



# A Study of E-Ticket Implementation for Goods Transportation

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## Abstract

**Purpose:** This study examines the implementation of the e-ticketing system for goods transportation at weighbridges in Indonesia, aiming to improve speed, transparency, and compliance in ticketing procedures.

**Research Methodology:** A qualitative descriptive approach was applied, including field observations at UPPKB Balongandu and Losarang, interviews with ten truck drivers and several officers, and review of secondary documents. The data were analyzed to evaluate operational efficiency, procedural compliance, and system limitations.

**Results:** The e-ticketing system reduces interaction between violators and officers, accelerates ticket processing, and enhances transparency. However, operational constraints, limited digital literacy among drivers, network issues, and resource limitations prevent fully optimal implementation. Integration with KIR/Test Book records remains incomplete, and fines collection faces delays in certain areas.

**Conclusions:** E-ticketing improves administrative efficiency and transparency, providing practical and rapid alternatives to conventional manual ticketing. Yet, optimization requires expanded infrastructure, improved network access, enhanced human resource capacity, and more intensive driver education.

**Limitations:** The study is limited to two UPPKB locations in West Java and relies on qualitative observations and interviews, restricting generalizability to all Indonesian weighbridges.

**Contributions:** The study offers empirical insights on e-ticketing implementation for freight transportation, highlighting operational benefits, challenges, and recommendations for policy and technological improvements.

**Keywords:** *E-Ticketing, Transportation Goods, UPPKB, Ticketing Transparency, Weighbridge Compliance*

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## 1. Introduction

Electronic ticketing, commonly referred to as E-Tilang, represents a transformative shift in traffic enforcement and administrative management by digitizing the ticketing process (Lesmini et al., 2022; Luhukay et al., 2023). The system aims to enhance operational efficiency, minimize procedural errors, increase transparency, and improve accountability in traffic and goods transportation management (Nawangari et al., 2020; Pane & Amrullah, 2023). Traditional manual ticketing systems have long been associated with inefficiencies, procedural delays, and opportunities for extortion or misconduct by officers, particularly in freight transport contexts where large volumes of goods and vehicles are handled

daily (Achir et al., 2022; Saputra et al., 2022). By digitizing ticket issuance and integrating administrative verification, E-Tilang reduces direct interaction between officers and transporters, streamlining operations and facilitating adherence to regulatory procedures (Dahlan & Jalil, 2023; Irfan, 2023; Keke et al., 2021).

In Indonesia, E-Tilang has been implemented for goods transportation since March 2018. At UPPKB (*Unit Pelaksana Penimbangan Kendaraan Bermotor/Motor Vehicle Weighing Implementation Unit*), the system enables faster processing of traffic tickets, allowing both officers and transporters to save time, while also providing a transparent record of violations and compliance actions (Bridgelall, 2022; Pattiasina et al., 2023; Setyawati & Aristiyanto, 2021). The system is intended to standardize ticketing practices, reduce subjectivity in enforcement, and provide transporters with clear guidance and follow-up on their cases (Hu et al., 2017; Kuncoro & Harahap, 2021). Officers benefit from real-time monitoring, efficient reporting, and reduced administrative burdens, while transporters gain clarity regarding compliance obligations, procedural steps, and fines, improving trust and predictability in traffic governance (Heriyanto, 2021; Suryana, 2021; Wirna et al., 2023).

Despite its advantages, the E-Tilang system faces operational challenges that limit its full effectiveness. Drivers' limited familiarity with digital applications, unstable internet connectivity at certain weighbridges, incomplete integration with KIR/Test Book records, and occasional infrastructure constraints hinder seamless operation (Agusinta et al., 2021; Sutarno et al., 2022). Furthermore, gaps remain in public awareness and training for transporters, which can delay compliance and affect procedural outcomes. These challenges underscore the need for comprehensive evaluation and continuous improvement to ensure that E-Tilang delivers its intended benefits across Indonesia's diverse logistical and transport networks (Ramadhan & Iswandi, 2022; Tetuko & Harjiyatni, 2022; Yuliantoro & Sulchan, 2021).

This study focuses on the implementation of E-Tilang at two critical UPPKB locations in West Java—Balonggandu and Losarang—representing typical operational units for conventional port and freight handling. By examining both field operations and user experiences, the research evaluates system performance, procedural compliance, and the practical impact of digital ticketing on freight transportation efficiency and governance. The study aims to identify operational strengths, reveal constraints, and propose policy and technological recommendations to optimize E-Tilang functionality. Such insights are essential not only for improving administrative efficiency and compliance but also for advancing broader objectives of digital governance, transparency, and professionalization in Indonesia's transport sector.

## 2. Literature Review

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### 2.1 Timeliness

To monitor and secure road traffic and transportation infrastructure and facilities, weighing equipment is used to measure motorized vehicles so that the weight of the vehicle and its load can be determined ("Government Regulation Number 43 of 1993", 1993). The weighing equipment is in the form of a weighbridge. Its existence is a policy to protect against road damage due to overloading and ensure traffic safety (Fadhilah et al., 2022; Wulandari et al., 2020). Permanently installed weighing equipment is equipped with facility support and operated by the weighing implementer. Supporting facilities include the following:

1. Building operational;
2. Field parking vehicle;
3. Facility road go out enter vehicle.
4. Warehouse storage goods
5. Field accumulation of goods:

6. Building building For the generator set:
7. Fence;
8. Signs for Meaning operation.

The implementation of weighing heavy equipment, vehicles, and their loads (PP No. 43 of 1993) includes the following:

1. Determination location;
2. Procurement, installation, and/or weighing
3. Operation;
4. Maintenance.

Weighbridges are generally located on national roads as infrastructure for the movement of goods vehicles with relatively large loads. Based on “Decree of the Minister of Transportation Number 5 of 1995” (1995), the determination of the location of the permanently installed weighing tool must pay attention to the following:

1. Plan general spatial ;
2. Network transportation road
3. Volume Then cross daily average for transporting goods (>150 vehicles/hr)
4. Smoothness current Then cross.
5. Class road;
6. Condition topography location.
7. Available land of at least 4000 m<sup>2</sup>;
8. Effectiveness of supervising heavy vehicles along with their loads.

Whereas the activity performed in bridge weigh covering is as follows:

1. Weighing heavy vehicles along with their loads;
2. Inspection dimensions of the vehicle:
3. Inspection letter vehicle test:
4. Inspection cargo, in which the cargo covers:
5. Goods general: vegetables, fish dry, etc.
6. Goods strategy: steel, cement, etc.
7. Basic necessities: rice, sugar, etc.

## **2.2 Function And Authority Bridge Weigh (UPPKB)**

Based on “Law Number 22 of 2009 concerning Road Traffic and Transportation” (2009) concerning the National Development Program, all provisions regarding weighbridges, including determining the location and management of weighbridges and determining the maximum load limit standard and heavy vehicle transportation goods, is provincial authority as an autonomous region (Arimbawa & Suryawan, 2022; Hasan, 2022b; Setyawati, 2022). The implementation of weighing at weighbridges is the responsibility of the Traffic and Road Transportation Service, which is operated by an Implementing Unit (Ardhianti et al., 2022). Technical Service concerning Excess Load Dispensation Permit Tariffs.

The functions and missions of weighbridges include the following:

1. Guard road from damage consequence burden load.
2. Monitoring vehicle transport goods and placement load
3. The data collection method was used, and then the cross method was used for process planning and control transportation.

### **2.3 Evaluation, Monitoring And Performance Weighbridge (UPPKB)**

Weighbridge management recognizes a sequence of logical implementations that describes management actions to achieve predetermined goals (Hasan, 2022a; Hendiyana et al., 2022; Wulandari et al., 2020). In general, this process includes the following:

1. Planning  
It is an initial thought or idea about something planned before the activity is carried out. The benefit of the planning function above is as a monitoring tool, as well as a control activity or guidelines for implementing activities, and a means for selecting and determining the necessary activities.
2. Organizing  
Actions are taken to unite a collection of human activities that have their respective jobs so that they relate to each other in certain ways and interact with their environment to support the efficient achievement of goals/targets. The benefit of the organizational function is that it is a guideline for implementing functions where distribution tasks as well as connections with insufficient responsibility and authority are clearly visible.
3. Actuating  
This is in the form of actions to align all members of the organization in implementation activities, so that all members of the organization can work together to achieve common goals. Benefit from function implementation is the creation of a balance of duties, rights, and obligations of each part of the organization.
4. Controlling  
In the sense of guiding or monitoring, reviewing, and if necessary, making corrections so that results appropriate activities with which has determined. Therefore, in this function, the results of activity implementation are always measured and compared with the plan. The functions of this supervision include the following:
  - (a) Determination of implementation standards
  - (b) Determination of size implementation
  - (c) Measurement implementation is real and compared with the standard that has been determined
  - (d) Evaluation deviation which occurs

Retrieval action corrects which are estimated when implementation deviates from the standard.

## **3. Methodology**

The implementation of E-Ticketing For freight transport in weighbridges/UPPKB was conducted in several stages. The preparatory work includes identifying data needs, problems, and literature studies. will be used to conduct the analysis and discussion to obtain the results and conclusions (Sugiyono, 2010). The method used in this study was field observation. The research objects are weighbridges/UPPKB

located in West Java (in this case, UPPKB Balonggandu and UPPKB Losarang). UPPKB Balonggandu and UPPKB Losarang are located on the national road (Pantura route), a strategic route on the island of Java. This route is one of the loading and unloading points for goods originating from or being sent to Java. Many trucks with license plates from outside the city and Java pass through this route. The data required in this study are primary and secondary data. Primary data were obtained through interviews with sources (officers) and informants (truck drivers), as well as through observation methods. Interviews were conducted with ten drivers and several field officers. Observations were conducted at UPPKB Balonggandu and UPPKB Losarang to directly understand the processes occurring in the field. Secondary data were obtained from document reviews and references related to this study. The data analysis process began with data collection, data processing, results, conclusions, and recommendations (Gay & Diehl, 1992; Nazir, 2005).

## 4. Results and Discussion

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### 4.1 UPPKB West Java Region

A weighbridge or UPPKB (*Unit Pelaksana Penimbangan Kendaraan Bermotor/Motor Vehicle Weighing Implementation Unit*) is a unit under the Ministry of Transportation of the Republic of Indonesia that is tasked with supervision, recording, and taking action. for transporting goods, which operate on section roads as efforts to guard highway infrastructure and traffic safety on highways (“Regulation of the Minister of Transportation of the Republic of Indonesia Number 134 of 2015”, 2015) is a government policy to protect roads from damage due to overloading and traffic safety. These functions include loading procedures, type of cargo being transported, destination, weight of the goods, type, dimensions, and type of vehicle, and roadworthiness of the vehicle (Purnomo, 2023; Wulandari et al., 2020).

Type vehicle which done weighing is all transport goods except transport Containers, fuel and gas tanks, hazardous goods transportation, and heavy equipment transportation (Abbasi et al., 2017; Tanackov et al., 2018). Weighbridges or UPPKB are installed on national roads and strategic national roads, such as industrial areas, production centers, ports, toll roads, and other strategic areas. In accordance (“Law Number 22 of 2009 concerning Road Traffic and Transportation”, 2009) about Traffic and Road Transport., chapter 169, paragraph (1) Drivers and/or public goods transport companies are required to comply with the provisions regarding loading procedures, power transport, Vehicle, and dimensions, and class roads. Paragraph (2): For supervised fulfillment In accordance with the provisions referred to in paragraph (1), supervision of the cargo of goods transport is carried out. Paragraph (3): The supervision of the cargo of goods transport is carried out using weighing equipment. Paragraph (4): The weighing equipment referred to in paragraph (3) consists of: a weighing equipment that is installed permanently or a weighing equipment that can be moved. Based on Article 169, the types of goods transport violations that are subject to sanctions in the form of E-Tilang from the Directorate General of Land Transportation include:

1. Violation Document Vehicle and mismatch document travel/letter cargo with the type of goods transported (validity period of the Test Book, validity, and authenticity of the Proof of Passing the Test);
2. Violation excess power transport car goods or heavy cargo exceed 5% (overload) from vehicle carrying capacity as stated in the proof of passing the test;
3. Violation order method for loading goods.
4. Violation dimensions of the vehicle
5. Violation MST to class road; and

#### 6. Violation condition technical and worthy road.

Sanctions for transporting goods on the road as Chapter 307 jo Chapter 169, (“Law Number 22 of 2009 concerning Road Traffic and Transportation”, 2009) concerning Traffic and Road Transportation, are as follows: Chapter 307: Every person driving a Vehicle Motorized Transport General Goods Which Those does not comply with the provisions regarding loading procedures, carrying capacity, and vehicle dimensions as referred to in Article 169 paragraph (1) shall be punished with imprisonment for a maximum of 2 (two) months or a maximum fine of IDR 500,000.00 (five hundred thousand rupiah). Article 169:

1. Driver and/or Company Transport General mandatory items comply provision about loading procedures, carrying capacity, vehicle dimensions and road class (paragraph 1)
2. For supervise fulfillment to provision as intended on paragraph done supervision of cargo transport (paragraph 2)
3. Supervision of cargo transport goods is done using a tool weighing (paragraph 3).
4. Weighing equipment consists of a permanently installed weighing device or a weighing device that can be moved (verse 4).

To ensure that work is conducted according to the vision, mission, rules, and work program, control is required. form supervision, supervision, inspection, and audit, so that deviations can be detected early. Based on (“Law Number 22 of 2009 concerning Road Traffic and Transportation”, 2009), Article 169, paragraph (1), all goods transport vehicles (except transport chest packs, car tank material fuel oil, and/or material burn gas and heavy equipment, according to the (“Regulation of the Director General of Land Transportation Number SK.736/AJ.108/DRJD/2017”, 2017) must be weighed at the UPPKB.

In accordance with the provisions, the implementation of e-tickets in UPPKB is done non-stop for 24 hours. Implementation It is hoped that e-ticketing will not only minimize interaction between violators and officers in the field but also speed up the processing time from the initial ticketing process to the issuance of a fine and the collection of evidence demonstrating the completion of the e-ticketing process. Furthermore, the overloading should be reduced.

#### **4.2 Evaluation Weighing Transport Goods**

As has been described, all vehicle transport goods must be weighed. This weighing determines which violations are present and which are not. Freight vehicles found to be in violation, especially those carrying excess weight, will be fined. This ticketing process takes a few minutes, while the UPPKB area/parking area for ticketed vehicles/processing is available. process traffic tickets is not adequate. This result shows that the disproportionate number of vehicles entering the UPPKB results in long queues on the road leading to the UPPKB entrance. This significantly disrupts the traffic flow on these roads, potentially leading to accidents. Under these conditions, the vehicle weighing/e-ticketing process cannot be implemented for all violating vehicles because it cannot be implemented 24/7. Excess cargo moment This Not yet can be lowered because of the constraints between the other limitations of the weighing equipment and human resources.

Suggestion : Efforts are being made duration process weighing until with eitilang accelerated with expand parking area and weighing equipment and the addition of competent human resources.

#### **4.3 Evaluation Duration Time Process E- Tickets**

Although offenders who pay fines do not need to be present at the trial, the nominal/real fine decided by the prosecutor’s office requires a process of 4 (four) days. The remaining fine (the difference between the maximum fine and the nominal fine resulting from the prosecutor’s decision) can be collected at BRI

Bank by presenting a Certificate from the Prosecutor's office in the area where the offender is located. do violation. Without proof of the letter from the Prosecutor's Office, this remainder fine cannot be taken. If the Offender is domiciled far from the area of the Prosecutor's Office, which is concerned with committing an offense, obtaining a statement from the Prosecutor's Office as proof of collecting the remaining fine will be difficult or become an obstacle for the offender.

Suggestion: We continue to discuss with the Prosecutor's Office so that the verdict can be processed more quickly, and the certificate can be issued. The proof taking remainder fine No must be taken in the prosecutor's office crime scene. In addition, the number of banks that can be used to pay fines or collect the remaining fines must be increased.

#### ***4.4 Evaluation of Violators Who Paid and Did Not Pay Fines***

As evidence of the violation, the KIR/Test Book of the vehicle belonging to the driver who violated the law was confiscated. The KIR/Test Book will be returned after the offender pays the maximum fine. Rp. 500,000,- Based on the information obtained from the survey in UPPKB Balonggandu and Losarang, only 10% of violators paid the maximum fine and had their KIR Book/Test Book confiscated, while 90% of violating drivers did not pay the fine and did not collect the KIR Book/Test Book. A large percentage of violators do not pay the fine and do not collect the KIR Book/Test Book Test, which is confiscated by the police. According to the information, the offender can publish Book KIR/Book Test that is new just by paying Rp. 75,000.

Suggestion : The issuance of the KIR Book/Test Book should be through careful verification and submitted with supporting data and evidence of e-ticket violations, if necessary, at a large cost, so that it is not misused to escape fines for e-ticket violations of goods transportation.

## **5. Conclusions**

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The e-ticketing system replaces manual ticketing at UPPKB, providing faster, more practical, and transparent processing for goods transport violations. While the system aims to reduce extortion and facilitate efficient ticketing for over-dimensioned and overloaded vehicles, its effectiveness is limited by early-stage implementation and the digital literacy of many freight drivers. Key benefits of the system include enhanced transparency through reporting mechanisms, public empowerment by informing citizens about traffic regulations and penalties, increased responsiveness of authorities to complaints, and consistent enforcement of fines ensuring fairness and justice for all violators.

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## **Author Contributions**

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FH contributed to the conceptualization of the study, development of the research methodology, data collection, formal analysis, literature review, validation, writing of the original draft, supervision, and project administration. FH also provided expert consultation, interpreted the data, and reviewed technical aspects, ensuring the overall quality and coherence of the manuscript.

## **Conflicts of Interest**

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The authors declare that there is no conflict of interest regarding the publication of this study. This research was conducted independently, and no financial or personal relationships influenced the results or interpretation of the findings.

## References

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- Abbasi, T., Ramyapriya, R., Tauseef, S. M., & Abbasi, S. A. (2017). Accidents occurring during transportation of hazardous substances and modeling of their consequences. *International Journal of Engineering, Science and Mathematics*, 6(8), 185–219.
- Achir, M. M., Suryawan, R. F., Maulina, E., & Tannady, H. (2022). Handling of incoming cargo to support smooth goods delivery: A review of four aspects. *Jurnal Transportasi, Logistik, Dan Aviasi*, 1(2), 96–105. <https://doi.org/10.52909/jtla.v1i2.62>
- Agusinta, L., Nugroho, A. E., Fachrial, P., & Suryawan, R. F. (2021). Assessment model of employee competence, ground support equipment effectiveness, and satisfaction on service quality. *Jurnal Transportasi, Logistik, dan Aviasi*, 1(1), 55–69. <https://doi.org/10.52909/jtla.v1i1.37>
- Ardhianti, M. P., Hermawan, M. A., & Suryawan, R. F. (2022). The impact of lifestyle and service quality on purchase decisions at jne express bekasi. *Jurnal Transportasi, Logistik, Dan Aviasi*, 1(2), 114–123. <https://doi.org/10.52909/jtla.v1i2.64>
- Arimbawa, I. K., & Suryawan, R. F. (2022). Role of operations officers in enhancing on-time delivery performance at lion parcel jakarta: A review. *Jurnal Transportasi, Logistik, dan Aviasi*, 2(1), 24–36. <https://doi.org/10.52909/jtla.v2i1.94>
- Bridgelall, R. (2022). Reducing risks by transporting dangerous cargo in drones. *Sustainability*, 14(20), 13044. <https://doi.org/10.3390/su142013044>
- Dahlan, M., & Jalil, H. (2023). Electronic traffic law enforcement policy within the framework of legal certainty. *PETITA*, 8, 275. <https://doi.org/10.22373/petita.v8i2.176>
- Decree of the minister of transportation number 5 of 1995. (1995).
- Fadhilah, F., Suryawan, R. F., Suryaningsih, L., & Lestari, L. (2022). Theoretical perspectives on warehouse operations: A review of four key aspects. *Jurnal Transportasi, Logistik, Dan Aviasi*, 1(2), 106–113. <https://doi.org/10.52909/jtla.v1i2.63>
- Gay, L. R., & Diehl, P. L. (1992). *Research methods for business and management*. MacMillan Publishing Company.
- Government regulation number 43 of 1993. (1993).
- Hasan, H. (2022a). Ethics work in increase performance employees in the aviation industry. *Jurnal Transportasi, Logistik, dan Aviasi*, 2(1), 55–62. <https://doi.org/10.52909/jtla.v2i1.99>
- Hasan, H. (2022b). Green human resource management for corporate sustainability in the aviation industry. *Jurnal Transportasi, Logistik, dan Aviasi*, 2(1), 14–23. <https://doi.org/10.52909/jtla.v2i1.91>
- Hendiyana, A., Endah, D., Immamah, E., & Nurhayati, N. (2022). Analysis of malaysia airlines check-in service process at soekarno–hatta international airport during covid-19 pandemic. *Jurnal Transportasi, Logistik, dan Aviasi*, 2(1), 37–54. <https://doi.org/10.52909/jtla.v2i1.98>
- Heriyanto, D. (2021). The impact of service quality and compensation on crew satisfaction in manning companies. *Jurnal Transportasi, Logistik, dan Aviasi*, 1(1), 31–41. <https://doi.org/10.52909/jtla.v1i1.35>
- Hu, M., Huang, W., Cai, J., & Chen, J. (2017). The evaluation on liquefied natural gas truck promotion in shenzhen freight. *Advances in Mechanical Engineering*, 9(6), 1687814017705065. <https://doi.org/10.1177/1687814017705065>
- Irfan, B. (2023). Electronic governance in the implementation of electronic traffic law enforcement (etle) in the city of makassar. *KnE Social Sciences*, 443–452. <https://doi.org/10.18502/kss.v8i17.14139>
- Keke, Y., Tobing, N. G. L., & Tanjung, I. (2021). The effect of occupational safety and health on employee performance at pt. angkasa kargo. *Jurnal Transportasi, Logistik, dan Aviasi*, 1(1), 42–54. <https://doi.org/10.52909/jtla.v1i1.36>

- Kuncoro, H., & Harahap, V. (2021). Effect of electronic flight bag usage and safety culture on flight safety performance at pt. garuda indonesia. *Jurnal Transportasi, Logistik, dan Aviasi*, 1(1), 18–30. <https://doi.org/10.52909/jtla.v1i1.34>
- Law number 22 of 2009 concerning road traffic and transportation. (2009).
- Lesmini, L., Najoran, D. J., Ruslani, M. N., Firdaus, M. I., Susanto, P. C., & Suryawan, R. F. (2022). Service strategies of shipping agencies in managing ship arrivals and departures. *Jurnal Transportasi, Logistik, Dan Aviasi*, 1(2), 70–84. <https://doi.org/10.52909/jtla.v1i2.60>
- Luhukay, R. S., Luthfan, G. F. F., & Chrisjanto, E. (2023). The problems of e-ticketing from legal perspective. *Widya Pranata Hukum: Jurnal Kajian dan Penelitian Hukum*, 5(2), 166–179. <https://doi.org/10.37631/widyapranata.v5i2.1172>
- Nawang Sari, E. R., Prasetya, K., Arifin, M., Khothimah, K., & Ardhana, R. (2020). The level of public awareness of the application of the electronic ticket system in surabaya. *Jurnal Administrasi Publik (Public Administration Journal)*, 10(2), 156–163. <https://doi.org/10.31289/jap.v10i2.3531>
- Nazir, M. (2005). *Research methodology*. Ghalia Indonesia.
- Pane, S. F., & Amrullah, M. S. (2023). Systematic literature review: Analisa sentimen masyarakat terhadap penerapan peraturan etle. *Journal of Applied Computer Science and Technology*, 4(1), 65–74. <https://doi.org/10.52158/jacost.v4i1.493>
- Pattiasina, F., Renwarin, W. A., Umar, N. F., Fadila, F., & Ketyaru, E. B. (2023). Text clustering analysis for public sentiment based on twitter opinions on e-tilang. *VARIANCE: Journal of Statistics and Its Applications*, 5(1), 89–98. <https://doi.org/10.30598/variancevol5iss1page89-98>
- Purnomo, N. H. (2023). Evaluasi penggunaan sistem jembatan timbang online (jto) terintegrasi dengan metode pieces framework. *Jurnal Algoritma*, 20(1), 87–98. <https://doi.org/10.33364/algoritma/v.20-1.1255>
- Ramadhan, R. R., & Iswandi, D. (2022). Implementation of e-tilang in the gatur post of lintas ledeng in developing the legal awareness of citizens in bandung city. *Jurnal Civicus*, 20(2), 1–10. <https://doi.org/10.17509/civicus.v20i2.45473>
- Regulation of the director general of land transportation number sk.736/aj.108/drjd/2017. (2017).
- Regulation of the minister of transportation of the republic of indonesia number 134 of 2015. (2015).
- Saputra, M. A., Suryawan, R. F., & Parmenas, N. H. (2022). Air cargo import service model: A review of four aspects. *Jurnal Transportasi, Logistik, Dan Aviasi*, 1(2), 85–95. <https://doi.org/10.52909/jtla.v1i2.61>
- Setyawati, A. (2022). Analysis of heavy load demolition and its impact on operational efficiency. *Jurnal Transportasi, Logistik, dan Aviasi*, 2(1), 1–13. <https://doi.org/10.52909/jtla.v2i1.90>
- Setyawati, A., & Aristiyanto, F. K. (2021). Improving discipline through apron movement control (amc) at pt angkasa pura i adi soemarmo airport. *Jurnal Transportasi, Logistik, dan Aviasi*, 1(1), 1–17. <https://doi.org/10.52909/jtla.v1i1.33>
- Sugiyono. (2010). *Educational study methods*. Alfabeta.
- Suryana, C. (2021). Electronic ticketing implementation (e-ticketing) to traffic violations in the banyumas regency. *UMPurwokerto Law Review*, 2(1), 69–75. <https://doi.org/10.30595/umplr.v2i1.9546>
- Sutarno, S., Putriana, L., & Miranda, A. (2022). The influence of implementation of electronic tickets, policy issuing permissions driving and discipline against traffic violations. *International Journal of Economics and Management Research*, 1(2), 64–77. <https://doi.org/10.55606/ijemr.v1i2.20>
- Tanackov, I., Janković, Z., Sremac, S., Miličić, M., Vasiljević, M., Mihaljev-Martinov, J., & Škiljaica, I. (2018). Risk distribution of dangerous goods in logistics subsystems. *Journal of Loss Prevention in the Process Industries*, 54, 373–383. <https://doi.org/10.1016/j.jlp.2018.03.013>
- Tetuko, M., & Harjiyatni, F. R. (2022). Penerapan electronic traffic law enforcement (etle) dalam penindakan pelanggaran lalu lintas (studi di wilayah hukum polda diy). *Kajian Hasil Penelitian Hukum*, 4(2), 884–895. <https://doi.org/10.37159/jmih.v4i2.1743>

- Wirna, I. N., Paraniti, A. S. P., & Pidada, I. B. A. (2023). Implementation of e-tickets in the prosecution of traffic violations in denpasar city (a study of the ticket hearing process at the denpasar district court). *Sharia Oikonomia Law Journal*, 1(4), 221–240. <https://doi.org/10.55849/solj.v1i4.604>
- Wulandari, A., Sumardi, H. R., & Anwar, S. (2020). Pengaruh disiplin kerja dan komunikasi terhadap kinerja pegawai satuan pelayanan uppkb losarang bptd wilayah ix provinsi jawa barat. *Jurnal Investasi*, 6(2), 103–109. <https://doi.org/10.31943/investasi.v6i2.84>
- Yuliantoro, Y., & Sulchan, A. (2021). The effectiveness against traffic violations with electronic traffic law enforcement (etle). *Law Development Journal*, 3(4), 736–742. <https://doi.org/10.30659/ldj.3.4.736-742>