



ANALYSIS OF THE IMPLEMENTATION OF ELECTRONIC TRAFFIC LAW ENFORCEMENT (ETLE) IN IMPROVING POLICE PERFORMANCE AND PUBLIC COMPLIANCE WITH TRAFFIC REGULATIONS AT THE TRAFFIC DIRECTORATE OF THE SOUTH SULAWESI REGIONAL POLICE

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Abstract

This study aims to analyze the implementation of Electronic Traffic Law Enforcement (ETLE) in improving police performance and public compliance in traffic at the Traffic Directorate of the South Sulawesi Regional Police. This study uses a qualitative method with an explanatory case study approach to gain a deep understanding of the implementation of ETLE as a digital innovation in traffic law enforcement. Research data were obtained through interviews, observations, and documentation with seven informants consisting of police officers, ETLE operators, members of the public who have been caught violating ETLE, and academics in the field of transportation. Data analysis was carried out through the stages of data reduction, data presentation, and drawing conclusions.

The results of the study indicate that the implementation of ETLE has been effective in supporting a more modern, transparent, and accountable traffic law enforcement process. The use of electronic camera technology and the integration of motor vehicle databases can increase the effectiveness of supervision, accelerate the process of identifying violations, and strengthen the professionalism of police performance. In addition, ETLE has a positive impact on changing public behavior by increasing discipline in complying with traffic regulations and creating a deterrent effect for violators. However, the implementation of ETLE still faces several obstacles, such as the limited number of surveillance cameras, network system disruptions, and less than optimal socialization to the public. This study concludes that ETLE is an effective digital transformation strategy in strengthening police performance and increasing public legal awareness in creating a culture of orderly traffic.

Keywords: Electronic Traffic Law Enforcement (ETLE), Police Performance, Public Compliance, Digital Transformation, Traffic Law Enforcement.

INTRODUCTION

Management is the process of planning, organizing, implementing, and controlling organizational resources to achieve goals effectively and efficiently (Armstrong, 2014). In the public sector, the implementation of good management is the foundation for improving service quality, accountability, and organizational performance. The development of digital technology has also driven the transformation of government management, including within the Indonesian National Police through the implementation of **Electronic Traffic Law Enforcement (ETLE)**. As an electronic-based traffic law enforcement system, ETLE is not only a technological innovation but also a management instrument that supports transparency, objectivity, and effectiveness of public services (Adhithia et al., 2025).

The implementation of ETLE is expected to improve police performance while fostering public compliance with traffic laws. Police performance is reflected in the organization's ability to carry out

law enforcement functions professionally, accountably, and responsively to technological developments. Furthermore, public compliance is an indicator of successful law enforcement because it demonstrates an awareness of obeying traffic regulations without coercion. Recent research shows that ETLE contributes to increased objectivity in enforcement and road user compliance, although its effectiveness is still influenced by infrastructure quality, data integration, and human resource competency (Rizki, 2024; Tiessa et al., 2025).

The South Sulawesi Regional Police Traffic Directorate plays a strategic role in ensuring security, safety, order, and smooth traffic flow. This organization oversees 24 traffic units at the police precinct level, supported by 306 personnel spread across various sub-directorates, including the Law Enforcement Sub-Directorate (Gakkum), Registration and Identification (Regident), and Highway Patrol (PJR). Through this function, the South Sulawesi Regional Police Traffic Directorate is responsible for implementing ETLE as part of the modernization of public services and police bureaucratic reform.

The success of ETLE implementation is influenced by various factors, including technological readiness, vehicle registration data quality, personnel competence, inter-unit coordination, and the public's level of understanding of digital law enforcement systems. According to Adhitia et al. (2025), challenges to ETLE implementation still relate to technological aspects and system management, while Sualang (2025) emphasizes that regulatory certainty is a crucial factor in increasing the effectiveness of law enforcement.

A preliminary survey showed that the implementation of ETLE at the South Sulawesi Regional Police Traffic Directorate has been running, but obstacles were still found in the form of limited ETLE cameras, valid vehicle data, and uneven socialization to the community. This phenomenon is reflected in data from the Sub-Directorate of Law Enforcement of the South Sulawesi Regional Police Traffic Directorate, which shows the number of accidents increasing from 7,896 cases in 2023 to 8,739 cases in 2025, while traffic violations increased in 2024 by 36,914 cases before decreasing to 24,956 cases in 2025. The decrease in violations has not been followed by a decrease in the number of accidents, indicating that traffic compliance has not been fully established.

Based on these conditions, there are still problems in the form of suboptimal implementation of ETLE in improving police performance and public compliance. Therefore, research on the Analysis of the Implementation of Electronic Traffic Law Enforcement (ETLE) in Improving Police Performance and Public Compliance in Traffic at the Traffic Directorate of the South Sulawesi Regional Police is important to obtain an overview of the effectiveness of ETLE implementation and the factors that influence its success.

Previous research has shown that the implementation of Electronic Traffic Law Enforcement (ETLE) has a positive impact on the effectiveness of traffic law enforcement. Mayastinasari and Lufpi (2022) stated that ETLE increases transparency and objectivity in enforcement, although it still faces obstacles in data integration and infrastructure. Rizki (2024) found that the implementation of ETLE

in Serang City was not optimal due to limited cameras and public outreach. Adhithia, Nurdin, and Rajab (2025) concluded that the success of ETLE is influenced by technological readiness, human resources, and organizational management. Tiessa, Lesmana, and Indayatun (2025) proved that ETLE is able to increase public compliance with traffic laws, while Sualang (2025) emphasized that regulatory certainty strengthens the effectiveness of ETLE implementation in supporting accountable law enforcement.

Although various previous studies have shown that Electronic Traffic Law Enforcement (ETLE) contributes to improving law enforcement effectiveness and public compliance, most studies have focused on the legal aspects, policy implementation, or technical evaluation of the ETLE system. These studies have not examined ETLE from an organizational management perspective, particularly in relation to simultaneously improving police performance and public compliance. Furthermore, empirical studies within the Traffic Directorate of the South Sulawesi Regional Police are still very limited.

The novelty of this research lies in the integration of organizational performance management perspectives with the implementation of Electronic Traffic Law Enforcement (ETLE) as a digital transformation instrument at the Traffic Directorate of the South Sulawesi Regional Police. This research not only analyzes the effectiveness of ETLE as an electronic-based law enforcement system but also examines its role in simultaneously improving police performance and public compliance in traffic. Thus, this research is expected to provide theoretical and practical contributions to the development of technology-based traffic law enforcement management within the Indonesian National Police.

LITERATURE REVIEW

Management

Management is the process of planning, organizing, directing, and controlling organizational resources to achieve goals effectively and efficiently (Armstrong, 2014). In public organizations, management plays a role in ensuring that all human resources, technology, and work procedures are integrated to produce quality services. Similarly, Dessler (2017) explains that organizational effectiveness is greatly influenced by management's ability to manage human resources, work systems, and organizational change on an ongoing basis.

Organizational Performance

Organizational performance reflects the level of success an organization has in achieving its established strategic goals. Kaplan and Norton (1996) explain that performance measurement focuses not only on financial results but also on internal processes, organizational learning, and user satisfaction. Furthermore, Robbins and Judge (2013) state that performance improvement is

influenced by the effectiveness of organizational structure, leadership, technology utilization, and individual behavior in carrying out organizational tasks.

Electronic Traffic Law Enforcement (ETLE)

Electronic Traffic Law Enforcement (ETLE) is a digital technology-based traffic law enforcement system that utilizes electronic cameras and digital evidence in the process of enforcing violations. Adhitia, Nurdin, and Rajab (2025) stated that the implementation of ETLE is part of the police's digital transformation to increase transparency and accountability in law enforcement. Meanwhile, Sarkosi (2024) explained that the implementation of ETLE contributes to increasing public compliance while reducing the potential for violations through an objective electronic monitoring mechanism.

Legal Compliance

Legal compliance is an individual's willingness to comply with applicable legal provisions as a form of awareness of social norms and state regulations. Soekanto (2007) explains that legal compliance is influenced by public understanding of the law, consistent law enforcement, and the legitimacy of law enforcement officials. Similarly, Ulfah (2023) states that policy innovation through the ETLE system can increase public legal awareness because the enforcement process is carried out transparently, objectively, and based on information technology.

Conceptual Framework

The conceptual framework of this research is based on the assumption that Electronic Traffic Law Enforcement (ETLE) is a technology-based law enforcement management instrument that plays a role in increasing the effectiveness of the implementation of the duties of the South Sulawesi Regional Police Traffic Directorate. The implementation of ETLE supported by technological readiness, quality vehicle registration data, personnel competence, and an integrated monitoring system is expected to improve police performance through more effective, transparent, and accountable law enforcement. This improved performance will further encourage increased public compliance in traffic because the enforcement process is carried out objectively and based on electronic evidence. The synergy between the implementation of ETLE, improved police performance, and public compliance is ultimately expected to realize professional traffic law enforcement, quality public services, and the creation of security, safety, order, and smooth traffic flow in the jurisdiction of the South Sulawesi Regional Police Traffic Directorate.

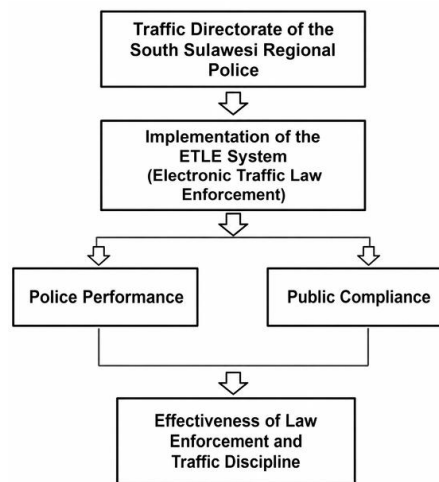


Figure 1 Conceptual Framework

METHOD

The research method serves as a guideline that directs all stages of the research process so that the data collection, processing, and analysis are carried out systematically and produce credible findings. This study uses a qualitative approach because it aims to understand in-depth the implementation of Electronic Traffic Law Enforcement (ETLE) in improving police performance and public compliance at the South Sulawesi Regional Police Traffic Directorate through the perspectives of actors, service users, and parties with competence in the transportation sector (Creswell & Creswell, 2023; Moleong, 2018).

Research Design

This research employed a qualitative approach with a descriptive-analytical design and a case study strategy. The qualitative approach was chosen because it comprehensively explored the meanings, experiences, and perceptions of informants regarding ETLE implementation. The descriptive design was used to describe the actual conditions of ETLE implementation, while the analysis was conducted to interpret the relationship between ETLE implementation, improved police performance, and public compliance. The case study strategy was chosen because the research focused on a single organization, namely the Traffic Directorate of the South Sulawesi Regional Police, allowing for in-depth exploration of the phenomenon in a real-world context (Yin, 2023).

Place and Time of Research

The research was conducted at the South Sulawesi Regional Police Traffic Directorate, Jalan A.P. Pettarani No. 47, Makassar City, as the main location for ETLE implementation. Data collection was also conducted from residents who had received ETLE enforcement through the technique *door to door* and relevant public locations, and involved academics from the South Sulawesi Class II Land

Transportation Management Center as expert informants. The research was conducted from November to December 2025, starting from instrument preparation, data collection, field observations, in-depth interviews, and verification of research results.

Table 4.1 Research Schedule

No	Activity	November 2025	December 2025
1	Research preparation	✓	-
2	Field observation	✓	✓
3	In-depth interview	✓	✓
4	Documentation	✓	✓
5	Data analysis		✓
6	Compilation of research results		✓

Source: Processed by Researchers (2025)

Informant Determination Technique

Informants were selected using purposive and accidental sampling. The purposive technique was used to select informants with knowledge, experience, and direct involvement in ETLE implementation, namely the Head of the Gakkum Sub-Directorate, ETLE operators, and transportation academics. Meanwhile, accidental sampling was used to obtain information from members of the public who had experienced ETLE enforcement. The study involved seven informants, providing a balanced range of internal and external perspectives.

Data Collection Techniques

Data collection was conducted through in-depth interviews, observation, and documentation. Interviews were used to obtain information regarding informants' experiences and perceptions regarding ETLE implementation. Observations were made of the ETLE operational process and law enforcement mechanisms in the field. Documentation was used to collect supporting data in the form of performance reports, traffic violation data, regulations, and other official documents, thus providing a more comprehensive research result.

Research Instruments

The main instrument in qualitative research is the researcher himself (human instrument) who played a role in determining the research focus, conducting interviews, observations, and interpreting data. Supporting instruments included semi-structured interview guidelines, observation sheets, a voice recorder, a camera, a field notebook, and official documents related to ETLE implementation.

Data Analysis Techniques

Data analysis used the Miles, Huberman, and Saldaña (2023) Interactive Model, which consists of data reduction, data presentation, and conclusion drawing. Data reduction was carried out through the process of selecting and categorizing relevant information. Data presentation was done in

narrative, matrix, and tabular form to facilitate interpretation. Furthermore, conclusions were drawn continuously throughout the research until consistent findings were obtained that could answer the research problem formulation.

Data Validity Test

Data validity was tested using source triangulation, technical triangulation, and time triangulation. Source triangulation was conducted by comparing information from the Head of the Gakkum Sub-Directorate, ETLE operators, the community, and academics. Technical triangulation was conducted by comparing the results of interviews, observations, and documentation. Meanwhile, time triangulation Time is carried out through repeated data collection at different times to ensure consistency of information so that the research results have a high level of credibility and trustworthiness.

RESEARCH RESULTS AND DISCUSSION

Research result

The implementation of Electronic Traffic Law Enforcement (ETLE) at the South Sulawesi Regional Police Traffic Directorate is part of the digital transformation in the traffic law enforcement system that aims to improve service effectiveness, police professionalism, and public compliance. The results of this study were obtained through in-depth interviews with seven informants consisting of Ditlantas officials, ETLE operators, members of the public who have been caught by ETLE, and transportation academics. In addition, the results of field observations and documentation were used as supporting data to strengthen the research findings to obtain a comprehensive picture of ETLE implementation at the South Sulawesi Regional Police Traffic Directorate.

Table 2 Interview Results Regarding ETLE Implementation

No	Aspect	Research Findings
1	Implementation of ETLE	It has been running according to national policy and has become the main electronic enforcement system.
2	Sarana Prasarana	ETLE devices are available, but the number of cameras is still limited at certain points.
3	Human Resources	Operators have understood the system, but technical competency improvement is still needed.
4	Coordination	Coordination between units is running well, but collaboration with other agencies still needs to be strengthened.
5	Socialization	Socialization to the community has been carried out but has not yet reached all levels of society.

Source: Primary Data Processed by Researchers (2025).

Based on interviews, the implementation of ETLE at the South Sulawesi Regional Police Traffic Directorate has been successful as a form of modernizing law enforcement. Informants stated that the ETLE system has increased transparency and reduced direct interaction between officers and

violators. However, the effectiveness of the implementation still faces several obstacles, such as the limited number of surveillance cameras, the need to improve operator competency, and suboptimal cross-sector coordination and community outreach. Therefore, system development is still needed.

Table 3. Interview Results Regarding the Impact of ETLE on Police Performance

No	Indicator	Findings
1	Effectiveness of law enforcement	Increased due to the use of electronic evidence.
2	Transparency	It's getting better because the enforcement process is digitally documented.
3	Accountability	Improved through electronic data-based systems.
4	Work efficiency	Reduce the burden of manual ticketing and administration.
5	Professionalism	Driving technology-based work culture change.

Source: Primary Data Processed by Researchers (2025).

The research results show that ETLE has a positive impact on improving police performance. Informants stated that the enforcement process is more objective because it is based on electronic evidence, thus minimizing the potential for irregularities. Furthermore, the digital system expedites the administration of violations and facilitates monitoring by superiors. However, several informants emphasized the need for improved information system integration and collaboration with relevant agencies to optimize ETLE's effectiveness.

Table 4. Interview Results Regarding Community Compliance After ETLE Implementation

No	Indicator	Research Findings
1	Legal awareness	Increased after learning of electronic surveillance.
2	Traffic compliance	Starting to experience improvements, especially at ETLE locations.
3	Public understanding	It is not yet evenly distributed so education is still needed.
4	Perceptions of ETLE	The majority of people support it because it is considered more objective.
5	Community expectations	Adding camera points and increasing socialization.

Source: Primary Data Processed by Researchers (2025).

Interview results indicate that the public responded positively to the implementation of ETLE, believing it could create fairer and more transparent law enforcement. Most informants acknowledged being more cautious when passing through areas where ETLE cameras have been installed. However, several informants noted that public awareness of the ETLE mechanism still needs to be improved, particularly among residents in outlying areas. Furthermore, increasing the number of cameras in locations prone to violations and accidents is seen as crucial to improving the system's overall effectiveness.

Discussion

The results of the study show that the implementation of Electronic Traffic Law Enforcement (ETLE) The Traffic Directorate of the South Sulawesi Regional Police has contributed to improving the quality of traffic law enforcement. The implementation of ETLE not only shifted enforcement mechanisms from conventional to digital technology-based systems but also encouraged changes in

organizational governance, increased officer professionalism, and the formation of more orderly community behavior. The following discussion outlines the research findings based on four main aspects: ETLE implementation, improved police performance, community compliance, and implications for organizational management, comparing them with previous research.

Penerapan Electronic Traffic Law Enforcement (ETLE)

The research results show that the implementation of ETLE at the South Sulawesi Regional Police Traffic Directorate has been running in accordance with national policy and is part of the digital transformation in traffic law enforcement. This system is able to increase transparency because all violations are recorded using electronic devices, thereby reducing subjectivity in the enforcement process. Based on the results of interviews, the successful implementation of ETLE is supported by the commitment of leaders, the readiness of operators, and the availability of supporting devices. However, the research also found several obstacles, namely the limited number of surveillance cameras, less than optimal integration between agencies, and the need to increase public outreach. Informants also emphasized the importance of collaboration with the Transportation Agency and the Courts to ensure a more effective electronic law enforcement process. These findings align with the research. Adhitia, Nurdin, and Rajab (2025) which states that ETLE implementation is influenced by technological readiness, organizational management, and inter-agency coordination. This study also supports the findings of Mayastinasari and Lufpi (2022) that ETLE success is determined not only by technology but also by the quality of organizational governance and the readiness of supporting systems.

Improving Police Performance Through ETLE

The implementation of ETLE has been proven to have a positive impact on improving police performance, particularly in aspects of law enforcement effectiveness, service accountability, and administrative efficiency. Through the use of electronic evidence, the enforcement process becomes more objective and minimizes the potential for abuse of authority. Furthermore, ETLE operators can conduct monitoring more quickly, thereby increasing work productivity compared to manual ticketing systems. From a management perspective, the implementation of ETLE also encourages a shift in work culture towards an information technology and data-based organization. However, research results indicate that improving human resource competency is still necessary for all personnel to be able to operate the system optimally. This finding aligns with Armstrong's (2014) performance management concept, which emphasizes that the achievement of organizational goals is influenced by the integration of human resources, technology, and work systems. These results also support research by Ambat, Karuntu, and Roring (2025), which states that ETLE system maintenance and personnel readiness influence improved traffic police operational performance.

Public Compliance in Traffic

Research shows that the implementation of ETLE has a positive impact on increasing public compliance with traffic laws. Most informants stated that the presence of ETLE cameras makes people more cautious when driving because every violation can be automatically recorded. However, compliance levels are uneven because some people still do not understand the ETLE mechanism or the importance of traffic safety. Therefore, ongoing education and outreach remain a primary need. Based on interview results, the public also hopes for additional ETLE camera installation points in locations prone to violations and accidents so that monitoring can be carried out more widely. This finding is consistent with research by Tiessa et al. (2025) which stated that ETLE can increase public compliance although it has not completely replaced conventional law enforcement. The results of this study also strengthen research by Sarkosi (2024) which concluded that electronic-based monitoring can gradually form a culture of orderly traffic.

Implications of Organizational Management in ETLE Implementation

From an organizational management perspective, the implementation of ETLE is not only a technological innovation but also a strategic instrument in improving the organizational effectiveness of the South Sulawesi Regional Police Traffic Directorate. The ETLE system encourages changes in work patterns that are more transparent, accountable, and data-driven, thus supporting faster and more accurate decision-making. This study also found that successful ETLE implementation requires synergy between the police, the Transportation Agency, the courts, and the public as road users. In addition, strengthening human resource competencies, improving the quality of Registration and Identification (Regident) services, and updating technological infrastructure are important factors in supporting the system's sustainability. These findings support the Balanced Scorecard concept by Kaplan and Norton (1996), which emphasizes the importance of integrating internal process perspectives, organizational learning, and public service in improving organizational performance. The results of this study are also in line with Ulfah's (2023) research, which explains that innovation The ETLE policy is part of the digital transformation of public services that can increase public trust in the police institution if supported by effective and collaborative organizational governance.

CONCLUSION

Based on the results of research on the Implementation of Electronic Traffic Law Enforcement (ETLE) in Improving Police Performance and Public Compliance at the Traffic Directorate of the South Sulawesi Regional Police, it can be concluded that the implementation of the ETLE system is a form of digital innovation in traffic law enforcement management that is able to provide significant changes to the governance of police services. ETLE has been running effectively in supporting the process of monitoring and enforcing traffic violations through the use of information technology,

surveillance cameras, and the integration of motor vehicle data. This system is able to increase transparency, accountability, and objectivity in the law enforcement process because every violation is based on verifiable electronic evidence.

From an organizational performance perspective, the implementation of ETLE has positively contributed to improving the effectiveness and professionalism of the South Sulawesi Regional Police Traffic Directorate. The use of ETLE technology helps accelerate the process of identifying violations, reduces the workload of officers in the field, and minimizes the potential for direct interactions that could lead to irregularities in law enforcement. Thus, ETLE serves not only as a supervisory instrument but also as a mechanism for strengthening more modern, public-service-oriented police governance.

The implementation of ETLE also plays a role in increasing public compliance with traffic regulations. The presence of a technology-based monitoring system provides a preventive and educational effect, encouraging the public to be more disciplined in driving. Behavioral changes are evident in increased awareness of using safety equipment, obeying traffic signs, and avoiding actions that could potentially cause accidents. However, the optimization of ETLE still requires strengthening through increased outreach, expanding surveillance camera locations, and improving public digital literacy so that the system's benefits can be more widely felt.

REFERENCES

- Adhithia, S., Nurdin, N., & Rajab, R. (2025). Tantangan implementasi kebijakan ETLE pada Korps Lalu Lintas Republik Indonesia. *Journal of Public Policy and Applied Administration*, 7(1), 27–56. <https://doi.org/10.32834/jplan.v7i1.871>
- Armstrong, M. (2014). *Armstrong's handbook of human resource management practice*. Kogan Page.
- Creswell, J. W., & Creswell, J. D. (2023). *Research design: Qualitative, quantitative, and mixed methods approach* (6th ed.). SAGE Publications.
- Dessler, G. (2017). *Human resource management* (15th ed.). Pearson Education.
- Kaplan, R. S., & Norton, D. P. (1996). *The balanced scorecard: Translating strategy into action*. Harvard Business School Press.
- Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. Sage Publications.
- Mayastinasari, V., & Lufpi, B. (2022). Efektivitas *Electronic Traffic Law Enforcement*. *Jurnal Ilmu Kepolisian*, 16(1).
- Miles, M. B., Huberman, A. M., & Saldaña, J. (2023). *Qualitative data analysis: A methods sourcebook* (4th ed.). SAGE Publications.
- Moleong, L. J. (2018). *Metodologi penelitian kualitatif* (Edisi Revisi). PT Remaja Rosdakarya.
- Rizki, M. T. S. A. (2024). Implementasi *Electronic Traffic Law Enforcement* di Kota Serang. *Scientica: Jurnal Ilmiah Sains dan Teknologi*, 2(3).
- Robbins, S. P., & Judge, T. A. (2013). *Organizational behavior* (15th ed.). Pearson Education.
- Sarkosi, E. (2024). Efektifitas ETLE dalam menumbuhkan kepatuhan hukum masyarakat Jawa Timur dalam berlalu lintas. *Jurnal Inovasi Ilmu*, 4(2).
- Soekanto, S. (2007). *Kepatuhan hukum dan kepatuhan hukum*. Rajawali Press.
- Sualang, G. N. (2025). Tinjauan yuridis terhadap implementasi ETLE. *Lex Crimen*, 13(4).
- Tiessa, A. N., Lesmana, S. J., & Indayatun, R. (2025). Analisis efektivitas *Electronic Traffic Law Enforcement* (ETLE) dalam sistem penegakan hukum di Kabupaten Tangerang. *SOSCIED*, 8(1), 5–14.

- Ulfah, S. M. (2023). Inovasi kebijakan sistem *Electronic Traffic Law Enforcement* (ETLE) dalam mewujudkan smart city Kota Palangka Raya. *Journal of Welfare, Community and Communication*, 2(1).
- Yin, R. K. (2023). *Case study research and applications: Design and methods* (7th ed.). SAGE Publications.