



The Impact of Digital Transformation on Traffic Function (LANTAS) for the Development of the Banyuwangi Police Institution

Rico Darmawan¹, Noel Morado Simatupang¹, Fajar Islam^{1*}, Syalsabela Wahyu Kurnia²

¹Akademi Penerbang Indonesia Banyuwangi, Indonesia

²Polresta Banyuwangi, Indonesia

Received: January 31, 2025

Revised: January 5, 2026

Accepted: January 30,
2026

Online: March 31, 2026

Abstract

Digital transformation has become an urgent need in various sectors, including within the Police Institution. In the current digital era, new challenges have emerged regarding the technical function of the Police, namely the traffic function, such as handling increasingly complex traffic order violations and adapting to the public's still limited understanding of information about public services for road users. This research aims to identify and analyze the impact of digital transformation on the technical function of the police, thereby increasing traffic operational efficiency and community satisfaction in Banyuwangi, and improving the performance of the Police Institution in Banyuwangi. The research was conducted using descriptive qualitative methods, where data were collected through in-depth interviews with members of the Police and road users in the field. It is hoped that a good understanding of the changes that occur due to the adoption of technology in traffic services can be obtained. The results of the research show that digital transformation has had a significant positive impact on operational functions, including the implementation of e-ticketing with CCTV-based surveillance cameras to improve traffic management. Interaction between the police and the public has become more open thanks to social media platforms used for two-way communication. The conclusion of this research confirms that digital transformation is not just a technological trend but a necessity to improve the quality of public services.

Keywords: *Banyuwangi Police, Digital Transformation, Public Services, Traffic*

INTRODUCTION

The development of digital technology (Yunaningsih et al., 2021) in the modern era has brought rapid changes across various aspects of life, facilitating human work, particularly in law enforcement and traffic management. In Indonesia, digital transformation (Sudrajad et al., 2023) has begun to be implemented across various technical functions of the Police to provide easier public access to Police services, particularly in the field of Traffic (LANTAS). The main duties of the Indonesian National Police (POLRI) (Yulianti & Asmara, 2023) are regulated in the Republic of Indonesia Law Number 2 of 2002 concerning the Indonesian National Police in Article 13, which states the main duties of the Indonesian National Police, among others: (a) Maintaining public security and order; (b) Enforcing the law; and (c) Providing protection, guidance, and service to the community.

To fulfill its duties and responsibilities (Sinollah et al., 2019), the Indonesian National Police (POLRI) makes many efforts to maintain security and order and prevent undesirable events. Therefore, the Police Institution also uses technology that has developed significantly in recent times, namely digital technology, to improve the efficiency and effectiveness of its services. Alongside the times, the Police Institution has developed digital services (Aprillia, 2020) to enhance efficiency and transparency in traffic management and public services. In providing public services (Ikhwan et al., 2020), the implementation of digital technology in traffic functions is evident in the use of the ETLE (Electronic Traffic Law Enforcement) system and e-ticketing to manage traffic

Copyright Holder:

© Rico, Noel, Fajar & Syalsabela. (2026)
Corresponding author's email: islamfajar83@gmail.com

This Article is Licensed Under:



violators.

As the legal basis for implementing this system (Sari, 2024), the government has enacted Government Regulation No. 80 of 2012 concerning Procedures for the Inspection of Motor Vehicles on the Road and the Enforcement of Traffic Violations and Road Transport. This regulation provides a legal basis for traffic monitoring using technology such as CCTV and other electronic systems (Fachrurazi et al., 2023), as stated in Government Regulation No. 80 of 2012 Article 28 on Enforcement of Violations with Electronic Recording Evidence, which allows for the enforcement of violations to be carried out without direct interaction between officers and violators. This is expected to reduce the potential for deviations, improve the accuracy of enforcement actions, and expedite the resolution of traffic violations through the e-ticketing system (Muhammad, 2019).

Banyuwangi Regency, as an area that plays an important role in the distribution route and connection between the islands of Java and Bali, is experiencing an increase in traffic volume in line with the rapid development of the tourism and economic sectors. This strategic position demands a more modern and efficient traffic system (Junaidi, 2021) to manage vehicle flow, reduce congestion, and maintain order and safety on the roads. With the implementation of digital transformation (Tulungen et al., 2022) in the field of Traffic, it is hoped that the Police Institution in Banyuwangi can utilize technology to optimize traffic management functions and improve the quality of service to the community.

However, the implementation of digital technology (Sudiantini et al., 2023) in the Police Institution in Banyuwangi also faces challenges, such as infrastructure readiness, the limited human resources capable of operating new technology, and the challenge for traffic users in adapting to modern changes with the old traditional system. Therefore, this research is important for understanding the impact of digital transformation (Fadillah et al., 2023) on traffic functions in Banyuwangi and on the development of the Police Institution in Banyuwangi.

Digital transformation has permeated almost every aspect of life, including the traffic law enforcement sector. In Indonesia, the implementation of digital technology, such as the Electronic Traffic Law Enforcement (ETLE), has become a strategic step to enhance the effectiveness, efficiency, and transparency in handling traffic violations. One of the regions implementing this system is Banyuwangi Regency, which has begun adopting ETLE technology to enhance road user compliance and expedite enforcement.

Several previous studies have highlighted the implementation of the ETLE system in major cities such as Jakarta and Surabaya, which have proven capable of reducing traffic violations and increasing legal compliance (Nugroho, 2022). However, there is still a research gap regarding the implementation of ETLE in non-metropolitan areas such as Banyuwangi, particularly regarding the effectiveness of this system in improving officers' operational efficiency, changing road users' behavior, and the challenges of technology adoption by the community and officers.

Furthermore, most research continues to focus on the technical and administrative aspects of ETLE. At the same time, the assessment of its impact on the quality of public services, community acceptance, and policy effectiveness has not been thoroughly discussed (Tamamy, 2023). Moreover, there have been few studies examining the perceptions of police officers or road users towards this transformation, even though user perceptions and support are key to the long-term success of implementation.

Thus, this research aims to fill that gap by evaluating the implementation of digital transformation in traffic law enforcement in Banyuwangi from policy, operational efficiency, and public perception perspectives. Research Objective:

1. Assessing the impact of the implementation of the ETLE system on the efficiency of traffic law enforcement in Banyuwangi Regency;
2. Analyzing the perceptions of the public and law enforcement officials towards the

- implementation of digital systems in traffic law enforcement;
3. Identifying challenges and obstacles in the implementation of digital transformation at the regional level;
 4. Providing policy recommendations for the optimization of the implementation of a digital-based law enforcement system in non-metropolitan areas.

Research Question:

1. What is the impact of the implementation of the ETLE system on the efficiency of traffic law enforcement in Banyuwangi?
2. What is the perception of the public and law enforcement regarding this digital law enforcement system?
3. What are the main challenges faced in the implementation of the ETLE system in areas like Banyuwangi?
4. What recommendations can be given to improve the effectiveness of implementing a digital law enforcement system in non-metropolitan areas?

This research also aims to identify the extent to which digitalization ([Ritonga et al., 2023](#)) can enhance the effectiveness of traffic management, minimize violations, and improve the quality of service to the community. With this, the results of this research are expected to contribute to the Police Institution in Banyuwangi's efforts to utilize digital technology ([Wahyudi et al., 2023](#)), and it is hoped that they can serve as a basis for consideration by the Police Institution in Banyuwangi in the future.

LITERATURE REVIEW

Digital Transformation

Digital transformation, according to [Siregar et al. \(2024\)](#), refers to the application of digital technology to overhaul service processes and improve service efficiency and quality. In the context of traffic, digital transformation, according to [Sulistiyo and Shihab \(2023\)](#), is implemented through systems such as Electronic Traffic Law Enforcement (ETLE), which enables electronic-based law enforcement. This technology helps traffic police monitor more efficiently. The implementation of ETLE allows the law enforcement process to become faster and more transparent. Moreover, this digitization not only affects how the Police Institution operates but also changes the pattern of interaction with the community. Technologies such as electronic ticketing systems and the Internet of Things (IoT) enable real-time traffic monitoring and enhance road user safety.

Technical Functions of the Police

The technical functions of the police encompass knowledge, skills, and expertise in areas required by officers in carrying out operational duties. In the context of traffic law enforcement, this task involves the use of modern technology, such as Automatic Number Plate Recognition (ANPR), and the ability to manage and supervise technology-based traffic systems. Technical competence is very important because it directly affects the effectiveness of task execution, including traffic monitoring and control. According to existing studies, one of the main challenges in improving technical competence ([Salsabila, 2018](#)) is motivating personnel to attend training and aligning task assignments to enhance their skills in using increasingly advanced digital technology.

Organizational Change

Organizational change ([Sabadina, 2020](#)) is a process in which an organization adjusts to address external and internal challenges, improving efficiency, effectiveness, and competitiveness. The theory of organizational change emphasizes adaptation, innovation, and transformation of an organization's structure, culture, and work processes. In the context of the Police and traffic

services, organizational change is crucial to keep pace with the development of digital technology, such as e-ticketing and ETLE (Electronic Traffic Law Enforcement).

According to [Estebal et al. \(2024\)](#), organizational change consists of three main stages:

1. Unfreeze: The stage where the organization realizes the need for change, and the old system begins to be abandoned.
2. Change: The process of implementing changes adopted through new technology, structure, or procedures.
3. Refreeze: The process of stabilizing changes, where the new system becomes part of the organization's routine.

In the context of digital transformation in traffic ([Cruz et al., 2024](#)), the Police Institution needs to undergo these three stages to adapt to technological developments and improve the efficiency of public services. In the rapidly evolving fields of technology and information, such as Artificial Intelligence (AI) and the Internet, there has been a significant impact on the way people think and behave, including in public services. Therefore, organizational changes ([Ramilan et al., 2024](#)) within the Police environment must prioritize digitalization to meet the community's growing demand for fast, accurate, and efficient services.

Change Management

According to [Calilao et al. \(2024\)](#), change management is a systematic approach to managing organizational change so that the implementation of transformation runs smoothly. John Kotter's 8-Step Change Model (1996) provides practical guidance on how change can be managed:

1. Create a sense of urgency, building awareness of the importance of change through open dialogue to gain employee support;
2. Build a guiding team, form a leadership team from various departments to manage change and encourage collaboration;
3. Develop a vision and strategy, define a clear vision and strategic plan so that all employees understand the goals and steps of the change;
4. Communicate the vision, continue to communicate the vision of change, accept feedback, and address employee concerns;
5. Remove obstacles, identify and eliminate obstacles that hinder change, and encourage innovation and employee initiatives;

RESEARCH METHOD

Research Design

This research uses a descriptive qualitative method ([Rachman et al., 2024](#)). The method emphasizes analyzing the inductive thinking process in the dynamics of relationships among observed phenomena or events, and it consistently uses scientific logic. The qualitative research, according to [Islam et al. \(2024\)](#), used in this study aims to understand the impact of digital transformation on traffic functions in the development of the Police Institution in Banyuwangi.

The data obtained is primary, collected directly from informants, namely individuals who have the potential to provide the information needed by the researcher. At the same time, secondary data comes from documents, photos, or browsing that can be used to complement primary data.

This qualitative research aims to understand the impact of implementing digital technologies, such as ETLE (Electronic Traffic Law Enforcement) and e-ticketing, on traffic monitoring within the Police Institution in Banyuwangi. Using a descriptive qualitative approach, this research focuses on digital transformation and its impact on traffic technical functions within the Police Institution in Banyuwangi. The primary data were obtained through interviews with six

informants: one from the Head of the Turjawali Unit of the Banyuwangi Police Traffic Unit, one from the Banyuwangi Traffic Officer, two from car users, and two from motorcycle riders.

Secondary data in this study were obtained from relevant scientific sources, such as journals and news websites. Data collection began on September 17, 2024, via an internet survey to assess the effectiveness of digital services provided by the Police Institution in Banyuwangi, and open interviews were conducted to gain in-depth insights into the effectiveness of the Police Institution's digital transformation.

Research Subjects The research subjects are informants related to the conducted research. This research aims to understand the impact of implementing digital technology on the traffic of the Police Institution in Banyuwangi. The determination of informants is based on parameters that can reveal phenomena, thereby enabling data to be obtained. The criteria include:

1. Knowing the technical traffic function;
2. Knowing the duties and responsibilities of the technical traffic function;
3. Being directly involved as management or supervisor of the technical traffic function;
4. Having interaction with the technical traffic function;
5. Being involved in road traffic management.

Table 1. Demographic Table of Participation/Informants in the Research

Informants	Description
Informants 1	Mr. Iptu Dwi Wijayanto, S.H., as the Head of the Turjawali Unit of the Banyuwangi Police Traffic Unit
Informants 2	Mr. Aipda Hendro Ivan Wahyudi as the Ba Satlantas at Satlantas Polresta Banyuwangi
Informants 3	Mr. Hundory Muhamad, the Cadet Supervisor at the Indonesian Aviation Academy Banyuwangi, has been in Banyuwangi since 2016 and has served in that role since 2018. (Informants represent car users)
Informants 4	Mrs. Sinta Puji Anggraini is the Health Officer at the Indonesian Pilot Academy clinic in Banyuwangi. (Informants represent car users)
Informants 5	Mr. Muhammad Yusuf Alfian is an Air Traffic Control (ATC) at Blimbingsari Banyuwangi Airport. (Informants represent motorcycle riders)
Informants 6	Mr. Heri Purnomo, as the cleaning service officer at the Indonesian Aviation Academy Banyuwangi, is a native resident of Banyuwangi. (Informants represent motorcycle riders)

Based on the above parameters related to informants in this study, the informants include the Banyuwangi Police Institution, particularly in the field of traffic, and all motorcycle and car riders in the Banyuwangi Regency area who have used the digital system for traffic management. This research uses interviews with officers from the Banyuwangi Police Institution in the traffic sector and residents of Banyuwangi Regency who have received traffic services as informants who can provide relevant information. The subjects of the research consisted of six informants, including one from the Head of the Banyuwangi Traffic Police, one from the Banyuwangi Traffic Police, two from car users, and two from motorcycle riders.

Data Collection Technique

This research uses in-depth interviews as the main data collection technique. This interview aims to understand drivers' perspectives, impacts, and perceptions on the implementation of digital technology in traffic law enforcement by the Police Institution in Banyuwangi, particularly

regarding digital traffic systems such as ETLE (Electronic Traffic Law Enforcement) and e-Tilang. The interview was conducted in a semi-structured manner to allow for in-depth information from each informant and to create a flexible atmosphere that encouraged greater interaction regarding their experiences with the digital traffic system.

This data collection technique also involves field observations of the implementation of technology on the roads and of interactions between drivers and the technology-based law enforcement system to assess public enthusiasm for the system.

In this study, the sources or informants were selected based on their experiences with the digital technology-based traffic system. The perspectives of car drivers, motorcyclists, and the Police Institution in Banyuwangi who were interviewed are expected to provide different viewpoints on the efficiency, transparency, and their satisfaction with the implementation of technologies such as ETLE (Electronic Traffic Law Enforcement) and e-ticketing in traffic. Informants are expected to provide insights regarding:

1. Experience with the e-ticketing system. How does the use of this system expedite the handling of traffic violations compared to manual methods?
2. Challenges in the implementation of the digital system. The obstacles faced in accelerating the handling of traffic violations through digital technology.
3. Comparison of operational costs. Understanding the savings or changes in operational costs between manual systems and digital systems;
4. The impact of digital transformation on public satisfaction. Does digital service improve public satisfaction with information access and traffic violation resolution?
5. Ease of access to digital services. Do people find it easier to access digital traffic services, such as e-ticketing and online information?

FINDINGS AND DISCUSSION

Findings

The researcher will present the results of the informants' responses regarding their views on digital transformation and its implementation, as well as the challenges they face in implementing digital technology in the traffic function of Banyuwangi Regency. Based on the interview results from two sources, here are their answers to the questions posed:

Table 2. Presents The Results of the Interview Question 1
Covering The Aspect of Operational Efficiency

1. In your opinion, are there challenges faced in speeding up the handling of traffic violations through digital systems?
Mentioned that the main challenge is that the community has not changed the names of their vehicles, making the delivery of summons letters difficult. - Informant 1
Highlighted the public's confusion in distinguishing between e-Tilang and ETLE, as well as the limitations of the ETLE feature in capturing violations such as riding equipment or vehicles that do not meet standards, for example, makeshift exhausts. - Informant 2
Believes that the inconsistency in the implementation of e-Tilang in the field and the public's preference for the manual system pose the main challenges. Although this system has been implemented in several places, manual ticketing still occurs in some cases, making the process suboptimal. Another challenge is that the public is not yet accustomed to the digital system, so many still prefer the manual system. - Informant 3
Stated that the biggest challenge is the lack of socialization, so the public does not fully understand e-Tilang. According to him, the information provided is often limited to pamphlets

on the road, so many drivers do not know how to resolve their violations through the digital system. - Informant 4
Highlighted that the people of Banyuwangi have not fully developed in terms of understanding the digital system. Many people are not yet accustomed to using technology like e-Tilang, so its implementation is not yet fully optimal. He also added that there are still people who prefer the traditional way of dealing directly with the officers. - Informant 5
Mentioned that one of the challenges in implementing the digital system is the lack of public understanding regarding the technology. Many people are not yet accustomed to using digital services like e-Tilang, which slows down handling violations. According to him, there needs to be more intensive socialization so that the community can more easily adapt to the digital system. - Informant 6

Table 3. Provides the Interview Results from Question 2
Covering The Aspect of Operational Efficiency

2. In your opinion, does the use of the electronic ticketing system (e-Tilang) have the potential to expedite the handling of traffic violations?
Stated that e-Tilang accelerates the handling of violations, especially in areas far from officer surveillance. This increases public discipline, such as in the use of helmets, which indirectly reduces traffic accidents. - Informant 1
Mentioned that although ETLE captures violations such as using a phone while driving and helmet violations, some violations cannot be detected by ETLE, such as vehicles with exhausts that do not meet specifications. - Informant 2
Believes that although the e-Tilang concept is good, its implementation in the field still has several shortcomings. This process is supposed to expedite the handling of violations, but on the ground, many obstacles prevent the system from operating efficiently. One of them is the inconsistent implementation across various places, where manual tickets are still often used. - Informant 3
Feels that the e-Tilang system is not yet fully efficient because there are still manual ticketing implementations at several points. He explained that e-Tilang should indeed expedite the handling of violations, but its inconsistent implementation has prevented the system from achieving this goal optimally. - Informant 4
Said that although e-Tilang provides transparency in handling traffic violations, the resolution process is still slow. This is because offenders still have to go through a trial process, which takes time. He argues that if the trial process could be eliminated or expedited, e-Tilang would be much more efficient. - Informant 5
Stated that the implementation of e-Tilang has helped accelerate the enforcement of traffic violations. According to him, this process has become faster because there is no longer direct on-the-field interaction between officers and violators. The ticket can be issued immediately, and the violator can settle it online without meeting with the officer. - Informant 6

Table 4. Presents the Interview Results from Question 3
Covering The Aspect of Public Service Quality

3. Does digital transformation in traffic functions affect the level of public satisfaction with the services provided?
Stated that digital transformation, especially with the presence of ETLE, helps improve discipline, prevent potential misconduct, and enhance transparency. - Informant 1

<p>Provided feedback regarding the level of public satisfaction, mentioning that ETLE is very helpful in improving the efficiency of law enforcement. - Informant 2</p>
<p>Believes that digital transformation can enhance public satisfaction by reducing direct interactions with officers, which often become a source of complaints. However, he also mentioned that this requires more socialization so that the community can better understand and get used to the digital system. - Informant 3</p>
<p>Feels that the community has not fully experienced the benefits of e-Tilang due to minimal socialization and the continued presence of manual tickets. According to him, many people still do not understand how to use this system, so satisfaction has not increased significantly. - Informant 4</p>
<p>Stated that although digital technology has a positive impact, the community that has not yet received socialization still does not fully understand the benefits. He emphasized that further socialization is very important so that the community can feel the benefits of this digital system. - Informant 5</p>
<p>Feels that digital transformation increases public satisfaction because it facilitates access to services, such as renewing vehicle registration documents online. He mentioned that with the digital system, the public can resolve their matters more quickly and efficiently, without having to go to the police station. - Informant 6</p>

Table 5. Provides the Results of Question Number 4
Covering the Aspect of Public Service Quality

<p>4. To what extent do digital services facilitate the public in accessing information and resolving traffic-related matters?</p>
<p>Emphasized that digital services, especially the use of social media by the police, greatly assist the public in accessing traffic-related information. This also supports a more open image of the police. - Informant 1</p>
<p>Explained that the public can confirm through e-Tilang, and for those who are not tech-savvy, the police are ready to assist through direct contact. Thus, this system makes the process more efficient. - Informant 2</p>
<p>Mentioned that the e-Tilang service is very helpful in simplifying the legal process of traffic violations. He feels that the public can obtain the information they need and resolve matters related to violations more easily and quickly. - Informant 3</p>
<p>Stated that e-Tilang could make things easier for the community, but the implementation of this system needs to be maximized so that its function is more felt. He feels that many people are still not accustomed to this system, so its benefits have not been fully felt. - Informant 4</p>
<p>Also agrees that digital technology facilitates access to information, but noted that some payment processes still have to be done manually. He emphasized that for this system to be more effective, all processes must be done online. - Informant 5</p>
<p>Believes that digital services facilitate access to information and quickly resolve various traffic matters. He added that with the digital system, the public no longer needs to queue at the police station, making the process more efficient. - Informant 6</p>

Table 6. Presents the Results of the Interview for Question Number 5
Covering the Aspect of Public Service Quality

<p>5. Does digital transformation in traffic services provide easier access for the community?</p>

Stated that digital services, such as ETLE, are very helpful for the community in accessing information and resolving traffic matters. - Informant 1
Agrees that ETLE provides easy access for the community, especially for extending driver's licenses and paying taxes. - Informant 2
Stated that digital systems, such as e-Tilang, provide convenience in obtaining information and resolving traffic violation matters. He feels that the public can more easily access the available services if they are already accustomed to this digital system. - Informant 3
Stated that not all members of the community understand how to access digital services due to a lack of socialization. According to him, although this system is convenient, many people are still unfamiliar with it. - Informant 4
Acknowledged that the digital system provides convenience, but he mentioned that there are still people who do not understand how to use it. According to him, further socialization is needed so that more people can take advantage of this digital service. - Informant 5
Mentioned that the digital system provides easy access for the community, especially in terms of document renewal. According to him, the community can handle various matters more easily without having to go directly to the police station. - Informant 6

Table 7. Provides the Results of the Interview Question 6
Covering the Aspect of Public Service Quality

6. Are there any obstacles faced by the community in accessing digital traffic services, such as e-Tilang, online complaints, or traffic information?
Mentioned that the main obstacle is that the community has not fully understood digital services, but now there is a 1-1-0 service that makes it easier for the community to get quick responses regarding online complaint services. - Informant 1
Mentioned that the main obstacle is the community's unfamiliarity with using digital systems, especially those who do not understand the confirmation process through e-Tilang. - Informant 2
Stated that the lack of socialization and knowledge about the new system causes non-compliance among the community with the system. According to him, many people do not yet understand how to use the digital system, which often hinders the process. - Informant 3
Revealed that the lack of public understanding is the main obstacle to accessing digital services. He feels the community has not received enough information on how to use digital services such as e-Tilang. - Informant 4
Said that, from his experience, there were no obstacles to accessing digital services. However, some people encountered technical issues, such as having to repeat the process after submitting data or payment issues that still had to be done manually. It is hoped that this system can run more smoothly and that the payment process can be completed online to the fullest extent. - Informant 5
Mentioned that the community is already more accustomed to the internet, so there are no major obstacles in accessing digital services. He feels that if the community understands how to use digital services, then the system can run more smoothly. - Informant 6

Table 8. Presents the Results of Interview Question 7
Covering the Aspects of Supervision and Law Enforcement

7. To what extent does digital technology help in detecting violations that were previously difficult to address?
--

Mentioned that the ETLE technology allows vehicles captured by cameras to be immediately identified through the data system from East Java, so that every violation can be directly addressed. - Informant 1
Added that although ETLE helps catch some violations, such as mobile phone use and helmet violations, it cannot detect others, such as makeshift exhausts or vehicles that do not meet specifications. - Informant 2
Believes that CCTV has a wide coverage that can detect violations more effectively. He mentioned that with the presence of CCTV, violations that were previously difficult to address, such as the use of tinted windows on cars, can now be monitored more easily. - Informant 3
Stated that the implementation of digital technology does help monitor activities on the road. However, he still sees traffic users violating rules and feels that the implementation of digital technology is still not running effectively. - Informant 4
Mentioned that digital technology helps in monitoring traffic and taking action against any violations. - Informant 5
Stated that the implementation of CCTV as a traffic monitor is very helpful in detecting traffic violations, especially those that are difficult for officers to monitor. According to him, with this technology, previously undetected violations can now be easily captured by the camera. - Informant 6

Table 9. Provides the Results of Interview Question 8
Covering the Aspects of Supervision and Law Enforcement

8. To what extent have the number of violations been addressed before and after the implementation of the digital system?
Did not provide detailed answers regarding the number of violations before and after the implementation of the digital system. - Informant 1
Mentioned that from January to August 2023, there were 12,000 violations addressed through ETLE, and 3,464 cases have been prosecuted. - Informant 2
Mentioned that the use of technology, such as CCTV, helps capture more violations compared to the manual system. With CCTV in place, violations that were previously unaddressed can now be dealt with more effectively. - Informant 3
Feels that the implementation of the digital system has not yet had a significant impact on the number of violations, as he still often sees violators on the road. - Informant 4
Stated that he is not well-informed about the number of violators before and after the implementation of the digital system. - Informant 5
Did not provide details on the number of violations addressed. However, he mentioned that CCTV made enforcement more effective, as violations that were previously difficult to monitor can now be captured directly by the camera. - Informant 6

Table 10. Provides the Results from Interview Question 9
Covering the Aspects of Supervision and Law Enforcement

9. Does digital transformation affect the level of public compliance with traffic rules?
Stated that digital transformation, especially through ETLE, has increased public discipline in wearing helmets and reduced traffic violations. - Informant 1
Also mentioned that the community became more orderly after the installation of ETLE, especially at high-risk violation points such as red lights. - Informant 2

Believes that digital law enforcement can increase public compliance if applied more evenly and accompanied by broader socialization. According to him, the public that understands the existence of a digital system is more compliant with traffic rules. - Informant 3
Feels that the community has not shown significant changes in compliance due to a lack of understanding of the e-Tilang system. According to him, if the public better understands how this system works, their level of compliance could increase. - Informant 4
Believes that people who are already aware of the digital system are more compliant, but those who do not understand it do not feel a significant impact from this transformation. - Informant 5
Mentioned that the presence of CCTV has increased public compliance, especially in areas that are frequently monitored. According to him, the public is more cautious about adhering to traffic rules because they know their violations can be captured directly by the camera. - Informant 6

Table 11. Provides from the Interview Question Number 10
Covering the Aspects of Supervision and Law Enforcement

10. Does the use of digital technology, such as traffic monitoring applications and real-time information, increase road users' awareness and compliance?
Mentioned that the public is now more afraid of being ticketed due to ETLE monitoring, which has increased their awareness and compliance with traffic rules. - Informant 1
Also mentioned that with ETLE, public awareness has increased, especially at intersections monitored by cameras. - Informant 2
Stated that technology such as CCTV and real-time monitoring contributes to increasing awareness and compliance among road users. He feels that with this technology in place, the public is more vigilant about adhering to the rules. - Informant 3
Feels that the level of public compliance has not yet increased because its implementation has not been maximized. According to him, the public tends to be more afraid of manual fines compared to digital monitoring. - Informant 4
Mentioned that the use of digital technology has a positive impact on traffic order. The community feels monitored, which minimizes violations. - Informant 5
Also stated that technologies such as CCTV and real-time monitoring increase road users' awareness and compliance. According to him, with real-time information, the public can respond more quickly to traffic conditions and better comply with regulations. - Informant 6

Table 12. Presents the Results of Interviews with Law Enforcement Responses
Covering the Human Resource Aspect

13. In your opinion, what strategies are implemented to train personnel with varying levels of experience and technological skills?
Mentioned that personnel training is conducted regularly every month, with certification from the East Java Police for field officers. - Informant 1

Discussion

The research results were obtained from field observations and interviews conducted by the researcher from September 18 to 23, 2024. Starting from obtaining permission to conduct interviews and permission to leave the campus to carry out interviews from the Indonesian Aviation Academy Banyuwangi, providing a letter for interview permission for scientific writing data collection to the Banyuwangi Police Traffic Unit, until approval is granted and the interview activities can be carried out. The digital transformation implemented by the Banyuwangi police institution, using technologies such as e-ticketing and ETLE (Electronic Traffic Law Enforcement), has improved operational efficiency and transparency in traffic law enforcement. Based on the

interview results, this digital system facilitates public access to services, speeds up the handling of violations, and reduces direct interactions with officers who might abuse their authority.

However, several challenges remain to be addressed. The constraints of technological infrastructure and low public digital literacy (Nugroho, 2022), especially among road users who are not accustomed to online services, are issues that need to be addressed. The Banyuwangi Police need to enhance socialization and provide broader community support so that all layers of society can easily access digital services. From an operational cost perspective, the implementation of this technology helps reduce the financial burden on road users. However, managing digital infrastructure requires significant investment, which can pose a challenge for further development.

Overall, this research shows that the digital transformation of traffic functions in Banyuwangi has significantly improved police performance, enhanced public services, and increased public compliance with traffic regulations. With infrastructure improvements and enhanced digital literacy, this system has the potential to enhance law enforcement's effectiveness further. In this study, the researchers conducted interviews with several informants to identify the challenges, effectiveness, and impact of digital transformation in traffic functions in Banyuwangi Regency. Based on the interview results, the implementation of digital technology through e-Tilang and ETLE has generally contributed positively to traffic law enforcement, although some obstacles remain. Here is the discussion of the results of this research:

1. Challenges in Accelerating the Process of Handling Traffic Violations through Digital Systems

The use of digital systems certainly has challenges in its implementation. Interview results show that the main challenge in implementing the e-Tilang and ETLE systems is the lack of public understanding of the technology. Many people have not yet changed the name of their vehicles or are not accustomed to digital processes, making the implementation of electronic tickets difficult. In addition, the lack of socialization also makes the public more comfortable with the manual system. This challenge highlights the need for a more intensive approach in socializing the digital system to the public to ensure the effectiveness of e-Tilang.

2. Speed of Handling Traffic Violations through e-Tilang

The implementation of e-Tilang and ETLE is generally considered capable of speeding up the process of handling traffic violations, especially in areas far from direct officer supervision. However, several technical obstacles, such as inconsistent implementation and the continued use of manual ticketing systems, prevent this process from being fully efficient. However, the transparency and speed in resolving violations through eTilang are considered quite positive.

3. The Contribution of Digital Transformation to Operational Cost Reduction

From the interview results, although there are additional infrastructure and e-Tilang support costs, such as ETLE system cameras and networks, the reduction in field personnel is seen as a factor that can offset operational costs. Digital transformation in traffic management also increases efficiency in the long term, as this system reduces reliance on physical documents and facilitates the resolution of violations online. However, some informants noted that the initial operational costs of implementing the digital system were higher than those of the manual system.

4. Comparison of Operational Costs between Manual and Digital Systems

From the interview results, the comparison of operational costs between manual and digital systems has not yet been fully felt by all parties, especially because some people are still more familiar with the manual system. However, the digital system is overall more efficient in the long run because it reduces the need for physical documents and field labor. However, the initial implementation incurs additional infrastructure costs, which is one factor hindering broader adoption.

5. The Impact of Digital Transformation on Public Satisfaction Levels

Digital transformation, especially the implementation of e-Tilang via ETLE cameras, positively contributes to public satisfaction with traffic services, particularly by reducing direct interactions with officers, which are often sources of complaints. However, limited public understanding and limited socialization have prevented some members of the community from fully experiencing the benefits of this digital system. Therefore, more intensive socialization is needed to help the community better understand and use digital services.

CONCLUSIONS

Based on the results of this research and discussion, the following conclusions can be drawn:

1. The Impact of Digital Transformation on Service Efficiency, Operations, and Public Satisfaction in Banyuwangi

Digital transformation in the traffic sector, particularly through the implementation of e-Tilang and ETLE, has significantly improved service and operational efficiency at the Banyuwangi Police Institution. With digital technology, the process of handling traffic violations becomes faster and more transparent, reducing direct interactions between officers and violators and minimizing the potential for misconduct. In addition, the reduction in the need for field personnel and the decreased use of physical documents also enhance operational efficiency.

However, public satisfaction is not yet optimal due to limited socialization about the eTilang and ETLE systems, which has led some members of the public not to understand how these services work fully. Overall, although digital transformation has had a positive impact, socialization and public adoption of this technology still need improvement.

2. Constraints and Challenges in the Implementation of Digital Technology and the Steps Taken

In implementing digital technology for traffic management, the Banyuwangi Police Institution faces several obstacles, including limited public understanding of technology, minimal socialization, and uneven supporting infrastructure. The community still tends to be more comfortable using the manual system due to limited information about digital services, and some types of violations, such as vehicles with exhaust systems that do not meet specifications, have not yet been fully detected by the ETLE system.

LIMITATION & FURTHER RESEARCH

The limitations of this research include: (1) Data Limitations: The data used in this study is limited to a specific period, so it may not fully reflect the long-term development of digitalization in traffic functions (LANTAS); (2) Geographical Limitation: This research is focused solely on the Banyuwangi Police institution, so the results may not be fully relevant to other regions with different traffic characteristics; (3) Technological Limitations: Digitalization in the Banyuwangi Police institution may not yet be fully optimal due to limitations in technological infrastructure and the skills of human resources proficient in that technology; (4) Social and Cultural Aspects: Social, cultural factors, and the level of digital literacy among the people of Banyuwangi were not fully considered as variables in this research, even though these aspects can influence the effectiveness of traffic function digitalization.

Further Research includes: (1) Comparative Study: Future research can compare the implementation of traffic function digitalization in various regions to identify the best patterns that can be applied; (2) Holistic Approach: Subsequent research can involve social, cultural, and behavioral aspects of society in measuring the impact of digitalizing traffic functions; (3) Long-Term Evaluation: Research with a longer time frame is needed to understand the sustained impact

of digitalization on the Banyuwangi Police institution; (4) Integration of New Technologies: Research can be focused on the application of new technologies such as artificial intelligence (AI), big data analytics, and the Internet of Things (IoT) in traffic functions to enhance service effectiveness; (5) Public Satisfaction: There needs to be research evaluating how the digitalization of traffic functions affects public satisfaction with traffic services in Banyuwangi.

The limitations and recommendations for further research are expected to serve as a guide for the development of a more modern and responsive police institution to digital changes.

REFERENCES

- Aprillia, A. A. (2020). Implementasi e-tilang dalam meningkatkan pelayanan publik oleh Satuan Lalu Lintas Polres Banyumas. *Advances in Police Science Research Journal*, 4(1), 209–280. <https://doi.org/10.70526/apsrj.v4i1.119>
- Calilao, A. J., Domingo, A., Labaro, R. J., & Pascua, A. J. (2024). Assessing the effectiveness of university public relations in crisis management. *People and Behavior Analysis*, 2(1), 27–47. <https://doi.org/10.31098/pba.v2i1.2029>
- Cruz, N. T., De Castro, L., Daniel, A. D., Rapada, J. M. S., & Rebuldela, J. M. N. (2024). Level of risk awareness and insurance literacy of Ilocanos residing in Ilocos Sur. *People and Behavior Analysis*, 2(1), 15–26. <https://doi.org/10.31098/pba.v2i1.2113>
- Sulistiyono, R. D., & Shihab, M. R. (2023). Transformasi digital dalam pelayanan Surat Izin Mengemudi (SIM): Studi kasus Korlantas Polri. *Technomedia Journal*, 8(2SP), 189–204. <https://doi.org/10.33050/tmj.v8i2sp.2064>
- Estebal, M. E. C., López, J., & Dean, A. (2024). Organizational commitment and employee performance during the COVID-19 pandemic: Evidence from a BPO company. *People and Behavior Analysis*, 2(1), 1–14. <https://doi.org/10.31098/pba.v2i1.2105>
- Fachrurazi, Rukmana, A. Y., Supriyanto, Syamsulbahri, & Iskandar. (2023). Revolusi bisnis di era digital: Strategi dan dampak transformasi proses teknologi terhadap keunggulan kompetitif dan pertumbuhan organisasi. *Jurnal Bisnis dan Manajemen West Science*, 2(3), 297–305. <https://doi.org/10.58812/jbmws.v2i03.563>
- Fadillah, S., Zulkaidah Siregar, H., Abdillah, F., Fadilla, H., Arif, M., & Manurung, P. (2023). Dampak transformasi digital terhadap inovasi model bisnis dalam start-up teknologi. *Innovative: Journal of Social Science Research*, 3(3), 6111–6122.
- Ikhwan, M., Sahari, A., & Fauzi, A. (2020). Peran Direktorat Lalu Lintas Polda Sumatera Utara dalam menciptakan akuntabilitas pelayanan publik. *Journal of Education, Humaniora and Social Sciences*, 3(1), 103–110. <https://doi.org/10.34007/jehss.v3i1.204>
- Islam, F., & Aulia, W. A. R. (2024). Analysis of runway incursion incident using report for the years 2012–2022. *People and Behavior Analysis*, 2(1), 61–74. <https://doi.org/10.31098/pba.v2i1.2061>
- Junaidi, F. (2021). Transformasi digital pelayanan publik di masa pandemi. *Ekasakti Educational Journal*, 1(2), 278–292.
- Muhammad, D. (2019). Perkembangan dan transformasi teknologi digital. *Infokam*, 15(2), 116–123.
- Nugroho, A. S. (2022). Electronic Traffic Law Enforcement (E-TLE) Mobile sebagai difusi inovasi menuju E-TLE nasional. *Jurnal Ilmu Kepolisian*, 16(3), 20. <https://doi.org/10.35879/jik.v16i3.358>
- Rachman, A., Yochanan E., Samanlangi, A. I., Purnomo, H. (2024). *Metode penelitian kuantitatif, kualitatif, dan R & D*. CV Saba Jaya Publisher.
- Ramilan, R., Mulyanti, R. Y., Koesmawan, K., & Wati, L. N. (2024). Role of workplace spirituality and organizational citizenship behavior in improving lecturers' performance. *People and Behavior Analysis*, 2(1), 48–60. <https://doi.org/10.31098/pba.v2i1.2278>

- Ritonga, A. E., Sinaga, K., & Saragi, S. (2023). Pengaruh transformasi digital terhadap pengembangan sumber daya manusia di Dinas Kependudukan dan Pencatatan Sipil Kota Pematangsiantar. *Publik Reform*, 10(1), 35–49. <https://doi.org/10.46576/jpr.v10i1.3453>
- Sabadina, U. (2020). Penerapan e-tilang dalam penyelesaian tindak pidana pelanggaran lalu lintas. *Indonesian Journal of Criminal Law and Criminology*, 1(1), 60–71. <https://doi.org/10.18196/ijcl.v1i1.9157>
- Salsabila, F. (2018). Inovasi program elektronik tilang (e-tilang) dalam meningkatkan pelayanan publik di Polres Kediri. *Publika*.
- Sari, M. N. (2024). Digital pada organisasi: Tinjauan terhadap implementasi. *Jurnal Riset Pendidikan dan Pengajaran*, 7(3), 10779–10787. <https://doi.org/10.31004/jrpp.v7i3.31987>
- Sinollah, & Masruro. (2019). Pembentukan kepuasan pelanggan untuk menciptakan loyalitas pelanggan (Studi kasus Toko Mayang Collection Cabang Kepanjen). *Jurnal Dialektika*, 4(1), 45–64.
- Siregar, I., Mukhtar, Anwar, K., Mahmud, M., & Munte, R. S. (2024). Dampak transformasi digital terhadap prestasi kerja dan keunggulan bersaing di sekolah Islam terpadu. *Jurnal Review Pendidikan dan Pengajaran*, 7(3), 8644–8655.
- Sudiantini, D., Ayu, M. P., Aswan, M. C. A. S., Prastuti, M. A., & Melani, A. (2023). Transformasi digital: Dampak, tantangan, dan peluang untuk pertumbuhan ekonomi digital. *Trending: Jurnal Ekonomi, Akuntansi dan Manajemen*, 1(3), 21–30.
- Sudrajad, A. I., Tricahyono, D., Al-Amin, Zuwardi, Yulianti, E. B., Irnayenti, Ahmad, & Rosmawati, W. (2023). The role of digitalization performance on digital business strategy in Indonesian MSMEs. *International Journal of Professional Business Review*, 8(6), e02260. <https://doi.org/10.26668/businessreview/2023.v8i6.2260>
- Tamamy, F. M. (2023). *Implementasi ETLE berdasarkan Undang-Undang Nomor 22 Tahun 2009 tentang lalu lintas dan angkutan jalan di wilayah hukum Polres Bantul* [Undergraduate thesis, Universitas Islam Indonesia].
- Tulungen, E. E. W., Saerang, D. P. E., & Maramis, J. B. (2022). Transformasi digital: Peran kepemimpinan digital. *Jurnal EMBA*, 10(2), 1116–1123. <https://doi.org/10.35794/emba.v10i2.41399>
- Wahyudi, A., Bhismi, M., Assyamiri, T., Al Aluf, W., Fadhillah, M. R., Yolanda, S., & Anshori, M. I. (2023). Dampak transformasi era digital terhadap manajemen sumber daya manusia. *Jurnal Bintang Manajemen*, 1(4), 99–111.
- Yulianti, E., & Asmara, N. A. A. (2023). Strategi peningkatan kompetensi teknis personel Polri di Polsek Tanggeung Cianjur. *Prosiding Konferensi Nasional Ilmu Administrasi*, 1, 141–147.
- Yunaningsih, A., Indah, D., & Septiawan, F. E. (2021). Upaya meningkatkan kualitas layanan publik melalui digitalisasi. *Altasia: Jurnal Pariwisata Indonesia*, 3(1), 9–16. <https://doi.org/10.37253/altasia.v3i1.4336>