

## POLICY EVALUATION OF CASHLESS PAYMENT SYSTEM IN PUBLIC TRANSPORTATION SERVICES OF “TRANS BANYUMAS” BUY THE SERVICE PROGRAM IN BANYUMAS REGENCY

April Kurniawan<sup>1\*</sup>, Aliefia Elfarizza<sup>2</sup>, Alyani ‘Ainun Nafis<sup>3</sup>, Anisa Afri Inayah<sup>4</sup>

<sup>1</sup>Fakultas Ekonomi dan Bisnis, Universitas Dian Nuswantoro Semarang,

Jl. Nakula 1 No.5-11, Semarang Tengah, Kota Semarang, Jawa Tengah, Indonesia

<sup>2</sup>Fakultas Ilmu Sosial dan Politik, Universitas Diponegoro Semarang,

Jl. Prof. Soedarto, Tembalang, Kota Semarang, Jawa Tengah, Indonesia

<sup>3</sup>Fakultas Sosial, Ekonomi dan Humaniora, Universitas Nahdlatul Ulama Purwokerto

Jl. Sultan Agung No.42, Purwokerto Selatan, Kabupaten Banyumas, Jawa Tengah, Indonesia

<sup>4</sup>Fakultas Ilmu Sosial, Universitas Harapan Bangsa Purwokerto

Jl. K.H. Wahid Hasyim, No. 274-A, Purwokerto Selatan, Kabupaten Banyumas, Jawa Tengah, Indonesia

E-mail: [aprilkurniawanofficial@gmail.com](mailto:aprilkurniawanofficial@gmail.com) ; [aliefiaelfarizza@students.undip.ac.id](mailto:aliefiaelfarizza@students.undip.ac.id) ;  
[alyaniainunnafis21@gmail.com](mailto:alyaniainunnafis21@gmail.com) ; [anisaaafriinayah2003@gmail.com](mailto:anisaaafriinayah2003@gmail.com)

**ABSTRACT.** *This study evaluates the cashless payment system policy in the Buy The Service program of the Ministry of Transportation of the Republic of Indonesia, focusing on the Trans Banyumas service in the Banyumas Regency. The digitization of payment systems in the transportation sector is expected to improve operational efficiency and transaction transparency and shift people's payment patterns from cash to cashless. However, implementing this policy still faces challenges, including technical constraints and user preferences for payment methods. This study employs a descriptive qualitative approach using William Dunn's evaluation theory and data collection methods through observation, interviews, and documentation. The results indicate that the cashless payment system has effectively enhanced transaction efficiency and transparency. However, there is a gap in payment methods, as most passengers prefer e-money cards over QRIS. This preference is influenced by limited internet access and the 90-minute integration fare policy, which only applies to e-money cards. Thus, it can be concluded that the cashless payment system policy in the public transportation service of the Buy the Service Trans Banyumas program has made a positive contribution but still requires optimization, particularly in equalizing the integration fare policy and improving payment infrastructure.*

**Keywords:** Cashless Payment, Buy the Service, Trans Banyumas, E-Money Card, QRIS.

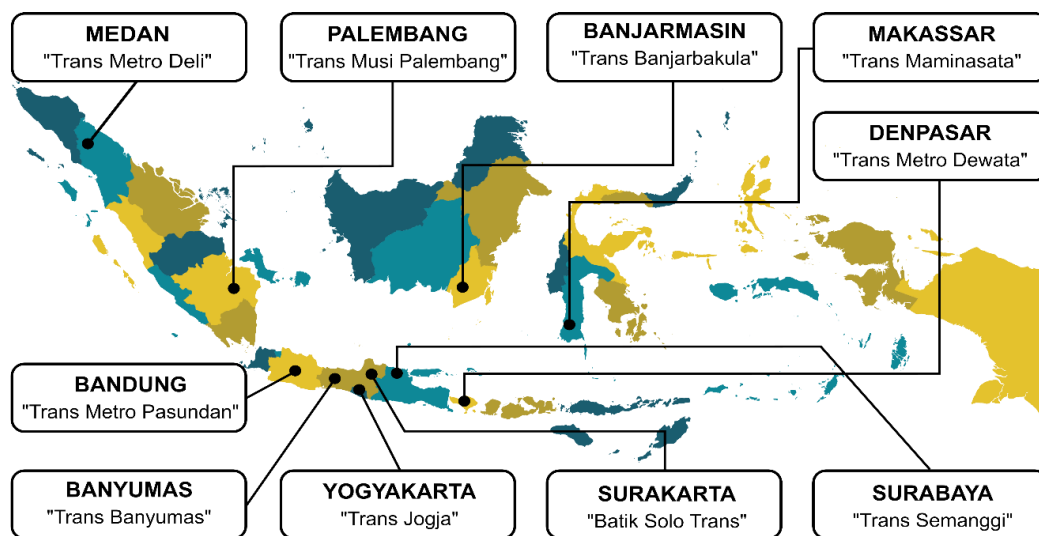
### INTRODUCTION

The development of technology today has made human activities almost inseparable from technology. Technological advances significantly impact human life because they can help facilitate all forms of activities. In today's digital era, technological advances have helped in the growth of the digital economy, especially in accelerating the digital financial integration of a country. This progress can be seen in the payment system, which can now be done digitally using various methods (Muhammad Anwar Fathoni, 2024). Along with the times, money in physical form faces challenges related to efficiency and security (Tarantang et al., 2019). So, cashless or digital payments are becoming more popular thanks to technological improvements in payment systems. This phenomenon dramatically affects prices, output, and the transmission of government monetary policy to boost the economy (Ravikumar et al., 2019). Cashless payment methods that are growing rapidly in various countries in line with the growth of mobile payments are QR Codes (Lee Eunji, 2021) and Cashless Payment Cards (Rizky Ramadini Febrinda, 2022).

The popularity of electronic money in Indonesia continues to increase along with the rapid growth of businesses in the financial technology sector, which also encourages the emergence of startup companies that focus on the digital finance sector (Sasnabila Khayyirah & Rahmat Akbar Kurniawan, 2022). Bank Indonesia, as a regulator in the payment system sector, encourages the implementation of a cashless payment system, significantly reducing the amount of money circulating in the community and minimizing the cost of printing cash, which is the second highest cost in the central

bank's financial statements after the operational cost of monetary policy (Saputri, 2020). To support the transformation of the payment system, Bank Indonesia issued several policies, including Bank Indonesia Regulation Number 11/12/PBI/2009 and Number 20/6/PBI/2018 on Electronic Money, to encourage all levels of society to reduce the use of cash in the payment system in Indonesia. These regulations provide the legal foundation governing the issuance and use of electronic money in Indonesia, including electronic payment card products such as Flazz (BCA), Brizzi (BRI), Tap-Cash (BNI), and E-Money (Mandiri). Although electronic payment cards began to be implemented in 2007, formal regulations regarding these products were issued in 2009 to provide more structured guidance and supervision. In 2019, through the Board of Governors Regulation Number 21/18/PADG/2019 on implementing the Quick Response Code National Standard in Payments, Bank Indonesia launched the QRIS payment system standardization to optimize the digital payment process. Bank Indonesia released QRIS on August 17, 2019, but it was effectively used on January 1, 2020. QRIS or Quick Response Code Indonesia Standard is a payment QR Code standard in the Indonesian payment system, which Bank Indonesia and the Indonesian Payment System Association developed.

Transportation is a means of mobility for society, especially with today's rapid developments. The demand for transportation fleets is increasingly urgent to support smooth travel to various destinations. Therefore, public transportation can be identified as an effective solution to reduce the fatigue caused by private vehicles (Al Hayati, K. Z., & Al-Hamdi, 2019). Cashless payment systems through electronic payment cards and QRIS have been implemented in various business sectors, including transportation. One of the implementations is in the Ministry of Transportation's Buy The Service (BTS) service program. The Government, in this case through the Directorate General of Land Transportation of the Ministry of Transportation, made a service purchase scheme called Buy The Service (BTS), known as "Teman Bus". BTS is a system of purchasing road transport services from the government and public transport operators to obtain good road transport services (Oktavia, 2023). This program is a government effort to provide mass transportation that serves the community's needs in transportation. TEMAN Bus is an acronym for "Transportasi Ekonomis, Mudah, Andal, dan Nyaman." This transportation system is operated using reliable telematics technology, is cashless-based, and aims to improve safety, security, and user comfort (Sulistya, 2024). The vision of the BTS program is to change the community's mindset from using cash transportation modes to cashless ones. Through BTS, the Government integrates electronic payment cards to facilitate transactions and improve operational efficiency in the transportation sector. The BTS program was officially launched by the Government in 2020. Currently, 10 regions in Indonesia have been selected for the BTS program, including Medan, Palembang, Banjarmasin, Makassar, Denpasar, Bandung, Banyumas, Yogyakarta, Surakarta, and Surabaya.



*Source: Documentation of Buy the Service Program Evaluation in Indonesia  
Institute for Transportation and Development Policy (ITDP) Indonesia, 2023*

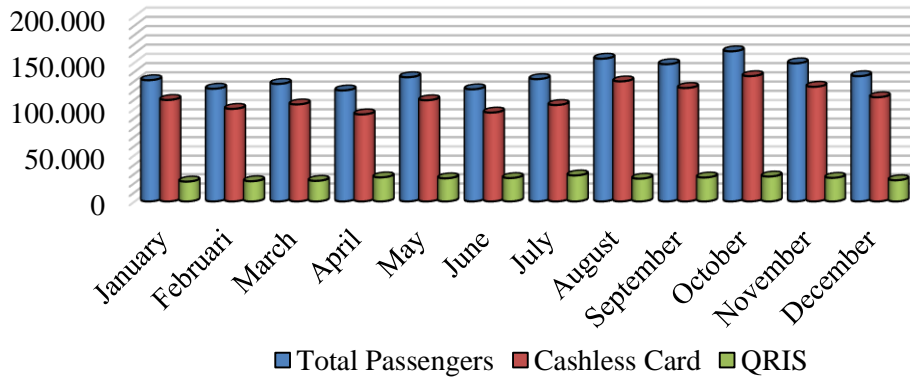
**Pictures 1. Recipient regions of the Buy The Service Program**

Policy Evaluation of Cashless Payment System in Public Transportation Services of "Trans Banyumas" Buy The Service Program in Banyumas Regency

(April Kurniawan, Aliefia Elfarizza, Alyani 'Ainun Nafis, Anisa Afri Inayah)

Banyumas Regency is the only regency selected as a recipient of the BTS program. The Buy The Service program began operating on December 5, 2021, known as “Trans Banyumas.” Banyumas Regency was selected for the BTS program through an open bidding mechanism based on the Minimum Service Standards or Quality Licensing, which met aspects of comfort, security, safety, affordability, equality, and health. Through this bidding process, PT. Banyumas Raya Transportasi was chosen as the operator of Trans Banyumas to meet the required standards (Sulistya, 2024). The official presence of the Buy The Service program in Banyumas Regency was marked by the signing of the memorandum of agreement for the “Buy The Service” program, numbered HK/201/8/7/DJPD/2020 and No. 550/65/220, concerning the Planning, Development, and Operation of Urban Public Transportation in Banyumas Regency. This agreement was signed between the Directorate General of Land Transportation of the Ministry of Transportation of the Republic of Indonesia and the Banyumas Regency Government on Wednesday, October 14, 2020, at the Si Panji Pavilion, Purwokerto. Presidential Regulation No. 79 of 2019 concerning the Acceleration of Economic Development in the Barlingmascakeb Region further strengthens the Buy the Service program implementation in the Banyumas Regency. This regulation aims to enhance the region’s competitiveness, boost investment growth, and support an integrated and sustainable national economy.

The operator responsible for implementing and managing this program is PT Banyumas Raya Transportasi, which the Banyumas Regency Government operationally supports through the Department of Transportation. The cashless payment system applied to this service program utilizes two methods: cashless payment cards integrated with the Tap on Bus (TOB) device and QRIS payments via barcodes displayed on the dashboard and at the entrance of each bus. The accepted cashless payment cards include Flazz (BCA), Brizzi (BRI), Tap-Cash (BNI), and E-Money (Mandiri). Meanwhile, QRIS payments can be made using digital wallet applications such as OVO, Gopay, LinkAja, Dana, ShopeePay, and others. According to regulations, passengers who pay using E-Money cards receive a free integration facility for 90 minutes, meaning they can transfer buses or routes free of charge within 90 minutes from the first payment. This free integration facility does not apply to passengers using QRIS payments, who must pay again for each bus transfer. This study evaluates the cashless payment policy implemented in the BTS service program to assess the application of the cashless payment method used by Trans Banyumas buses. Below is the payment data for Trans Banyumas Buses in 2024:



Source: Dashboard BTS PT Banyumas Raya Transportasi  
(Data Processed)

**Pictures 2. Comparison of Cashless Card and QRIS Usage in 2024**

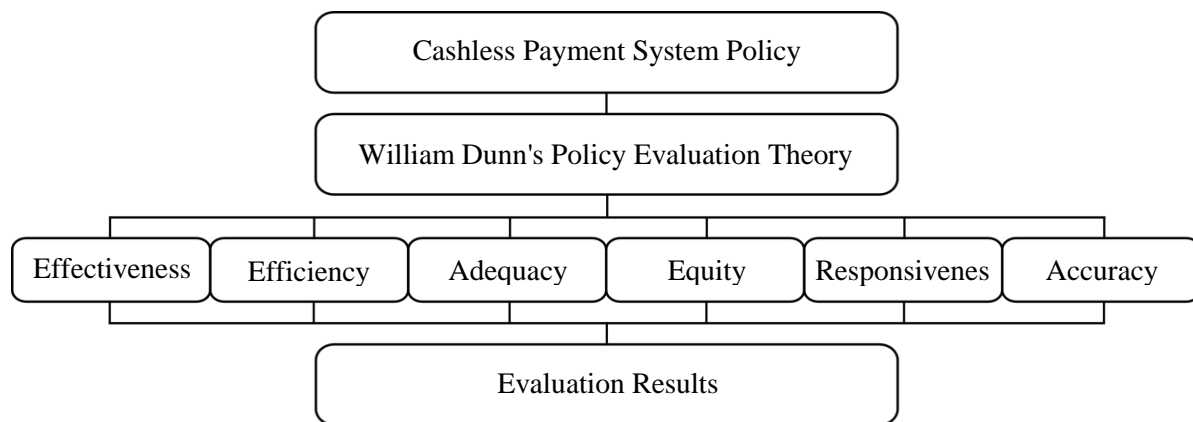
Based on the data above, payment systems using the Cashless Card and QRIS methods from January to December 2024 show significant differences. The number of Cashless Card users is consistently higher than QRIS every month during 2024. Overall, the number of Cashless Card users reached 1,338,979 passengers, or around 82% of total passengers, while QRIS users only reached 294,456 passengers, or around 18% of total passengers. This trend shows that most passengers prefer Cashless Cards over QRIS throughout 2024. The significant gap between the two payment methods reflects passengers’ preference for Cashless Cards, which are more

straightforward. One of the main factors that is the cause is the ease of use of the Cashless Card, which does not depend on an internet connection, making it reliable in various conditions and areas with limited digital infrastructure.

In contrast, QRIS requires a digital device such as a smartphone and a stable internet connection. At the same time, a stable internet connection cannot reach all areas, especially in rural areas. In addition, QRIS also requires knowledge and understanding of digitalization in using gadgets and cashless payment applications. Based on this gap, this research is interesting because it provides a comprehensive overview of the implementation of cashless payment methods and reveals the factors that influence the adoption gap between Cashless Cards and QRIS. By presenting an in-depth discussion, this research not only helps understand the implementation of digital payment systems but also offers strategic insights that can support efforts to increase efficiency in payment transformation in the public transportation sector.

This study evaluates the implementation of the cashless payment system policy using cashless cards and QRIS in the Buy The Service (BTS) Trans Banyumas transportation mode. Previous studies, such as those conducted by Saputri & Atmojo (2023) on Trans Jogja, Julieta & Nabilla (2023) on Trans Metro Bandung, Lesmana & Widiyarta (2022) on Suroboyo Bus, and Sonia et al. (2020) on Trans Padang, generally focused on only one payment method or examined specific aspects such as service quality, user perceptions, or institutional factors. The study conducted by Jabar and Leksmono Suryo Putranto (2023) explicitly examines public perceptions of the cashless payment system across various modes of transportation. However, no previous studies have simultaneously analyzed the implementation of both E-money and QRIS payment methods within a single public transportation program. Therefore, the novelty of this research lies in its comprehensive evaluation of both payment methods simultaneously, including the identification of user preferences, implementation obstacles, and policy gaps, particularly regarding the 90-minute integration fare policy that only applies to E-money users. This study also aims to analyze effectiveness, efficiency, and other evaluation criteria using William Dunn's policy evaluation framework, focusing on how implementing E-money and QRIS contributes to transaction efficiency, ease of use, and the overall improvement of public transportation services.

### RESEARCH FRAMEWORK



*Source: Policy Evaluation Theory by William Dunn, 2003  
(Illustrated by the author)*

### Pictures 3. Research Framework

#### William Dunn's Evaluation Theory

Policy evaluation is aimed at assessing the extent to which the expected targets have achieved the objectives of an implemented policy. Additionally, evaluation serves as a tool for critique and clarification of the values

underlying the policy and aiding in formulating and adjusting policies in the future. In general, evaluation can be understood as analyzing policy outcomes based on specific values, often called appraisal, rating, or assessment. More specifically, evaluation aims to generate information on the value or benefits of policy outcomes (Dunn, 2003). According to Dunn (2003), there are several evaluation criteria: Effectiveness, Efficiency, Adequacy, Equity, Responsiveness, and Accuracy.

1. Effectiveness

Effectiveness refers to how the achieved results align with the planned objectives. In the context of policy evaluation, effectiveness measures the success of a policy in meeting its predetermined targets (Dunn, 2003).

2. Efficiency

Efficiency relates to the relationship between the resources used and the results achieved. An efficient policy maximizes outcomes using the least possible resources (Dunn, 2003).

3. Adequacy

Adequacy assesses how much a policy can meet needs or address existing problems. It evaluates whether the policy's scope is sufficient to create the desired impact (Dunn, 2003).

4. Equity

Equity evaluates whether a policy or program benefits all groups in society without discrimination (Dunn, 2003).

5. Responsiveness

Responsiveness is the ability of a policy to respond to the needs, expectations, and aspirations of the target population (Dunn, 2003).

6. Accuracy

Accuracy measures the extent to which a policy aligns with the specific context and needs of the problem it aims to address, including its relevance to its objectives and the prevailing situation (Dunn, 2003).

## METHODS

The approach used in this research is descriptive qualitative. Qualitative research aims to understand human or social phenomena by producing in-depth and complex images that can be communicated in words, reporting detailed perspectives obtained from informant sources, and being carried out in a natural environment (Walidin et al., 2015). Qualitative research is an interactive process of increasing understanding in the scientific community and becoming close to the researched phenomenon (Patrik Aspers, 2019). Therefore, qualitative research aims to understand social problems better (Fadli, 2021). This research uses the Evaluation Theory from William Dunn (2003). According to Dunn (2003), there are several evaluation criteria: Effectiveness, Efficiency, Adequacy, Alignment, Responsiveness, and Accuracy.

The descriptive qualitative approach was chosen because this research focuses more on analyzing and evaluating the implementation of the cashless payment system in the Trans Banyumas Bus Buy the Service program. Data collection techniques were carried out in three steps: observation, interviews, and documentation. Observations were made to observe the cashless payment process on the Trans Banyumas Bus. Then, interviews were conducted with passengers or users of the Trans Banyumas Bus, Drivers, the President and Director of PT Banyumas Raya Transportasi, and Banyumas Regency Transportation Agency to obtain information. The results of the interviews were proven by documentation. The primary and secondary data used in this research are primary and secondary. Refi Arioen (2023) states that primary data is obtained directly in the field when making direct observations or interviewing informants. Secondary data is obtained through journals, books, and official data from the Trans Banyumas Bus manager.

The informant selection technique in this study uses a non-probability sampling design using the snowball sampling technique. According to Sugiyono (2017), Snowball sampling is a technique of selecting informants from initially small numbers, which will get bigger and bigger. In this case, the selection of informants begins by determining one or two informants. However, the number of informants will increase because the information from the previous informants is

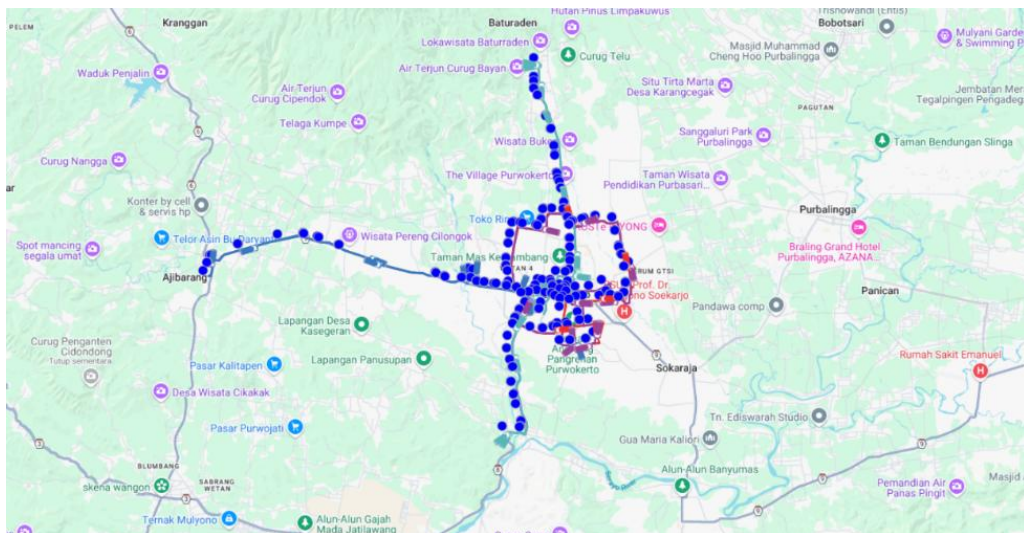


deemed not to have provided complete data, so researchers increase the number of other informants to complete the research data. Data analysis techniques are carried out through the stages of data validity using a triangulation system, namely source and technical triangulation. The data analysis method is collecting, reducing, presenting, and drawing conclusions (Ni Made Puriati & I Wayan Sugiartana, 2023).

## RESULTS AND DISCUSSION

### Overview of the Research Location

This research was conducted on the Buy The Service Trans Banyumas service program in the Banyumas Regency. Banyumas Regency is one of the regencies in Central Java, with the capital city being Purwokerto District. Administratively, Banyumas Regency has an area of 1,327.59 km<sup>2</sup> divided into 27 sub-district administrative areas. The population of Banyumas Regency in 2021 was 1,789,630 people, with a population density of 1,348 people/km<sup>2</sup>. The road network infrastructure in Kabupaten Banyumas is 1,508.00 km long, divided into 171.00 km of state roads, 39.73 km of provincial roads, and 1,718.73 km of district roads (Badan Pusat Statistik, 2024). Based on data obtained from PT Banyumas Raya Transportation, Trans Banyumas has a fleet of 52 units with a division of 47 operational units and five spare units. Trans Banyumas serves four corridors, namely Corridor 1 (K1BM), Corridor 2 (K2BM), Corridor 3A (K3A), and Corridor 3B (K3B). Corridor 1 serves the route from Pasar Pon to “Terminal Ajibarang with a corridor length of 38.51 km; Corridor 2 serves the route from Terminal Notog to Terminal Baturraden with a corridor length of 48.01 km. Corridor 3 is divided into two routes, 3A and 3B, which serve the Terminal Bulupitu to Terminal Kebondalem route with a corridor length of 31.72 km and 31.93 km, respectively.

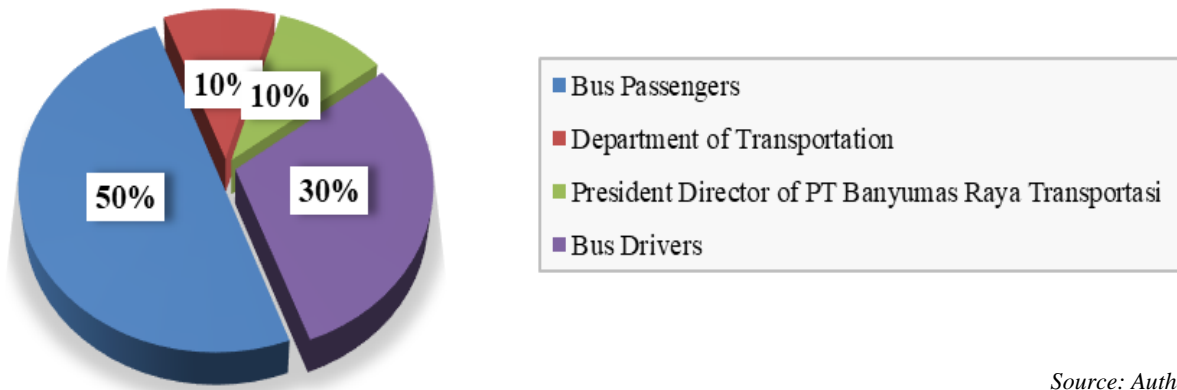


Source: PT Banyumas Raya Transportasi

**Pictures 4. Distribution of areas served by Trans Banyumas**

### Research Respondents

The respondents in this study consist of 10 individuals from various groups involved in the operations of Trans Banyumas. The research respondents include representatives from the Department of Transportation (1 person), the President Director of PT Banyumas Raya Transportasi (1 person), Bus Drivers (3 people), and Bus Passengers (5 people). This composition reflects the perspectives of various stakeholders in the Buy The Service (BTS) program of Trans Banyumas. Therefore, the research results are expected to provide a comprehensive overview of the policy evaluation of the cashless payment system implemented.



Source: Author, 2025

**Pictures 4. Research Respondent Diagram**

**Table 1. Evaluation Criteria for the Cashless Payment System Implementation in Trans Banyumas**

No.	Criterion	Dunn (2003)	Ministry of Transport Indonesia
1	Effectiveness	Measures the success in achieving predetermined targets	To what extent has implemented the cashless payment system in Trans Banyumas effectively achieved its objectives, such as convenience, security, and transaction transparency?
2	Efficiency	Relationship between resources used and results achieved	How efficiently have resources, including human resources and infrastructure, been utilized in implementing the cashless payment system in Trans Banyumas?
3	Adequacy	Measures how well the system meets needs and creates impact	To what extent has the cashless payment system in Trans Banyumas met passenger needs, such as providing payment options and top-up facilities?
4	Equity	Provides fair benefits for all groups in society	To what extent does the cashless payment system in Trans Banyumas ensure equitable access and benefits for all groups, including students, elderly passengers, and individuals with disabilities?
5	Responsiveness	Ability to respond to needs, expectations, and feedback	To what extent has Trans Banyumas management responded to feedback and concerns from passengers regarding the cashless payment system through available communication channels?
6	Accuracy	Alignment with the context and specific needs of the problem	To what extent has implemented the cashless payment system in Trans Banyumas addressed the community's specific needs, ensuring comfort and speed and resolving transaction-related issues?

## **Policy Evaluation of Cashless Payment System in Public Transportation Services of Trans Banyumas Buy The Service Program in Banyumas Regency**

### **1. Effectiveness**

Implementing a cashless payment system in the Buy The Service (BTS) Bus Trans Banyumas can be considered adequate if it meets the objectives as intended and is implemented correctly. Based on field

observations, the implementation of the cashless payment system in BTS Bus Trans Banyumas has proven to be effective. This aligns with the statement of the Head of UPTD of Facilities and Infrastructure Management, Banyumas Transportation Agency, Mr. Taryono, who stated:

*“One of the purposes of implementing a cashless payment system in the BTS Bus Trans Banyumas service is to enhance convenience, security, transaction transparency, and to change the mindset of the people of Banyumas from cash payments to cashless payments.”* (Interview with Mr. Taryono, Head of UPTD of Facilities and Infrastructure Management, Banyumas Transportation Agency, January 22, 2025, at the Banyumas Transportation Agency office).

The objectives have been successfully achieved, as evidenced by the change in the public’s mindset. The implemented cashless payment system has effectively transformed the mindset of the public, who were initially unfamiliar with non-cash payment methods. It has made them more open to embracing digital advancements in public transportation. This is supported by an interview with a Bus Trans Banyumas passenger, who said:

*“The cashless payment system is very effective and has greatly helped me. Initially, I did not know how to pay cashlessly, but now I am more familiar with and used to it. For me, it is simpler and more practical.”* (Interview with Mrs. Ade, a passenger on Bus Trans Banyumas Corridor 1, January 10, 2025, at Terminal Pasar Pon).

From the interview, it can be concluded that implementing the cashless payment system has successfully created a new mindset in the community, supporting the application of the cashless payment system in BTS Bus Trans Banyumas. The cashless payment methods for this service are divided into two methods: QRIS and e-money. However, although the cashless payment system has succeeded in changing the public’s mindset, several challenges still arise during its implementation. One of the common problems related to the QRIS payment method was explained by one of the passengers:

*“Sometimes, the QRIS code cannot be detected. I am not sure whether it is due to the signal or a system issue.”* (Interview with Mr. Afis, a passenger on Bus Trans Banyumas Corridor 3, January 31, 2025, at the Bus Trans Banyumas Pool).

Technical issues such as the inability to detect QR codes or slow scanning processes are significant obstacles, primarily due to dependence on mobile phone signal quality. This issue is less practical because not all areas have sufficient internet connectivity. Additionally, passengers using the electronic e-money card also experience other challenges, as explained by Mrs. Rapika Trisma:

*“I have had issues when making payments on Bus Trans Banyumas, often experiencing bugs or freezing, so I have to try multiple times.”* (Interview with Mrs. Rapika Trisma, passenger on Bus Trans Banyumas Corridor 2, January 20, 2025, on the Bus Trans Banyumas).

From this interview, it is known that passengers face another challenge: the payment tap devices often freeze or encounter bugs, requiring repeated attempts to complete the payment process. To address these issues, the management of Bus Trans Banyumas has routinely checked the cashless payment devices. Despite these technical challenges, the cashless payment system has advantages, particularly regarding flexibility. Using the e-money card is not dependent on internet connectivity, making it more practical and less prone to issues than QRIS. Additionally, using e-money offers the advantage of free integration fare for 90 minutes. This means passengers who transfer between corridors within 90 minutes are not charged an additional fare. In contrast, QRIS does not support fare integration, meaning passengers transferring between corridors must pay the standard fare. From the transparency perspective, using QRIS in BTS Bus Trans Banyumas’s payment system has proven effective in preventing drivers from incurring illegal charges. All transactions are directly linked to the management system, ensuring transparency and adherence to the established fare rules, which are Rp 2,000 for special groups such as students, seniors, and persons with disabilities and Rp 3,900 for general passengers.

## **2. Efficiency**

The efficiency of implementing the cashless payment system in the BTS Bus Trans Banyumas service is closely related to the resources used to achieve the objectives of the cashless payment system. These resources



include human resources as well as supporting infrastructure. Based on field observations, the efficiency of human resources in implementing the cashless payment system in BTS Bus Trans Banyumas is reflected in the provision of competent bus drivers equipped with intensive training to effectively serve passengers, especially in handling cashless payments. This is supported by an interview with a Bus Trans Banyumas driver, who stated:

*“Most drivers are encouraged to have e-money balances so that when passengers encounter issues during the payment transaction, either through QRIS or e-money cards, they can be assisted by the driver.”* (Interview with Mr. Afif, Bus Trans Banyumas Driver on Corridor 3, January 21, 2025, at Terminal Bulupitu Purwokerto).

From the interview, it is clear that to anticipate problems faced by passengers during cashless payments, bus drivers are encouraged to have mobile banking and e-money cards. If passengers face difficulties paying using QRIS or e-money cards, the driver can assist them. Moreover, to ensure efficiency in the implementation of the cashless payment system on Bus Trans Banyumas, PT Banyumas Raya Transportasi, in collaboration with the Banyumas Regency Transportation Agency, actively conducts socialization efforts to inform the public about how to make cashless payments on Bus Trans Banyumas. This is further supported by the statement of the Head of UPTD of Facilities and Infrastructure at the Banyumas Regency Transportation Agency, who said:

*“One of our efforts to achieve efficient non-cash payments on Bus Trans Banyumas is by providing support so that the public understands how to use the non-cash payment methods. We do this by conducting widespread socialization to various segments of society, from students to seniors.”* (Interview with Mr. Taryono, Head of UPTD of Facilities and Infrastructure, Banyumas Regency Transportation Agency, January 22, 2025, at the Banyumas Regency Transportation Agency office).

A similar statement was made by the President Director of PT Banyumas Raya Transportasi, who stated:

*“We regularly hold socialization sessions in collaboration with the Banyumas Regency Transportation Agency with the hope that this non-cash program can be used effectively by all passengers without exception.”* (Interview with Mr. Ipoeng Martha Marsikun, President Director of PT Banyumas Raya Transportasi, January 23, 2025, at the Banyumas Regency Transportation Agency office).

The public's understanding of the cashless payment system on Bus Trans Banyumas is crucial in creating service efficiency. In addition to support from internal resources such as bus drivers, understanding the public as users is critical in determining the service's success. The widespread socialization successfully attracted the interest of Banyumas Regency residents to use cashless payments on Bus Trans Banyumas, reaching a total of 1,646,801 passengers (PT Banyumas Raya Transportasi, 2024). In addition to human resources, service efficiency is evaluated based on the facilities and infrastructure provided to support efficient services. Bus Trans Banyumas is equipped with supporting infrastructure in the form of sensor devices, or TOB (Top on Bus), designed with sensor technology to read passengers' e-money card data based on the card's registered personal data. This payment device aims to improve payment efficiency without causing long queues. Based on interviews and field observations, the implementation of the cashless payment system on Bus Trans Banyumas has resulted in payment time efficiency. The driver and passengers of Bus Trans Banyumas mentioned that the time required to make a payment using an e-money card is less than one minute, while the payment time for QRIS is between 10 to 15 seconds, depending on the internet connection of each mobile phone.

Although there are technical issues related to signal connectivity and problems with TOB, the estimated time required for such problems is 3 minutes. This is considered much more efficient than the cash payment system, which takes more than 3 minutes, typically around 3 to 5 minutes, depending on the situation (Sihotang & Muhammad Irwan Padli Nasution, 2025). Therefore, using QRIS and e-money card payment methods makes it more likely for the public to choose cashless payments over cash payments. According to a survey by Sihotang and Muhammad Irwan Padli Nasution (2025), 75% of people feel that cashless payments are faster than cash payments.

### 3. Adequacy

Adequacy relates to the extent to which passengers are satisfied with the cashless payment system on BTS Bus Trans Banyumas. Based on the findings, passengers have expressed satisfaction with implementing the cashless payment system, as it offers two options for cashless payment: through e-money cards and QRIS. This allows passengers to choose the type of cashless payment that suits their needs. This is in line with the statement from a passenger of Bus Trans Banyumas who mentioned:

*This is quite satisfactory because here, as passengers, we can make payments via QRIS or e-money cards, which can be adjusted to our needs. If my E-Wallet balance runs out, I can use the e-money card, so it makes things easier for me.*" (Interview with Mrs. Trisma, passenger on Bus Trans Banyumas Corridor 2, January 20, 2025, on the Bus Trans Banyumas).

In addition to offering payment options such as e-money cards and QRIS, top-up facilities are available at each corridor's start point, allowing passengers who run out of balance to top up according to their needs. This is supported by the statement of the President Director of PT Banyumas Raya Transportasi, who said:

*"In terms of payments, I believe it provides great convenience for passengers because Bus Trans Banyumas has provided top-up facilities available at the start points or departure terminals, so passengers who have not topped up their balance can do so before embarking on their journey."* (Interview with Mr. Ipoeng Martha Marsikun, President Director of PT Banyumas Raya Transportasi, January 23, 2025, at PT Banyumas Raya Transportasi Office).

The goal of the cashless payment system in public transportation is to increase payment efficiency, meaning fast payments without causing long queues. In the case of Bus Trans Banyumas, the cashless payment method is considered effective in ensuring quick and efficient payments, which do not result in long queues. This is supported by an interview with Mr. Amry, the driver of Corridor 1 Bus Trans Banyumas, who stated:

*"The payment process using e-money cards or QRIS generally takes about 1 minute, so it is quick and does not cause long queues. If there is an issue during payment, passengers are still allowed to board first while the driver helps them until the payment is completed. So, there is never a long queue during the payment process."* (Interview with Mr. Amry, driver of Bus Trans Banyumas Corridor 1, January 21, 2025, at Terminal Pasar Pon).

This statement is further supported by a passenger of Bus Trans Banyumas, who said:

*"During my time using Bus Trans Banyumas, I have never encountered a queue during payment because the payment process is fast and does not take long."* (Interview with Mr. Afis, a passenger on Bus Trans Banyumas Corridor 3, January 31, 2025, at the Bus Trans Banyumas Pool).

*Thus, the adequacy criteria for the cashless payment system in BTS Bus Trans Banyumas have contributed to passenger time efficiency, enabling quick transactions without resulting in long queues.*

### 4. Equity

Equity refers to how implementing the cashless payment system in the BTS Bus Trans Banyumas service ensures that all segments of society benefit fairly. Based on field findings, cashless payment facilities have been distributed evenly across all buses, allowing passengers to experience the same benefits from the cashless payment system on BTS Bus Trans Banyumas. This is supported by interviews with passengers of BTS Bus Trans Banyumas, who reported numerous positive benefits from the introduction of cashless payments. Passengers mentioned that cashless payments are more convenient and practical than traditional ones. One passenger stated:

*"In my opinion, cashless payments are convenient and fair for all groups in society. This can be seen from the special fare set, which greatly helps me as a student to travel to campus."* (Interview with Rapika Trisma, Passenger of Trans Banyumas Corridor 2, January 20, 2025).

Groups such as students, the elderly, and people with disabilities also have equal access to this payment system. They have noted that the availability of cashless payment methods has made it easier to use the BTS Bus Trans Banyumas service without relying on cash. An elderly passenger also shared the following statement:

*"As an elderly person, I feel very supported by the special fare provided for us. The fare difference depends on the payment method, such as between e-money cards and QRIS. I use an e-money card because it allows me to*

*get a lower fare. This is very beneficial for me, especially in supporting my daily mobility without relying on cash. This system, in my opinion, is fair and very convenient, especially for elderly people like myself.*" (Interview with Mrs. Nariyah, Passenger of Trans Banyumas Corridor 1, January 16, 2025, at Bulupitu Terminal).

Another benefit the community experiences from the cashless payment system is the security guarantee preventing illegal bus fees. Furthermore, for the BTS Bus Trans Banyumas management, the cashless payment system facilitates more accurate and transparent transaction records, helping to prevent corruption or misuse of payment transaction proceeds. This is because transaction data is recorded digitally, making it easier for management to analyze passenger participation and serve as a reference for evaluating the BTS Bus Trans Banyumas service.

## 5. Responsiveness

Responsiveness refers to the ability of the BTS Bus Trans Banyumas management to address the community's expectations, questions, and feedback regarding the cashless payment system in the BTS Bus Trans Banyumas service. Based on field findings, one of the efforts made by the Trans Banyumas Bus management to enhance responsiveness to the public is by providing communication channels that allow the community to offer feedback or responses concerning implementing the cashless payment system. These communication channels can be accessed through the Mitra Darat application, the website, and social media platforms owned by PT Banyumas Raya Transportasi and the Banyumas Regency Transportation Office. The Mitra Darat application and "Lapak Aduan Banyumas" are designed to receive passengers' complaints, expectations, and suggestions regarding the BTS Bus Trans Banyumas service, including the cashless payment system. The availability of these communication channels demonstrates effective communication between the service provider and users.

According to interviews with the managers of the BTS Bus Trans Banyumas service, PT Banyumas Raya Transportasi, and the Banyumas Regency Transportation Office, passengers have provided various responses regarding the cashless payment system. These responses are submitted through various channels, such as the Mitra Darat application, the "Lapak Aduan Banyumas" website owned by the Banyumas Regency Government, and social media platforms through comments and direct messages (DM). Several responses from passengers regarding the cashless payment system in BTS Bus Trans Banyumas and the complaint mechanism provided by PT Banyumas Raya Transportasi are as follows:

*"In my opinion, the cashless payment system implemented on the BTS Bus Trans Banyumas service has been beneficial compared to cash payments. In addition to its practical and fast process, each bus is equipped with a QR Code Call Center that passengers can use to submit complaints, especially if there are issues with the payment process. This is very helpful because it makes it easier for us as users to provide direct feedback or complaints."* (Interview with Rapika Trisma, Passenger of Trans Banyumas Corridor 2, January 20, 2025, inside the Trans Banyumas Bus).

The results of interviews with passengers of BTS Bus Trans Banyumas also show positive responses to cashless payments, both using QRIS and e-money cards. Passengers feel that cashless payments are easier compared to cash payments because they no longer need to prepare cash, which often takes time due to waiting for change and causing long queues during transactions. Additionally, the responses provided by passengers align with their preferences in choosing a cashless payment method, either e-money cards or QRIS. Most passengers prefer using e-money for several reasons, including signal stability and the 90-minute integration fare, influencing the public's interest in using e-money cards. An interview with a Bus Trans Banyumas passenger supports this:

*"For the payment method, I prefer using e-money because it is easier and simpler compared to QRIS. Also, I benefit from the 90-minute integration fare if I need to transfer between bus corridors."* (Interview with Mr. Edo, Passenger of Trans Banyumas Corridor 3, January 22, 2025, inside the Trans Banyumas Bus).

Passengers also hope that the 90-minute integration fare service can be applied equally to the QRIS payment method to balance the participation rate of QRIS and e-money card users. In this way, QRIS users can experience the same benefits as e-money card users when implementing the cashless payment system.

## 6. Accuracy

Accuracy refers to the extent to which the implementation of the cashless payment system meets the community's specific needs in transitioning from traditional payments to digital payments. In the case of the cashless payment system on the BTS Bus Trans Banyumas, it is crucial to consider aspects such as comfort, speed, and security for the community while ensuring that no group feels marginalized or discriminated against due to their inability to access the digital technology used in the cashless payment system. To facilitate the public's understanding of the cashless payment system on BTS Bus Trans Banyumas, PT Banyumas Raya Transportasi, together with the Banyumas Regency Transportation Office, has conducted socialization efforts regarding the procedures for registering and using e-money cards and QRIS on the Trans Banyumas Bus. According to interviews with the BTS Bus Trans Banyumas management, specifically the President Director of PT Banyumas Raya Transportasi and the Head of UPTD at the Banyumas Regency Transportation Office, this socialization aims to assist the public, who were previously accustomed to cash payments, in understanding how to make cashless payments easily and comfortably. The socialization efforts were conducted at various locations, including schools, disability groups, and the general public, both directly and through digital media, such as the social media platforms owned by PT Banyumas Raya Transportasi and the Banyumas Regency Transportation Office. These efforts successfully increased public participation, particularly in registering e-money cards, which, as of 2024, have been used by 1,338,979 passengers.

Additionally, the BTS Bus Trans Banyumas management assists passengers experiencing difficulties with payment transactions by offering backup balances from the drivers as a precautionary measure in case passengers face issues or are unable to complete payments. This was confirmed in an interview with one of the Trans Banyumas Bus drivers, who stated:

*"If there is a disruption in the payment system or a passenger has trouble completing the transaction, we as drivers will assist by using the backup card and balance that each driver has."* (Interview with Mr. Ega, Trans Banyumas Driver, Corridor 3, January 20, 2025, at Bulupitu Terminal).

Accuracy can also be measured by how well the BTS Bus Trans Banyumas management can identify and mitigate potential issues that may arise from implementing the cashless payment system, such as disruptions in the payment system. To address these issues, the BTS Bus Trans Banyumas management regularly conducts checks and maintenance, particularly on e-money card scanners, to minimize transaction disruptions or difficulties. Therefore, the accuracy of the cashless payment system's implementation depends on the sophistication of the technology applied and on how well the public receives the benefits provided by the cashless payment system. Based on field interviews, passengers have shown high enthusiasm for implementing the cashless payment system on the BTS Bus Trans Banyumas service. This enthusiasm is influenced not only by the efficiency and effectiveness of the service but also by the community's eagerness to embrace innovations, given that introducing the cashless payment system is a breakthrough in the public transportation system in Banyumas Regency. This is supported by the statement of one of the Trans Banyumas users:

*"The implementation of the cashless payment system, especially in Banyumas Regency, in my opinion, is very appropriate. This is because we are in a digital age, and the transportation sector also needs to transform into digital or cashless payments."* (Interview with Mr. Afis, Trans Banyumas Passenger, Corridor 3, January 31, 2025, at Trans Banyumas Pool).

The introduction of the cashless payment system is expected to serve as a crucial tool in creating positive benefits for the advancement of digital technology in Banyumas Regency.

**Table 2. Evaluation Results**

<b>No.</b>	<b>Criterion</b>	<b>Ministry of Transportation Indonesia</b>	<b>Trans Banyumas Project</b>	<b>Evaluation</b>
1	Effectiveness	The policy aims to digitize transportation for better service.	The system has improved transaction speed, convenience, and transparency.	The policy has effectively shifted public perception and usage from cash to cashless payments.
2	Efficiency	Resources are optimized to enhance operations.	QRIS and e-money reduce transaction time and improve flow.	The system increases efficiency by minimizing transaction delays and streamlining payments.
3	Adequacy	The policy meets the transportation sector's needs.	Offering QRIS and e-money provides passengers with flexible payment options.	The system meets passenger needs by offering various payment methods and top-up stations.
4	Equity	The policy ensures equal access for all societal groups.	Both payment methods ensure access for students, elderly, and disabled passengers.	The system provides equal access, ensuring fairness for all groups.
5	Responsiveness	Communication channels are in place to gather feedback and improve the service.	Trans Banyumas uses Mitra Darat to gather feedback and address concerns.	The system is responsive to passenger complaints and improves based on their feedback.
6	Accuracy	The policy aligns with community needs and challenges.	The system is reliable, with a 90-minute integration fare for e-money users.	The system addresses community needs, although there are discrepancies in integration fare policies between QRIS and e-money users.

## CONCLUSIONS

Based on the discussion above, it can be concluded that implementing the cashless payment system in BTS Bus Trans Banyumas has effectively and efficiently achieved its intended goal, providing convenience, security, and transaction transparency and shifting the public mindset from cash to cashless payments. This is evident from passenger satisfaction when using cashless payment methods, whether through QRIS or e-money cards. For the public, the cashless payment system is considered more practical, efficient, and flexible and helps reduce queues during transactions. The preference for QRIS or e-money cards largely depends on individual needs. However, the 90-minute integrated fare policy for e-money payments has contributed to the higher preference for e-money cards over QRIS. Despite this, public enthusiasm for cashless transactions in BTS Bus Trans Banyumas remains high. This marks a positive step toward advancing digitalization in Banyumas Regency and transforming the public mindset from traditional cash payments to an entirely cashless system.

Based on the research findings and conclusions above, the researcher provides several recommendations to improve the quality of the cashless payment system in BTS Bus Trans Banyumas. First, QRIS payments should be enhanced and equalized by implementing the 90-minute integrated fare, similar to e-money card payments. This adjustment could increase public interest in using QRIS as a payment option. Additionally, BTS Bus Trans

Banyumas management should improve the quality of e-money card scanners to minimize technical issues such as bugs or freezes during payment transactions. By implementing these recommendations, the cashless payment system in BTS Bus Trans Banyumas is expected to operate more optimally and contribute further to digitalization in Banyumas Regency.

## REFERENCES

- Al Hayati, K. Z., & Al-Hamdi, R. (2019). Transportasi Publik dan Media Sosial: Persepsi Netizen Terhadap Pelayanan Bus Trans Jogja 2016-2018. *Jurnal Ilmu Pemerintahan Widya Praja*, 45(2), 127–139. <https://doi.org/https://doi.org/10.33701/jipwp.v45i2.368>
- Bank Indonesia. (2009). *Peraturan Bank Indonesia Nomor 11/12/PBI/2009 tentang Uang Elektronik (Electronic Money)*. <https://www.bi.go.id>
- Bank Indonesia. (2018). *Peraturan Bank Indonesia Nomor 20/6/PBI/2018 tentang Uang Elektronik (Electronic Money)*. <https://www.bi.go.id>
- Bank Indonesia. (2019). *Peraturan Anggota Dewan Gubernur Nomor 21/18/PADG/2019 tentang Penyelenggaraan Alat Pembayaran Menggunakan Kartu dan Uang Elektronik*. <https://www.bi.go.id>
- Dunn, W. N. (2003). *Public Policy Analysis : An Introduction* (3rd ed.). Pearson Education.
- Fadli, M. R. (21 C.E.). Memahami Desain Metode Penelitian Kualitatif. *Humanika*, 1(33–54). <https://doi.org/https://doi.org/10.21831/hum.v21i1.38075>
- Haddid Al Jabar, & Putranto, L. S. (2023). Persepsi Masyarakat Terhadap Pembayaran Digital Pada Transportasi Umum. *Jurnal Mitra Teknik Sipil*, 6(4), 995–1004. <https://doi.org/https://doi.org/10.24912/jmts.v6i3.24889>
- Jefry Tarantang, Annisa Awwaliyah, Maulidia Astuti, M. M. (2019). Perkembangan Sistem Pembayaran Digital Pada Era Revolusi Industri 4.0 di Indonesia. *Jurnal Al-Qardh*, 4(1), 60–75. <https://doi.org/https://doi.org/10.23971/jaq.v4i1.1442>
- Julieta, D., & Adharina, N. D. (2023). Faktor Kelembagaan Dalam Penerapan Pembayaran Non-tunai pada Trans Metro Bandung. *Jurnal Arsip Rekayasa Sipil Dan Perencanaan (JARSP)*, 6(3), 176–186. <https://doi.org/https://doi.org/10.24815/jarsp.v6i3.27940>
- Kementerian Perhubungan Republik Indonesia. (2024). *Dashboard Transportasi Berbasis Sistem (TBS)*. [https://mitradarat-fms.dephub.go.id/main/dashboard\\_tbs](https://mitradarat-fms.dephub.go.id/main/dashboard_tbs)
- Lee Eunji, J. J. (2021). Research Trend Analysis for Sustainable QR code use - Focus on Big Data Analysis. *Korean Society for Internet Information*, 15(9), 3221–3242. <https://doi.org/https://doi.org/10.3837/tiis.2021.09.008>
- Lestmana, R. H., & Widiyarta, A. (2022). Efektivitas Quick Response Code Indonesian Standard Sebagai Metode Pembayaran Non-Tunai Suroboyo Bus. *Journal of Education, Humaniora and Social Sciences (JEHSS)*, 4(4), 2260–2268. <https://doi.org/https://doi.org/10.34007/jehss.v4i4.1060>
- Muhammad Anwar Fathoni, S. F. (2024). Determinasi Minat UMKM Dalam Penggunaan QRIS di Jabodetabek. *Islamic Economics and Business Review*, 3(1), 468–483. <https://doi.org/https://doi.org/10.59580/iesbir.v3i1.7621>
- Nanlohy, V. (2023). *Evaluasi Program Buy-the-Service Teman Bus di Indonesia*. <https://itdpindonesia.org/wp-content/uploads/2023/02/Laporan-Full-Dokumentasi-EvaluasiProgram-Buy-the-Service-di-Indonesia-1.pdf>
- Ni Made Puriati, I Wayan Sugiartana, N. P. E. M. (2023). Efektivitas penerapan sistem pembayaran Quick Response Code Indonesia Standard (QRIS) pada UMKM di Kabupaten Karangasem. *Jurnal Ilmiah Akuntansi Dan Humanika*, 13(3), 332–338. <https://doi.org/https://doi.org/10.23887/jiah.v13i3.70942>

Policy Evaluation of Cashless Payment System in Public Transportation Services of “Trans Banyumas” Buy The Service Program in Banyumas Regency

(April Kurniawan, Aliefia Elfariiza, Alyani ‘Ainun Nafis, Anisa Afri Inayah)



- Oktavia, G. (2023). *Pengaruh Partisipasi Masyarakat Terhadap Efektivitas Program Buy The Service (BTS) Kementerian Perhubungan di Kabupaten Banyumas* [Universitas Jenderal Soedirman]. <https://repository.unsoed.ac.id/21318/>
- Patrik Aspers, U. C. (2019). What is qualitative in qualitative research? *Qualitative Sociology*, 42(2), 139–160. <https://doi.org/https://doi.org/10.1007/s11133-019-9413-7>
- Ravikumar, T., Suresha, B., Sriram, M., & Rajesh, R. (2019). Impact of Digital Payments On Economic Growth: Evidence from India. *International Journal of Innovative Technology and Exploring Engineering*, 8(12), 553–5557. <https://doi.org/10.35940/ijitee.L3432.1081219>
- Refi Arioen,Ahmaludin, Junaidi,Indriyani, W. (2023). *Buku Ajar Metodologi Penelitian*. Eureka Media Aksara.
- Rizky Ramadini Febrinda, R. N. (2022). Kesiapan Digitalisasi Sistem Pembayaran Non-Tunai di Pasar Rakyat. *Jurnal Ekonomi Dan Kebijakan Publik*, 13(2), 87–100. <https://doi.org/https://doi.org/10.22212/jekp.v13i2.2022>
- Saputri, M. H., & Atmojo, M. E. (2023). Evaluasi Strategi Peningkatan Pelayanan Transportasi Publik Melalui Pembayaran Elektronik pada Bus Trans Jogja. *Jurnal Pemerintahan Dan Kebijakan (JPK)*, 4(3), 185–191. <https://doi.org/https://doi.org/10.18196/jpk.v4i3.19020>
- Saputri. (2020). Preferensi Konsumen Dalam Menggunakan Quick Response Code Indonesia Standard (QRIS) Sebagai Alat Pembayaran Digital. *Journals of Economics and Business Mulawarman*, 17(2), 237–247.
- Sasnabila Khayyirah,Rahmat Akbar Kurniawan, S. G. G. (2022). Analisis Penggunaan Alat Pembayaran Non-Tunai Pada Tingkat Mahasiswa Universitas Islam Negeri Mataram tahun 2021/2022. *Society*, 13(1), 7–17. <https://doi.org/https://doi.org/10.20414/society.v13i1.5297>
- Sonia, Y. R., Melasari, J., & Imani, R. (2020). Evaluasi Pelayanan Angkutan Umum Melalui Pembayaran Nontunai Terhadap Jumlah Pengguna Bus Trans Padang. *Civil Engineering Collaboration*, 5(2), 61–69. <https://doi.org/https://doi.org/10.35134/jcivil.v5i2.12>
- Sugiyono. (2017). *Metode Penelitian Kuantitatif, Kualitatif, dan R&D*. Alfabeta.
- Sulistya, J. (2024). *Implementasi Program Buy The Service Trans Banyumas Dalam Mewujudkan Sistem Transportasi Berkelanjutan di Kabupaten Banyumas* [Universitas Jenderal Soedirman]. <http://repository.unsoed.ac.id/id/eprint/25732>
- Walidin, H. W., Saifullah, S., T. (2015). *Metodologi Penelitian Kualitatif dan Grounded Theory* (M. Masbur). FTK Ar-Raniry Press.