

Migration Parking Management System in Central Business District Pekalongan Indonesia to E-wallet Digital Online

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Abstract

Since January 1, 2001, Indonesia applied regional autonomy law that took effect in requires regions to be creative in finding sources of income that can develop finance for local governments for central governance development. In this regard, local governments must be careful in managing existing financial sources, especially those originating from regional taxes and regional levies. The potential income of each region is certainly different depending on the condition of natural resources and so on, therefore each region places a different emphasis on each source of regional income. This study aims to analyze parking management in Pekalongan City, especially after the enactment of the Pekalongan City Regulation Number 1 of 2017, and analyzed factors affecting to the implementation of the new Perda. The qualitative descriptive approach was used as a method in this research. This study found that parking management in Pekalongan City is still relatively poor. This is marked by the poor parking service provided and the goal of receiving parking fees is not consistent with the goal. Transparent and accountable management can be a breakthrough to achieving good parking services and parking retribution revenue targets.

Keywords: *Parking Policy, Central Business District, Parking Management.*

INTRODUCTION

Pekalongan City is known as Batik City and has an area of 45.25 km². BPS Pekalongan City in 2020 stated that the population of Pekalongan City was 307,150 people with gender details including 152,005 men and 155,145 women (BPS Pekalongan City, 2022b).

In the transportation sector, data shows that the number of motorized vehicles in Pekalongan City in 2020 reached 170,170 vehicles with private ownership status. Then there were 1,387 vehicles with public ownership status and 1,543 with government ownership status. So, the total number of motorized vehicles in Pekalongan City is 173,100 units (BPS Pekalongan City, 2022a). This number increases every year accompanied by an increase in the population of Pekalongan City.

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Based on phenomena in the field, it shows that the high number of residents and motorized vehicles causes high transportation movements on the roads, especially in the center of Pekalongan City. This large number of motorized vehicles certainly causes problems, ranging from increased fuel consumption, traffic jams, to parking management.

The rapid increase in the number of motorized vehicles is not commensurate with the available road capacity. This situation causes traffic jams in the city of Pekalongan. On the one hand, the high rate of increase in motorized vehicles in Pekalongan City is an indicator of improving the community's economy, but on the other hand, it affects the volume of vehicles on main highways, causing traffic jams (Said et al., 2019).

Congestion is the main indicator of traffic irregularities that often occur in urban areas, including Pekalongan City. Although traffic jams are not a new phenomenon, road on average, large cities in the world, both in developing and developed countries, often experience traffic jams. Congestion problems often occur, especially during school and work departure times, namely in the morning, and when they return, namely in the afternoon (Firdausi, 2006).

In Pekalongan City, traffic jams often occur in the area Central Business District (CBD), namely in the Alun-Alun area. This place has increasingly become a tourist attraction for the people of Pekalongan City and outside Pekalongan City since it was renovated. The renovation took place in 2018-2019 and was available for the public to enjoy in January 2020. The giant gate, which is located in the eastern part of the Alun-Alun and directly opposite the main entrance to Plaza Pekalongan, has become the new icon of Pekalongan City. The Pekalongan City Public Works and Spatial Planning Service (DPUPR) stated that this arrangement was carried out in order to expand the provision of public space. On the east side of the square, not only a gate was built, but a garden and public toilets were built. Then on the north side of the square it is equipped with several ornaments and photo spots for visitors. In the Pekalongan City Square area there is the largest shopping center in Pekalongan City, namely Plaza Pekalongan. Apart from that, there are also shops, hotels, mini markets, schools, culinary outlets, banking offices and places of worship in this area.

CBD is an area that has the potential to become a travel attraction that triggers the movement of people and vehicles. The high attractiveness of vehicle travel to an area is greatly influenced by the use of private vehicles. The greater the use of private vehicles, the greater the mobility of vehicles to that area. Vehicles entering the square need space to park. The higher the speed of vehicle movement towards the location, the greater the need for parking space (Safitri, 2019).

The movement of vehicles towards the Pekalongan City Square area does not only come from the people of Pekalongan City, but all people in the former Pekalongan Residency area. The high movement of vehicles towards the CBD results in an increase in the need for parking space. Currently, the number of parking spaces available in the CBD is out of balance with demand, resulting in vehicles not only crowding the intended parking spaces, but also the roadways (Said et al., 2019).

In this regard, infrastructure planning is the key to the rapid transformation of parking management in the CBD (Samaranayake et al., 2023). If there is a special parking area and road management as a parking area in the CBD is carried out optimally, then parking will not be a problem. On the other hand, if parking can be managed well it can become a source of Regional Original Income (PAD).

Plaza Pekalongan is the largest shopping center which attracts quite a lot of vehicle movement in Pekalongan City. Currently, the management of Plaza Pekalongan has prepared parking facilities at the rooftop or the top floor of the Plaza Pekalongan building. The parking area is quite large and is considered sufficient to accommodate all visitor vehicles, especially at busy times such as weekends. The applicable parking rates

use a flat rate system, namely IDR 6,000 for cars. This rate applies to one parking lot and there is no hourly rate increase. Determination of parking rates follows the internal management policy of Plaza Pekalongan where parking management is fully managed by Plaza Pekalongan internal parties. This parking area is specifically intended for visitors who drive using four-wheeled vehicles (cars) only.

However, the problem is, plaza visitors tend to prefer to park their vehicles on the side of the road on the grounds that Plaza Pekalongan's parking facilities are considered to be poor. This situation can be seen from the access road from the parking space to the plaza entrance which is in poor condition and dirty. Based on several previous studies, parking in workplaces based on evolutionary optimization algorithms that implement electrical systems can reduce costs by 2% (Poniris & Dounis, 2023). Apart from that, the use of detection technology with magnetic sensors is more effective for large parking lots (Zhang et al., 2023). Also, parking online systems smart is known to have a lot of positive potential that brings strength and business opportunities (Aditya et al., 2023). This modern parking management system is expected to be able to solve several problems related to parking management in the CBD, such as the amount of parking fees does not correspond to the number of vehicles parked, the parking revenue target has not been achieved, and the parking fee technique is not in accordance with the directions of the Pekalongan city government.

The implementation of parking on the edge of public roads certainly has a negative impact, one of which is a factor causing traffic jams. Congestion gets worse in the afternoon and on weekends. Not to mention, when the month of Ramadan arrives, apart from being used for parking, seasonal takjil vendors also make traffic jams worse, especially in the afternoon before breaking the fast. Parking rates requested on the edge of the highway for two-wheeled vehicles IDR 2,000 while for four-wheeled vehicles it is IDR 3,000.

In general, parking management in Pekalongan City appears to be lacking optimally reflected in the low annual parking levy collection. The Pekalongan City Transportation Department reported that parking fees, especially on the side of the Pekalongan City highway, as of December 31 2019 reached IDR 1.24 billion or around 78% of the total regional target of IDR 1.6 billion (Wulandari, 2020). Endang Kostaman as Head of Transportation Development said that the Pekalongan City Transportation Department has currently managed 424 parking points spread across Pekalongan City. The parking lots that have the greatest opportunity to increase regional income in the city of Pekalongan include Jalan Hayam Wuruk, Jalan Hasanudin, Jalan Sultan Agung, the Sorogonen Square area and the main square which can contribute up to 60%.

Less than optimal parking management in Pekalongan City is demonstrated by unsatisfactory parking services. There are several complaints submitted by people who use roadside parking, including, first, in some places parking officers often do not give parking cards. This means that parking money withdrawals by parking officers do not show official proof. Second, sometimes the parking rates charged in some places are twice as high as the rates set by Pekalongan City Regional Regulation Number 1 of 2017 concerning Amendments to Pekalongan City Regional Regulation Number 21 of 2011 concerning Levy for Parking Services on the Side of Public Roads. Third, the land or parking space is inadequate and unsafe. It is often found, especially in busy centers, that parking spaces use the road, causing traffic jams. Parking lots that take up half the road are often found in the Pekalongan City Square area and shopping areas on Jalan Sultan Agung, Pekalongan City. As a result, vehicle mobility is disrupted, not to mention there are street vendor stalls along the main square area which further worsens traffic jams. Fourth, there is no guarantee that the car will be parked by the valet (parking attendant), which means that the valet service appears to be limited to providing rental space without actually maintaining the vehicle as a valet's responsibility.. Fifth, many people do not know the parking rates set by the local government for each type of vehicle parked on

public roads, so many parking attendants take advantage of this opportunity to ask for parking rates that do not comply with the provisions.

This less than optimal parking management must be a serious study for the Pekalongan City Government by considering several factors. First, the number of motorized vehicles in Pekalongan City will continue to increase along with the growth of Pekalongan City's population so that with the increase in the number of motorized vehicles, logically income from parking fees will definitely increase. As an illustration, the number of motorized vehicles in Pekalongan City in 2018 was 157,332 units. This number increased to 173,100 units in 2020 and continues to grow today. Second, the amount of parking fees has increased since the enactment of Pekalongan Regional Regulation No. 1 of 2017. Logically, the parking rates have increased, of course increasing the amount of income from the parking sector. Third, low parking fee income is an indicator of suboptimal implementation of parking management policies. Fourth, many people are annoyed with unsatisfactory car parking services.

This research aims to identify problems with the implementation of parking management in Pekalongan City, especially after the enactment of the Regional Regulation Pekalongan City Number 1 of 2017 and identify what factors are obstacles to implementing the new Regional Regulation. Therefore, it is hoped that this research will be able to provide input in the management of parking governance in Pekalongan City so that the potential target for parking levy income in the APBD can be achieved every year.

RESEARCH METHODS

This research approach is qualitative with descriptive analysis methods. The informants for this research consisted of officials at the Pekalongan City Transportation Service (3 people) and the policy target community (5 people). Research informants are determined using certain criteria or techniques purposive sampling. The selection of informants was carried out specifically, that is, the selected informants had to understand the aims and objectives of this research. Primary data collection was carried out through in-depth observations and interviews, while secondary data came from written literature reviews, as well as data analysis including data presentation, data reduction and drawing conclusions.

The aspect analyzed for the first research question is how to implement parking management policies in Pekalongan City. Here we will examine the conformity between regulations and reality in the field. Furthermore, for the second research question, the elements to be analyzed are based on George C. Edwards III's Policy Implementation Theory which includes aspects of resources, settings, structures, administrative apparatus and communication.

RESULTS AND DISCUSSION

Parking Management Regulations in Pekalongan City

Efforts to improve parking management by the Pekalongan City Government began with the issuance of regional regulations (Perda). First, Pekalongan City Regional Regulation Number 16 of 2016 concerning Parking Management. One of the important points of this regional regulation is regarding parking arrangements outside the highway (off the street) and parking on the road (on the street). This regional regulation also regulates permits, obligations and responsibilities, prohibitions, and procurement of parking tickets for parking operators. Then secondly, Pekalongan City Regional Regulation Number 1 of 2017 Amendment to Pekalongan City Regional Regulation Number 21 of 2011 concerning Retribution for Parking Services on the Side of Public Roads. In this regional regulation, parking fees are increased to IDR 1,000 for two-wheelers, IDR 2,000 for four-

wheelers. The tariff increase is of course aimed at increasing regional income which can be used as a source of development financing in Pekalongan City. Information about the amount of tax rates More details can be seen in the table below:

Table 1 Pekalongan City Parking Rates

No.	Type of Motor Vehicle	Regional Regulation No. 21 of 2011	Regional Regulation No. 1 of 2017
1	Two wheels	Rp. 500,-	Rp. 1,000,-
2	Tricycle	-	Rp. 1,000,-
3	Four wheels	Rp. 1,000,-	Rp. 2,000,-
4	More than four wheels	IDR 3,000,-	IDR 15,000,-

Source: Regional Regulation no. 21 of 2011 and Regional Regulation No.1 of 2017 (processed)

Apart from containing the nominal amount of the parking levy rate which depends on the type of vehicle, another important thing arises from the regulations regarding parking lot management. According to Pekalongan City Regional Regulations, parking management in Pekalongan City is divided into two, namely parking management by the regional government and business entities or individuals (private). Local government parking management is the implementation of parking management carried out on spaces belonging to public roads. Use of street space for parking may only take place on city streets in accordance with parking controlled zones. Utilization of road space for parking can be in the form of public roadside parking and/or additional parking. In managing parking lots, local governments can collaborate with third parties.

Technically, the management is carried out by the Pekalongan City Transportation Department (Dishub). Considering that privately managed parking is the provision of parking outside public roads, whether carried out in connection with the main business or carried out as a side business, including motor vehicle parking businesses.

Complex Parking Problems in Pekalongan City

Until now, the parking problem is still a quite complicated and unsolved problem in Pekalongan City. Although the Pekalongan City Government has attempted to improve parking management through regional regulations which contain regulations regarding parking management, in practice several complex problems have been found.

The discrepancy in the parking rates collected by parking attendants from parking service users with the parking rates stated in Regional Regulation No. 1 of 2017 is still a problem. For this reason, researchers conducted an in-depth interview with one of the parking attendants in the Pekalongan City Square area. Informant S admitted that he had been working as a parking attendant since Hypermart opened for the first time. Every day he opens his parking lot from 10.00 to 21.00 WIB. It only provides motorbike parking. The tariff applied is IDR 2,000 for each motorbike. He said that this tariff was generally applied, apart from that, his party also charged a helmet fee for every parked vehicle so that at any time there were parking service users who lost their helmets. He and the other drivers were ready to take responsibility. He admitted that the parking area where he parked had a permit from the Transportation Department. Therefore, every day informant S must hand over a deposit to officers from the Transportation Service in the amount of Rp. 40,000.-. Usually, the deposit is taken personally by officers from the Transportation Department where they operate. Only after the deposit is deducted, the rest is shared with fellow jukirs as the result of their sweat.

In other areas, such as in front of Alfamart (still in the Pekalongan City Square area), unique incidents occurred. Even though there was more than one parking attendant there,

apparently the Transportation Department only gave parking attendant vests to only one person. In fact, there are an average of 6 to 12 jukirs operating in that area, so they work according to a system shift. Not only that, informant N, who is a car park attendant in the northern area of the square, revealed that he has enforced his own parking fee regulations for the last four years. He said that the parking rates set by the Pekalongan City Government had expired because it has now entered 2022, while the replacement regional regulation, namely Pekalongan City Regulation No. 21 of 2011, was issued in 2017. On the other hand, the regional regulation regarding the provisions on parking fees does not appear to be enough to be known by all parking service users. One of the parking service users, informant R, admitted that he did not know about the regional regulations that regulate the provisions for parking rates on the side of the road. Even so, he considered the parking fees charged by car drivers to be burdensome. But it couldn't be helped, he didn't want to take issue with the jukir.

Responding to this, the Head of the Traffic Guidance Section of the Pekalongan City Transportation Service, Endang Kostaman, said that it was the Department of Transportation's duty to provide guidance. Endang explained that in 2018 his party had investigated violations by the jukir, including those who did not use attributes. Apart from combing through violations committed by traffickers, his party also found as many as 87 illegal parking lots which were secured at the Police Station in November-January 2019 (Triyono, 2020). Some have even been taken to court in relation to illegal parking. The team's search was carried out in accordance with the Mayor's Decree. This was done as an effort to prevent violations. But in practice, the team simply gave warning letters. When combed, the jukirs often play hide and seek. A number of goalkeepers stole the opportunity to commit violations when the team was not on duty.

Realization of Parking Levy Revenue in Pekalongan City

The existence of Regional Regulation No. 16 of 2016 and Regional Regulation No. 1 of 2017 allows the Pekalongan City Government to maximize revenue from the parking sector. In fact, if managed well, parking management can be a promising source of local revenue. Head of the Traffic Development Section of the Pekalongan City Transportation Service, Endang Kostaman, said that until now The Pekalongan City Transportation Department has managed 424 parking points spread across all points in the city of Pekalongan starting from the parking location on Jalan Urip Sumoharjo, where each parking point is adjusted to its assignment. Letters from designated parking attendants are supported by equipment such as special parking attendant jackets, flags, whistles, lights, etc. Parking lots that have the highest rates in Pekalongan City and have the potential to increase parking rates include Jalan Hasanudin, Jalan Hayam Wuruk, Jalan Sultan Agung, Sorogenen area and the main square which can contribute up to 60%.

At the end of 2019, income originating from parking fees in Pekalongan City as of December 26 2019 amounted to Rp. 1.205 billion or 75% of the target set by the regional government of Rp. 1.6 billion. Even though the realization is still less than 25 percent, the Department of Transportation is optimistic that the Regional Original Income (PAD) from the target levy at the end of next year can exceed the target.

Meanwhile, at the end of 2020, parking levy income in Pekalongan City as of November 30 2020, had reached Rp. 875 million, or 87.5 percent of the regional target of Rp. 1 billion.

Then quoted from Antara Jateng, Young Policy Analyst, Parking Sub Coordinator, Pekalongan City Transportation Service, Hari Putra Setiawan, said that the achievements of the parking sector in 2021 touching figure Rp. 1.06 billion, from the target of Rp. 1.2 billion. This achievement is quite good considering that the COVID-19 pandemic is still ongoing (Kutnadi, 2022).

Apart from collecting parking fees on public roads (on the street), Pekalongan City Transportation Agency also collects parking fees for parking off street, such as on Jalan Veteran in front of Kraton Hospital and the track terminal as well as additional parking (usually during activity events). To achieve the stated goals, the Pekalongan City Transportation Department formed a Parking Management and Supervision Team consisting of members of the Sub-denpom, Police, Prosecutor's Office, Satpol PP and related agencies (Triyono, 2020).

Factors Inhibiting the Implementation of Parking Retribution Policy in Pekalongan City

In this case the researcher took policy implementation theory by George C. Edwards III, because this study focuses more on organizations or institutions that manage the implementation of parking bonus policies in the city of Pekalongan, so it places more emphasis on the elements that exist in an organization or organization such as resources, settings, structure, administrative apparatus, and communications (Edward III, 1980).

Resource

The existence of an agency or unit that implements each policy occupies a very important position, because the existence of this agency or unit will be able to determine authority, responsibility and a clear division of work programs (Sujianto, 2012). It is hoped that the determination of authority, responsibility and workload will enable the implementing organization or agency to carry out its duties as well as possible. Therefore, to support the implementation of policies that have been entrusted to the organizing body, of course qualified people are needed, both technically and practically. Having superior quality human resources will help organizations easily implement policies that are in accordance with the goals, objectives and benefits to be achieved. Apart from quality human resources, organizations responsible for policy implementation also need to provide policy support facilities so that all existing human resources can be utilized with these supporting facilities. If the organization responsible for implementing the policy has adequate human resources and supporting facilities, the next step is to clearly allocate the authority and responsibility of each human resource. This is done so that there is no overlap in the implementation of work assigned to each human resource. The division of authority and responsibility will also require each employee to be able to complete a number of jobs assigned to him by the organization.

Disposition

The behavior or attitude of law enforcement officers through disposition also becomes an obstacle to the parking bonus policy. The attitude element of the policy enforcer is the will or intention of the policy enforcer, who is both the enforcer of the policy and the aim of the policy. These intentions and desires come from the internal environment, namely the person responsible for implementing the Ministry of Transportation's policies, and from the external environment, namely the main beneficiary community. Because if you have the will and courage to be able to produce a car parking pricing policy in accordance with the responsibilities and tasks assigned, of course implementing the proposed policy will be easier. The influence of stakeholder tendencies or attitudes can be explained from three sub-dimensions, namely stakeholder response or compliance and responsiveness, community participation and support, support from political elites in implementing paid parking policies. The success of a policy is also influenced by the level of community participation and support from political elites involved in implementing the policy as well as the responsiveness of the policy implementers themselves. The orientation or attitude of enforcement officers influences the implementation of parking fee policies because the Ministry of Transportation's attitude is not firm in resolving operators' problems, as well as parking agents, parking attendants and operators who are less familiar with regional regulations. management of public road access and parking fees in Pekalongan City.

Bureaucracy

The bureaucracy in question is an institutional structure that supports policy implementation so that no one experiences difficulties in implementing the policy. Therefore, a well-functioning institutional structure is a prerequisite for effective government policy. Structure is the arrangement of the elements of an organization so that they are in their respective positions and functions, so that they are effective in achieving the stated goals. Structure is an attempt to organize or arrange work in a logical way so that the goals that have been set can be achieved. The bureaucratic structure has a big influence on the implementation of established policies. Organizational assessment cases greatly influence the success of policy implementation. To find out the magnitude of the influence of bureaucratic structure on the implementation of parking fee policies, it can be seen from the administrative structure indicators, namely bureaucratic support, implementation of operational standards and distribution of policy implementation.

Communication

Communication is a factor that influences the conveying of information from one party to another, in this research article the party conveying it from the Pekalongan City Transportation Service to the parking officer about the applicable regulations.

Electronic Parking as a Solution to Overcoming Parking Management Problems.

There are several regional taxes, based on Law no. 28 of 2009, one of which is parking tax which is a city/regional tax. Parking levies are a reliable source of PAD income in Pekalongan City, because Pekalongan City has the smallest area compared to the surrounding districts. To optimize and increase PAD, professional and transparent parking tax management is needed (Susanto et al., 2017).

Web-based digital parking has a positive impact on modern communities (Mudjanarko & French, 2023). This must be balanced with lower progressive average parking prices in high parking demand clusters between 5.6%-12.5% (Ornelas et al., 2023). Intelligent parking system with app mobile able to overcome problems in the transformation of infrastructure existence in smart cities (Aditya et al., 2023; Amari et al., 2023; Gunarto et al., 2023; Kujawski & Nürnberg, 2023; Morais, 2023; Poh et al., 2023; Rafique et al., 2023; Zong et al., 2023).

According to Ardiansyah (2016) in his research, parking fees are the second largest contributor to income after market tax in the city of Pekalongan. However, in the management and collection of parking fees there are still several problems, including a lack of supervision in the field, parking attendants who do not comply with the specified time, and irresponsible individuals using the parking lot to make a profit and make a profit. Not all parking revenue goes to city government officials, and officials only issue tickets that valet parking does not have to pay. A solution to the problem of overcoming losses in parking management is through the implementation of electronic parking ore-parking so that the process of monitoring all problems related to parking can be carried out well and have an impact on increasing Regional Parking Tax revenues. Another impact of-parking is that it will provide better and more satisfying service to the public in the parking area.

Management of abandoned parking fees is an obstacle faced by the Pekalongan City Transportation Department so PAD revenue from the parking sector is less than optimal. There are indications of bias in reporting the results of collecting parking fees for valet services, even though the type and amount of parking fees are clearly stated in Regional Regulation No. regulation number 22 of 2011 concerning special parking places and areas regulation number 1 of 2017 regarding changes to regional regulation number 21 of 2011.

For this reason, the e-Parkir business flow is as follows:

- 1) Parking fees are paid non-cash using a smart card (smart card) which the public can buy at shops appointed by the Transportation Service or through parking attendants who can top up their balance.
- 2) Parking officers handle parking users who have finished parking in the car park with smart cards owned by the community.
- 3) The process or flow of parking transactions is carried out in the following sequence:
 - a) The parking officer scans the barcode located on the smart card.
 - b) The balance available on smart cards will decrease.
 - c) Proof or parking transaction receipt will be sent via SMS or WA to the parking service user's cell phone
- 4) Directly, the Transportation Department can monitor the financial management of parking services through a system real time. To make it clearer, the flow of the e-Parkir business can be seen in the following picture:



Figure 1: e-Parkir business flow

Source:(Susanto et al., 2017)

CONCLUSION

Overall, parking management in Pekalongan City is still poor. This is characterized by a decrease in parking services provided and parking ticket agreement objects that do not meet targets. Poor parking supervision is a manifestation of less than optimal parking tax regulations. The existence of illegal parking attendants who also act as parking supervisors adds to the problem of parking management in Pekalongan City. The success of a valet service depends a lot on parking service management. Transparent and accountable management can be a breakthrough to improve parking services and achieve parking rate targets. For this reason, so that parking management in Pekalongan City is more optimal, the Pekalongan City Government must be serious about engineering the management of parking fees as well as reorganizing parking management in accordance with the Regional Regulation. Organizing collaboration with third parties (private) in the

form of services-parking used as an alternative service by the Pekalongan City Government. If this case is carried out, it will have at least three impacts on the Pekalongan City Government; firstly, the city government's income through parking service fees will increase, secondly, it will reduce the level of leakage of parking service fees, and thirdly, it will increase the satisfaction of parking users (the public).

Digital intelligence-based electric parking is a parking system in modern communities that is able to solve parking system problems in smart cities. Research on this system needs to be carried out in cities in developed countries as a suggestion for future studies.

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