, a thorough assessment of these procedures is required to identify potential areas for enhancement. Enhancements to the current cross-agency coordination procedures are also necessary to facilitate more effective ETLE implementation.

Resources Committed

Allotted funds, personnel, equipment, and supplies are used to carry out the ETLE policy within Polda Metro Jaya's purview. For example, a specific budget is set aside for the installation of security personnel and surveillance cameras to keep an eye on moving infractions. The *Cakra Presisi* application and the back-office system are examples of technological resources. Through the facilitation of data management and the increase of violations, the *Cakra Presisi* application boosts efficiency. Additionally, the back-office technology facilitates more effective data handling and reporting. Even with advancements, a number of problems persist, including insufficient funding for camera upkeep and antiquated equipment that makes data processing difficult. The funding is insufficient to pay ongoing operating expenditures, which makes successful implementation more challenging in addition to the loss of agency integration. Therefore, while resources have been allocated and utilized, they are not yet adequate or efficiently used to fully support policy implementation. Further improvements and enhancements are necessary to meet the policy goals effectively.

Power, Interests, and Strategies of Actors Involved

The context of power and interests refers to the various actors involved in policy implementation and how their power and interests shape the process. These actors can include politicians, bureaucrats, community groups, and the private sector. Their strategies to either support or hinder policies are crucial to understanding the political and power dynamics that influence successful implementation (Zulfan, 2022). This sub-dimension provides insight into how these dynamics impact policy outcomes. In the case of the ETLE policy implementation, power indicators have been largely met. Interviews with stakeholders reveal that strong support from the Chief of Police significantly contributes to the successful implementation of ETLE, as it grants the Director of Traffic substantial authority and legitimacy. However, there is concern that frequent changes in leadership within the Traffic Corps might undermine the stability of power necessary for sustained policy implementation. Furthermore, the interests of various actors in the ETLE policy have been addressed. The emphasis on ethical considerations in the use of information technology reflects a commitment to maintaining integrity in policy execution. While the Director of Traffic has demonstrated technological innovation with the *Cakra Presisi* application, which aims to enhance law enforcement effectiveness, feedback indicates the need for a more nuanced approach (Dunn, 2017). Respondents have highlighted the importance of integrating technological solutions with ethical considerations to ensure fair and effective policy implementation and to sustain the ETLE system in the long term.

Institution and Regime Characteristics

The characteristics of institutions and regimes encompass the structure and functions of government institutions, political stability, regulations, and the policy orientation of the ruling regime. Political stability and institutional strength play a crucial role in policy implementation. Strong and stable institutions are generally more effective in executing policies, while weak and unstable ones may encounter significant obstacles (Grindle, 1980). The criteria pertaining to the institutional nature and governance system have been fully satisfied, as per the in-depth interview analysis. For instance, the grant given by the DKI Jakarta Provincial Government to install surveillance cameras and create a legislative framework to enforce the ETLE policy is evidence of the support that government institutions have shown (Marfiando, 2021). Additionally, the central and regional governments' continuous and unwavering backing of the strong government institutions was a major factor in the execution of ETLE's success (Aziz & Windiyastuti, 2022). This assistance consists of the issuance of rules and the distribution of funds that Consequently, the efficiency of

implementing ETLE policy is greatly enhanced by the political stability and institutional strength that are present in this setting.

Compliance and Responsiveness

Response to policy changes and stakeholder needs is referred to as responsiveness, whereas compliance measures how much stakeholders follow rules and regulations. Evaluating the degree of compliance and responsiveness is one approach to determine whether or not a policy has been implemented successfully. A policy's effectiveness can be determined by how well implementers adhere to set protocols and rules and by how well they adapt to changing conditions on the ground (Grindle, 1980). The majority of stakeholders under the Jakarta Metropolitan Police's authority adhere to the established protocols, and there is a comparatively high degree of compliance with the Electronic Traffic Law Enforcement (ETLE) policy. However, issues including insufficient traffic violation data and uneven enforcement in various locations have surfaced. Because there aren't enough cameras in some places, for instance, more offenses are reportedly being overlooked. Furthermore, while the answer has largely complied with the requirements, system performance can still be enhanced. For instance, there is a lack of public awareness of the penalty system, which leaves individuals perplexed and disengaged. System responsiveness can be increased by combining public awareness initiatives with improved manual system coordination. Even though the majority of the compliance and responsiveness metrics are met, fixing this specific problem is essential to enhancing the ETLE policy's execution (Arjuna, 2020).

CONCLUSION

According to the data analysis conducted to assess the implementation of the ETLE policy in the jurisdiction of the Jakarta Metropolitan Police, several subdimensions of the policy have not been met. This analysis is based on the Grindle policy implementation model. Two main components of the study, the expected level of change and the resources committed, specifically indicate important problems. According to the analysis, the current use of the ETLE policy has not fully optimized traffic resolution, and there are several important areas that need improvement to achieve the policy objectives.

SUGGESTION

First, the writers suggest enhancing Monitoring Infrastructure by installing more ETLE cameras in key places and upgrade current ones to enhance monitoring and recording precision. Public-private partnerships may be a preferable option for allocating funds for camera installation

and upkeep. Boost the Integration of Data: Build a more robust system for integrating data and enforcing violations that connects ETLE data to vehicle ownership records and other pertinent agency data. This will lessen irregularities and make it easier to identify those who violate traffic laws. Second, we recommend extending the campaign for public education beyond social media. Public education campaigns are required to create a broader revolution in transportation behavior. Launch a comprehensive public education campaign regarding ETLE methods, benefits, and presentations across a variety of media platforms. Lastly as a suggestion for the general public, they need to make use of the offered application or platform to keep track of ticket status updates and make sure that car ownership information is up to current. The emphasis is on the application of data analytics and artificial intelligence (AI) to the prevention and deterrent of traffic infractions.

REFERENCES

A., Farid Azis & Windiyastututi, Feny. (2022). "Electronic Traffic Law Enforcement (ETLE) sebagai Digitalisasi Proses Tilang". *Jurnal Kewarganegaraan*, Vol. 6, No. 2.

Antara News. (2019). Jakarta's advanced ETLE system projected to curb traffic accidents. *Antara News*. https://en.antaranews.com/news/130296/jakartas-advanced-etle-system-projected-to-curb-traffic-accidents

Aprillia, AA (2020). Implementasi e-tilang dalam meningkatkan pelayanan Publik oleh Satuan Lalu-lintas Polres Banyumas. *Advances in Police Science Research Journal*.

Arjuna, YD (2020). Implementasi Program E-Tilang Dalam Penegakan Hukum Pelanggaran Lalu Lintas Di Wilayah Hukum Polres Banyumas. *Advances in Police Science Research Journal*.

CNN Indonesia. (2021). Jakarta Ubah Pola Pembangunan Berorientasi Kendaraan Pribadi. *CNN Indonesia*. https://www.cnnindonesia.com/nasional/20210325005509-20-621771/jakarta-ubah-pola-pembangunan-berorientasi-kendaraan-pribadi

Creswell, J. W., & Creswell, D. J. (2018). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. SAGE Publications.

Dandebo, L., Dimberg, L.M. & Goldoni Laestadius, J. (2021). The impact of a road safety policy implementation within an international organization. *Journal Public Health (Berl)*. *29*, 951–956.

Dunn, W.N. (2017). *Public Policy Analysis: An Integrated Approach (6th ed.)*. Routledge.

Fauzi, M. I. (2021). Evaluasi Implementasi Sistem Elektronic Traffic Law Enforcement (ETLE) di Indonesia. *Jurnal Hukum dan Kriminologi, 15*(1), 55-70.

Grindle, M. (1980). *Politics and Policy Implementation in The Third World.* New Jersey: Princeton University Press.

Hidayat, T. A. (2022). Analisi Efektifitas Implementasi ETLE dalam Mengurangi Pelanggaran Lalu Lintas di Kota Besar. *Jurnal Ilmu Transportasi dan Lalu Lintas, 11*(2), 89-102.

Kemenhub. (2020). Di Tengah Pandemi, Kemenhub Terus Tingkatkan Kesadaran Keselamatan Jalan. *Kementerian Perhubungan RI.* https://dephub.go.id/post/read/di-tengah-pandemi,-kemenhub-terus-tingkatkan-kesadaran-keselamatan-jalan?language=en

Marfiando, B. (2021). *Efektivitas implementasi kebijakan electronic traffic law enforcement (E-TLE) di wilayah hukum Polda Metro Jaya: perspektif model Edward III.* (Tesis, Sekolah Kajian Stratejik dan Global, Universitas Indonesia: Depok).

Mayastinasari, V., & Benyamin Lufpi. (2022). Efektivitas Electronic Traffic Law Enforcement. *Jurnal Ilmu Kepolisian.*16(1), 62-70.

Neuman, W. L., & Robson, K. (2014). *Basics of Social Research.* Toronto: Pearson Canada.

Nugroho, A. S. (2022). Electronic Traffic Law Enforcement (E-TLE) Mobile sebagai Difusi Inovasi,Interoperabilitas menuju E-TLE Nasional (Studi Implementasi E-TLE Mobile di Wilayah Jawa Tengah). *Jurnal Ilmu Kepolisian.*

Pusiknas Polri. (2024). *Statistik Pelanggaran Lalu Lintas.* https://pusiknas.polri.go.id/langgar_lantas

Sajid, A., & Nurharjadmo, W. (2023). Collaborative Governance pada Implementasi Kebijakan Electronic Traffic Law Enforcement (E-Tilang) di Kota Surakarta. *Jurnal Mahasiswa Wacana Publik*, *3*(1), 13-30.

Sari, R. (2023). Perbandingan Implementasi ETLE di Berbagai Wilayah Indonesia: Studi Kasus Jakarta, Surabaya, dan Bandung. *Jurnal Kebijakan Publik, 18*(1), 112-130.

Sutrisno, Asmara A, Wahyurudhanto. (2019). Penegakan hukum lalu lintas melalui sistem e-tilang. *Jurnal Ilmu Kepolisian.13*(3), 187-202.

Wayne, AM (2020). Efektivitas Penerapan E-Tilang dalam Penindakan Pelanggaran Lalu Lintas di Wilayah Hukum Polres Banyumas. *Police Studies Review,* 111.68.112.77.

WRI Indonesia. (2018). Integrating Public Transport Networks to Overcome Jakarta Traffic Congestion. *World Resources Institute Indonesia*. https://wri-indonesia.org/en/insights/integrating-public-transport-networks-overcome-jakarta-traffic-congestion

Zulfan, N. (2022). Tantangan dan solusi dalam penerapan electronic traffic law enforcement di Indonesia. *Jurnal Teknologi dan Hukum, 20*(3), 145-160.