



Evaluation of the Implementation of Electronic Parking on Oto Iskandar Dinata Street in Bandung City

Rahmat Kartiwa

Al Ghifari University, Bandung, Indonesia
ojanrahmat19@gmail.com

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Abstract

Electronic Parking Terminals (EPTs) are electronic parking fee payment systems designed by computers. Electronic Parking Terminals are usually located on the side of the road or in certain places. The use of EPTs (Electronic Parking Terminals) is expected to improve services to the public, especially in terms of electronic-based parking services. When it comes to the rates charged, these are based on local regulations. The objectives of this study are 1) to evaluate the implementation of electronic parking on Oto Iskandar Dinata Street in Bandung; 2) to identify the obstacles that have prevented the electronic parking terminal (EPT) policy from being fully implemented. The method used in this research is a qualitative descriptive approach. In this case, the author aims to describe the evaluation of the implementation of electronic parking in Bandung City (case study of Oto Iskandar Dinata Street). Using data collection techniques such as observation, interviews, and documentation, the results of this study are as follows: 1) The effectiveness of the TPE program in Bandung City has been implemented in accordance with applicable regulations, but it has not been optimal in terms of other evaluation indicators that have not been met. 2) There are factors hindering the implementation of the automatic parking terminal program, namely public awareness in using TPE that is not in line with the program's objectives, inadequate parking facilities, and the number of human resources as toll collectors that is not proportional to the existing workload.

Keywords: *Parking Electronic, Evaluation, Smart City, Inovasi.*

1. INTRODUCTION

The city of Bandung is one of Indonesia's metropolitan cities. Like other metropolitan cities, Bandung has also experienced a rapid increase in the number of vehicles, both cars and motorcycles (Kireina, 2018). Based on data from the Department of Transportation, the city of Bandung has a large number of vehicles (private vehicles and official vehicles), totaling 500.000 Motorcycle, and 1,700.000 Cars. Therefore, Bandung also experiences transportation problems typical of other metropolitan cities, such as traffic congestion due to the large number of vehicles that is not proportional to the available road space, exacerbated by the limited space for parking vehicles, which results in the road shoulders being used for illegal parking, which violates rules (Saputra et al., 2017).

In this case, the Bandung city government has made efforts to prepare special parking areas and revitalize a number of sidewalks by raising them to prevent illegal parking on the road shoulders, but the results have not been optimal because there are still many vehicles parked in places that are not designated for parking. One of the efforts made by the Bandung city government was to coordinate with the Transportation Agency to find ways to resolve these parking issues by implementing a public policy of electronic parking on roads in the city of Bandung managed by the BLUD UPT Parking sub-unit of the Bandung City Transportation Agency. (Perwal No. 66 Tahun 2021). based on Local Regulations (PERDA) Bandung city Number 9 year 2010 Regarding Roadside Parking Fees and Special Parking Space Fees, this concept is one of the manifestations of a smart city. The implementation of electronic parking aims to prevent improper parking habits and illegal parking practices, thereby minimizing revenue leakage during parking fee collection. (Dewi Pradita & Utomo, 2021). In addition, this system applies progressive rates every hour. This policy is expected to increase additional revenue from parking fees. It is also expected to address the habit of illegal parking that causes traffic congestion and to regulate illegal parking in the city of Bandung. In the initial phase of implementation, there are 455 electronic parking machines spread across 221 locations on 57 roads,



operated by 700 parking attendants managed by the Bandung City Transportation Agency. (Nurfadlilah, 2023). However, over time, the implementation of electronic parking machines encountered problems. Some of the electronic machines malfunctioned due to prolonged disuse and lack of regular maintenance, as well as a lack of public awareness regarding the use of electronic parking, which resulted in many Bandung residents assuming that the machines were broken and opting for conventional parking instead (Akbar, 2022). In fact, the parking machine is already fully operational when it is used by users.

Based on the results of previous relevant research from (Suherman, 2020) Regarding the evaluation of the impact of electronic parking meter policies in Bandung City, the results of the study show that the implementation of electronic parking meters in Bandung City as part of the Smart City program has not been optimally realized, as seen from various aspects, including the use of parking meters, the payment system which is still manual, and one of the initial targets of the implementation of E-parking, namely an increase in parking fees, which is far from the target of Bandung City's Local Revenue (PAD). Other studies reveal several obstacles and problems identified due to the city government's supervision of electronic parking machines. Inadequate supervision and poor reporting by parking attendants.

2. METHOD

This research uses a qualitative descriptive method with a case approach. This research focuses intensively on one particular object studying it as a case. The case study method allows researchers to remain holistic and significant. (Nawawi, 1995) suggests that "case study data can be obtained from all parties concerned, in other words the data in this study are collected from various sources". As a case study, the data collected comes from various sources and the results of this research only apply to the case under investigation. The data collection technique in this study uses source triangulation with interview, observation and literature study methods. Data analysis techniques Researchers use the opinion of Miles and huberman in (Sugiyono, 2013) which suggests that activities in qualitative data analysis are carried out interactively and take place continuously until completion.

3. RESULT AND DISCUSSION

Policy Evaluation

According to (Siagian, 1970) The term evaluation is defined as assessment, namely: "The process of measuring and comparing actual work results with expected results. Evaluation is the process of comparing planned activities with activities that can actually be implemented. This means that evaluators cannot perform their duties without first knowing about the activity plans for an evaluation target and information about the realization of the plans that have been set in a completed process. (Siagian, 1970). According to (Wollmann, 2017) There are three types of policy evaluation, namely ex-ante evaluation, ongoing evaluation, and ex-post evaluation. Furthermore, according to (Dunn, 2015) In determining the evaluation criteria, there are six important indicators to be aware of, namely: Effectiveness, Efficiency, Adequacy, Equity, Responsiveness, and Accuracy.

Electronic Parking Terminal (Terminal Parkir Elektronik/TPE)

TPE, or digital parking meters with multipayment, are an advancement of needle parking meters. These digital parking meters accept payment in cash or by card (Wulandari, 2021). Electronic Parking Terminals are used as a means of conducting parking payment transactions on the roadside, with rates adjusted in accordance with local regulations on applicable parking service rates (Fatmawati et al., 2024)



Figure 1. TPE machine



Source: Bandung City Transportation Agency. 2025

In its implementation, TPE only accepts payments via electronic money cards with sufficient balance. Electronic money cards consist of several types, each issued by banks, both private and government banks. The types of electronic money cards that can be used for TPE parking service payments include: BRIZZI from Bank BRI, E-money from Bank Mandiri, TapCash from Bank BNI (Pratama, 2022).

Figure 2. E-money card



Source: Personal Documentation. 2025

How is the implementation of electronic parking on Iskandar Dinata Road in Bandung City evaluated?

Policies are decisions made by the state, particularly the government, as a strategy to realize the objectives of the state concerned (Tauran, 2015) The public policy referred to in this study is the Electronic Parking Program in Bandung City, which aims to prevent and deal with the large number of illegal parking attendants and apply technological innovations to public services in order to make Bandung a smart city that can serve as a good model for other cities. In evaluating the policy, general criteria were used to provide guidance for evaluators (Wollmann, 2017). The criteria formulated can be used as a benchmark in determining whether a policy is successful or



unsuccessful. Based on the primary and secondary data obtained by the researcher, the evaluation of the electronic parking program using theory (Dunn, 2015) with the following six dimensions:

1. Effectiveness

Based on the results of the study, it can be concluded that the evaluation of the implementation of electronic parking in Bandung City, a case study of Oto Iskandar Dinata Street based on Bandung City Regional Regulation Number 2 of 2020, has not achieved effectiveness indicators due to a lack of public awareness and a shortage of parking attendants to encourage the public to use electronic parking machines on Oto Iskandar Dinata Street, as well as the absence of strict sanctions to ensure the effectiveness of this electronic parking policy. the effectiveness of this electronic parking policy. (Fontana, 2024).

2. Efficiency

The efficiency referred to in this electronic parking program relates to the resources found in the electronic parking program. Resource factors have an important influence, particularly in supporting the success of this electronic parking policy. These resources are human resources, financial resources, and time resources (Siagian, 1976). In the process, the Electronic Parking Program and the number of parking attendants are ideal on Oto Iskandar Dinata Street, because one officer supervises one TPE machine unit that has undergone training in advance. The Electronic Parking Program and the number of parking attendants are ideal on Oto Iskandar Dinata Street, because one person officers supervise one TPE machine unit that has undergone prior training. Based on the results of interviews and observations, researchers assume that the human resource efficiency indicator has not yet been achieved, because operation is still limited by working hours, so that when operating hours are over, illegal parking attendants are found again and collect fees without directing people to use the TPE machine.

3. Sufficiency

The adequacy referred to in this Electronic Parking program is how to solve problems in the field and achieve the results that have been achieved from the program. According to the researcher's observations, the solution to a problem and the results achieved in this Electronic Parking Program by conducting evaluations every six months, the BLUD UPT Parking Management Section should not only evaluate the problems that occur in the field due to these factors, but also evaluate the revenue generated from parking meters. (Pratama, 2022). According to researchers, this is a wise approach to solving the problem. The results achieved from the Electronic Parking policy have also effectively addressed the issues that have arisen, namely the public's opinion that parking attendants are indifferent and the public's distrust of parking attendants.

4. Leveling

The equalization referred to in this Electronic Parking program is whether this program benefits the community and how to increase Bandung City's local revenue in the parking sector. (Dewi, 2024). The benefits of the program for the community are, of course, to pay officially and avoid violations, which contributes to regional progress. This equalization is also related to the increase in Bandung City's Local Revenue (PAD) in the parking sector, where we know that Local Revenue (PAD) income from the parking sector had declined before the introduction of these parking meters.



Figure 3. Annual revenue of BLUD UPT parking



Source: Researcher. 2025

Based on the above data, parking meters play an important role in the Local Revenue (PAD) of Bandung City in the parking sector. With these parking meters, parking revenue automatically goes into the Local Revenue (PAD) of Bandung City in the parking sector without having to change hands, thus significantly reducing the amount of leakage in the parking sector PAD. Based on the results of the researcher's observations, the shortfall in local revenue from the planned target is due to the lack of serious sanctions imposed on violations occurring in the field, such as the failure to apply progressive rates to service users and the public's unwillingness to pay according to the rates imposed. (Hia, 2019).

5. Responsiveness

Responsiveness in the Electronic Parking Program refers to the government's responsibility for this program and the benefits received by the community. The government is responsible for the Electronic Parking Program by building public trust in the government and providing ongoing socialization so that the community will switch to using government-based electronic services. (Saputra et al., 2017). In this way, the objective of the electronic parking program can be achieved, namely to make Bandung a Smart City. Feedback from the community is essential in order to facilitate and achieve the objectives of a government policy. (Suherman, 2020). This electronic parking program certainly requires feedback from the community. The community feels safe and confident with the electronic parking program because of the many benefits it provides. (Nabilah & Kusuma, 2019). Responses from the public who feel safe and confident with the electronic parking program (Alaydrus & Agustina, 2022). Due to the many benefits received, the government's responsiveness in implementing the electronic parking program was evident when the complaint team from the Bandung City Transportation Agency's BLUD UPT parking unit went directly to the field when there were complaints/problems in the field. (Nurfadlilah, 2023).

6. Accuracy

The accuracy referred to in this electronic parking program is whether the program meets the needs of the people of Bandung and whether the policy objectives have been achieved (Nabilah & Kusuma, 2019). Every policy must consider what the community needs (Dunn, 2017). The needs of the community as seen by the government, especially in the area of parking (Calcabilla & Dyastari, 2023), Therefore, the local government has launched an electronic parking program to address parking issues that have not been properly managed (Kristian & Gunawan, 2024). However, the reality on the ground shows that many people still do not understand how to operate the machine, so they continue to choose to pay the parking attendant manually in cash. (Situmeang, 2025).



What are the Obstacles in Implementing Electronic Parking on Oto Iskandar Dinata Street in Bandung?

The facts on the ground show that many people still do not know how to use the electronic parking system (Alaydrus & Agustina, 2022). This causes confusion and difficulty when starting to use it. This problem has led the target community to choose to pay directly to parking attendants. Another obstacle is that electronic parking rates in some locations are considered too expensive when using TPE machines by the community (Hia, 2019). This has caused the public to be reluctant to use the electronic parking system. Another obstacle is the lack of parking attendants. The number of attendants assisting the public in using the electronic parking system is still insufficient on busy days when vehicles enter and exit the parking area simultaneously (Fauzan, 2022). This causes difficulties for parking attendants who are overwhelmed by the surge in visitors. Another obstacle is that the electronic parking system often experiences disruptions, such as being unable to accept payments or print tickets. This causes congestion and long queues at the electronic parking location. Machine damage Some electronic parking machines often experience damage, rendering them unusable and requiring costly repairs because parking equipment components are not available in Indonesia (Suherman, 2020). This has led to a reduction in the number of available parking spaces, resulting in the region's revenue targets not being met and becoming an obstacle to achieving the initial targets of the Electronic Parking program (Pratama, 2022).

What Efforts Have Been Made to Overcome the Obstacles That Have Arisen in the Implementation of Electronic Parking on Oto Iskandar Dinata Street in Bandung?

Based on a statement from the Bandung City Transportation Agency's BLUD UPT parking unit, a system for monitoring the condition of ticket machines to ensure that each machine is functioning properly and ready for use is already in place at the agency. If there is a problem with a ticket machine, such as running out of tickets or other abnormal conditions, the Bandung City BLUD UPT parking unit will be immediately notified so that it can be addressed. The BLUD UPT Parking Authority has also made efforts to ensure that all cash parking receipts managed by parking attendants are deposited directly through the TPE. These efforts include: Implementing parking fee deposit targets through TPE using a reward and punishment method, increasing the motivation of parking service users to pay parking fees through TPE using the Customer Loyalty Application (Silope), and BLUD UPT Parking also conducts regular training and socialization for parking attendants regarding the optimization of parking machine/TPE usage every year. These efforts will continue to ensure that in the future, parking attendants can fulfill the trust of parking service users who entrust their parking fees to them for deposit into the local government treasury (Nurfadlilah, 2023). This activity must be conducted regularly to consistently remind parking attendants of their important role in supporting transparency and accountability.

4. CONCLUSION

Evaluation of the implementation of electronic parking in the city of Bandung (case study: Oto Iskandar Dinata Street) using Public Policy evaluation criteria indicators according to (Dunn, 2015), which can be seen from the effectiveness indicators have not been achieved due to a lack of public awareness and a shortage of parking attendants to encourage the public to use the electronic parking meters on Oto Iskandar Dinata Street, as well as the absence of strict sanctions to support the effectiveness of this electronic parking policy. Researchers assume that the human resource efficiency indicator has not yet been achieved, because operations are still limited by working hours, so that when operating hours are over, illegal parking attendants are found again and collect fees without directing people to use the TPE machine. According to researchers, the sufficiency indicator has been successful because evaluations are conducted by BLUD every six months. The results achieved from the evaluation of the Electronic Parking policy have also effectively addressed issues that have arisen, namely the difficulty of paying at the machine, which led to the introduction of a subscription rate. Equity indicators can be said to have been



unsuccessful because the results of observations and interviews conducted by researchers found that local revenue fell short of the planned target due to the lack of serious sanctions imposed for violations in the field, such as the non-application of progressive tariffs to service users and the public's unwillingness to pay the applicable tariffs. The results of the study show that the responsiveness indicator can be considered successful, given that the government's responsibility for the electronic parking program continues to be updated in line with issues arising in the field and includes strengthening the basic policies and regulations that are enforced. The Accuracy, based on observations and interviews, this electronic parking program does not yet meet the needs of the community. The community needs to pay parking fees in accordance with government regulations and receive good service in the area of parking. However, the reality on the ground shows that many people still do not understand how to operate the machines, so they continue to choose to use the manual method of paying cash to parking attendants.

There are two factors that hinder the implementation of electronic parking in Bandung City, Internal factors and external factors. Internal factors are factors that originate from within the relevant government agencies, namely: the quality of human resources, in this case parking attendants, and maintenance, which requires machines to be taken to the country of manufacture if they break down, because there is no relevant team of experts. Meanwhile, external factors are factors that originate from outside government agencies or from the community itself, namely: many people still do not know how to use the electronic parking system due to a lack of socialization and information to the public; as well as rates that are considered too expensive when compared to traditional parking and a payment system that not everyone has a card for.

REFERENCES

- Alaydrus, D. V., & Agustina, I. H. (2022). Kepuasan Pengendara Motor Terhadap Penggunaan Smart system parking di Ruas Jalan Braga, Kota Bandung. *Jurnal Riset Perencanaan Wilayah Dan Kota*, 53–58.
- Calcabilla, C., & Dyastari, L. (2023). Efektivitas Penerapan Parkir Elektronik (E-Pakring) Dalam Pengelolaan Parkir Di Kota Samarinda. *Jurnal Ilmu Pemerintahan*, 11(1), 9–17.
- Dewi Pradita, S., & Utomo, I. H. (2021). Efektivitas Sistem Parkir Elektronik (E-Parkir) Dalam Pengelolaan Parkir Di Kota Surakarta (Studi Kasus Jalan Dr. Radjiman) Effectiveness of Electronic Parking System (E-Parking) of Parking Management in the City of Surakarta (Case Study of. *Journal.Intelekmadani.Org*, 1(1), 33–46.
<http://journal.intelekmadani.org/index.php/jgpi/article/view/48>
- Dewi, R. A. (2024). *Pengaruh implementasi kebijakan Terminal Parkir Elektronik (TPE) terhadap peningkatan penerimaan retribusi parkir Kota Bandung periode 2018-2022*. UIN Sunan Gunung Djati Bandung.
- Dunn, W. N. (2015). *Public policy analysis* (5th ed.). New York, NY: Routledge.
- Dunn, W. N. (2017). *Pengantar analisis kebijakan publik* (Edisi Ketiga). Yogyakarta: Gadjah Mada University Press.
- Fatmawati, F., Mulyati, Y., Rusliadi, R., & Aina, A. N. (2024). Implementation Of E-Parking Management Policy In Braga Area Of Bandung City. *Jurnal Ilmiah Ilmu Administrasi Publik*, 13(2), 865. <https://doi.org/10.26858/jiap.v13i2.59011>
- Fauzan, I. Y. (2022). *Efektivitas program Terminal Parkir Elektronik (TPE) di Kota Bandung*.
- Fontana, A. D. (2024). *Optimalisasi program Terminal Parkir Elektronik (TPE) dalam meningkatkan penerimaan retribusi parkir di UPT Parkir Dinas Perhubungan Kota Bandung*. UIN Sunan Gunung Djati Bandung.



- Hia, N. M. (2019). *Persepsi pengguna parkir mengenai karakteristik inovasi terminal parkir elektronik di Kota Bandung*.
- Kireina, N. F. (2018). *Implementasi kebijakan smart parking system dan partisipasi masyarakat dalam mewujudkan Bandung Smart City*.
- Kristian, I., & Gunawan, W. (2024). Implementasi Kebijakan Program Terminal Parkir Elektronik (TPE) di Kota Bandung. *Distingsi: Journal of Digital Society*, 2(2), 15–22.
- Nabilah, F., & Kusuma, H. E. (2019). Dimensi Persepsi Penggunaan Mesin Parkir Elektronik. *EMARA: Indonesian Journal of Architecture*, 5(1), 41–45.
- Nawawi, H. (1995). *Metode penelitian bidang sosial*. Yogyakarta: Gadjah Mada University Press.
- Nurfadlilah, H. I. (2023). *Evaluasi Kebijakan Smart City Di Kota Bandung (Studi Kasus Tentang Alat Parkir Meter Pada Terminal Parkir Elektronik)*. Universitas Komputer Indonesia.
- Pratama, I. A. (2022). *Penerimaan retribusi parkir di Dinas Perhubungan Kota Bandung: Studi kasus di Jalan Ahmad Yani tahun 2020*. UIN Sunan Gunung Djati Bandung.
- Saputra, I., Herdiana, S., & Oktaviana, W. (2017). Penerapan Sistem Parkir Progresif (On Street) dalam Mempengaruhi Efektivitas Transport Demand Management Studi Kasus: Pusat Kota Bandung. *RekaRacana: Jurnal Teknil Sipil*, 3(1), 90.
- Siagian, S. P. (1970). *Filsafat administrasi*. Jakarta: Gunung Agung.
- Siagian, S. P. (1976). *Administrasi pembangunan*. Jakarta: Gunung Agung.
- Situmeang, R. M. (2025). *Pengelolaan mesin parkir elektronik di Kota Bandung sebagai bentuk penatausahaan dan pelaporan tarif layanan dihubungkan dengan pasal 11 Peraturan Walikota Bandung nomor 66 tahun 2021 tentang tarif pelayanan parkir*. UIN Sunan Gunung Djati Bandung.
- Sugiyono, S. (2013). *Metode penelitian kualitatif*. Bandung: Alfabeta.
- Suherman, D. (2020). Evaluasi Dampak Kebijakan Mesin Parkir Elektronik di Kota Bandung. *Politicon: Jurnal Ilmu Politik*, 2(1), 75–86.
- Tauran, I. P. (2015). *Evaluasi Kebijakan*. Surabaya. UNESA University Press.
- Wulandari, Y. (2021). *Efektifitas program Terminal Parkir Elektronik (TPE) di jalan Dewi Sartika Kota Bandung tahun 2020*. UIN Sunan Gunung Djati Bandung.