

# Artikel Aldy

*by Aldy Lk*

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## **SIMULATION OF PUBLIC ROADSIDE PARKING TARIFFS AS AN EFFORT TO ELEVATE REGIONAL RETRIBUTION**

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### **Abstract**

In the Ponorogo Regency RPJMD (Local government medium-term development plan) 2016-2021, the vision and policy direction taken by the local government is to increase people's welfare based on religious and cultural values. Regarding regional taxes and regional retribution (PDRD), regional autonomy can be implemented accurately, broadly, responsibly, and independently for government financing, and regional development can be adequately realized through local own-source revenue (PAD). On local own-source revenue, one of the sources of retribution is the public roadside parking tariff. In this case, Ponorogo Regency has a long road, which requires an effective and efficient parking arrangement. This study, therefore, aims to simulate and analyze parking retribution in Ponorogo Regency. The research method used descriptive quantitative and was carried out in several parking zones in Ponorogo Regency. The simulation employed a comparison between fixed, progressive, incidental, and a combination of the three. The simulation results uncovered that weekday retribution includes a fixed tariff at 21.38%, the combined tariff at 32.08%, and the incidental tariff at 46.52% of the total retribution revenues. On weekdays, there was a potential difference between fixed and combined tariffs of 10.69%, and the difference in potential retribution between combined and incidental tariffs was 14.44%. In addition, the parking tariff retribution during incidental activities revealed a fixed tariff of 21.43%, a combined tariff of 32.14%, and an incidental tariff of 46.41% of the total retribution revenues for incidental activities. The difference in potential retribution during incidental activities between fixed and combined tariffs was 10.71% and between combined and incidental tariffs was 14.27%.

**Keywords:** Parking, Parking Tariff Simulation, Ponorogo Regency Regional Retribution

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## **INTRODUCTION**

Every year, an area must experience an increasing number of vehicles, likewise in Ponorogo Regency. Based on data from the Samsat (One-stop Administration Services Office) of Ponorogo Regency, the number of motorized vehicles by type in the sequence was 394,947 units in 2017, 426,768 units in 2018, and 491,778 units in 2019. Pasha Mahessa (2021) also explained that the number of motorized vehicles recorded in Samsat Ponorogo had increased yearly, especially on two-wheeled and four-wheeled vehicles. With the increase in the number of vehicles that are not matched by the number and area of parking spaces, it will undoubtedly create a condition where "parking becomes difficult and irregular." This phenomenon will impact traffic congestion on the road, reduce the quality of the city's aesthetic beauty in Adipura's assessment, and even reduce people's enthusiasm to go out of the house. The gap between the increasing number of vehicles and parking conditions will create a problem that needs to be analyzed thoroughly and systematically.

Based on Law Number 28 of 2009 concerning Regional Taxes and Regional Retribution, Ponorogo Regency Regional Regulation Number 3 of 2016 concerning Public Service Retribution, and Ponorogo Regent Regulation Number 95 of 2017 concerning Changes in Parking Service Retribution Tariff on Public Roadside, one of the agendas is an effort to increase the local own-source revenue (PAD) in the sector. As a result, Ponorogo Regency will explore and develop the supporting sector as a potential that needs to be organized. In this case, the service of providing a parking space is part of one of the conveniences for motorists/drivers. In addition, the collection of taxes and retribution in accordance with established regulations can be carried out evenly and not burden the community, especially in Ponorogo Regency.

However, the regulations made do not always go according to plan. In implementation and practice, obstacles and problems can arise. Obstacles emerge due to the parking management process, problems related to tariff differences, and differences in the potential and realization of retribution revenue receipts at each place when operating in the field. Here, parking management can be one of the functions that can reduce the level of difference between the potential and the realization of the parking retribution revenue. In urban areas with congested road conditions, new challenges will certainly show up, including concerns for urgent vehicles that do not need to park, but on the other hand, it is necessary to utilize and maximize parking space.

Research (Muzhar, 2020) elucidated that providing suitable parking spaces can reduce traffic flow disturbances and lower congestion on urban roads. Related to that, on-street parking is a major problem often encountered on urban roads. This phenomenon is also common in urban streets in the City of Al-Najaf, Iraq. In addition, the types of parking facilities are divided into on-street and off-

street parking. Besides, unlimited parking spaces can be done with free parking, while limited parking is usually controlled parking. Furthermore, on-street parking can cause a decrease in road capacity in two ways: narrowing the width of the road so that traffic flow is limited and causing a loss of road capacity that leads to congestion in urban areas. On-street parking can also be one of the causes of danger and risk for road users. Therefore, it is necessary to have strategies and programs that refer to the use of more well-organized parking resources. These challenges require adjustments in parking prices or tariffs and can even lead to an idea of real-time parking pricing considered more effective.

Moreover, related to government revenues in the economic sector, parking activities are one of the potential sources of city revenue. Since parking conditions on the side of the road can lead to reduced road capacity and decreased traffic segments, thereby lowering the speed of vehicles, it is necessary to determine the obligation to pay (retribution) for vehicles parked on the side of the road. It is under the Ponorogo Regency Regulation Number 3 of 2016 and Ponorogo Regent Regulation Number 95 of 2017. For this reason, this study aims to analyze and simulate parking tariff schemes, divided into fixed, progressive, combined, and even when in incidental conditions. Later, the expected benefit of this research is to contribute ideas and recommendation options for policymakers.

## **LITERATURE REVIEW**

### **Parking Space**

Based on Article 1 point 15 in Law Number 22 of 2009 concerning Road Traffic and Transportation, parking includes: "Parking is a condition where the vehicle stops or does not move for a while and is left by the driver." In Law Number 28 of 2009 concerning Regional Taxes and Regional Retribution (Law No. 2/2009), article 1 number 32 reads: "Parking is a stationary state of a vehicle that is not temporary."

Concerning the previously described law, parking tariffs are also referred to as parking retributions, which are included in the type of public service retribution, as stated in Article 110 paragraph (1) letter e of Law No. 28/2009, namely "Retribution for Parking Services on Public Roadside."

Meanwhile, Article 109 of Law No. 28/2009 reads: "The object of public service retribution is a service provided by the local government for public interest and benefit and can be enjoyed by individuals or entities." Furthermore, Article 115 of Law No. 28 of 2009 explains that "the object of retribution for parking services on a public roadside, as referred to in Article 110 paragraph (1) letter e, is the provision of parking services on the public roadside determined by the local government in accordance with the provisions of the legislation." However, in the parking tariff stated in Law No. 28 of 2009 Article 127 letter e,

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the type of retribution for business services includes the retribution for special parking spaces.

In the Government Regulation of the Republic of Indonesia Number 43 of 1993 concerning Road Traffic and Infrastructure, it is further explained that the determination of the location and construction of parking facilities for the public is carried out by taking into account the following matters: first, the general plan for regional spatial planning; second, safety and smooth traffic; third, environmental sustainability; fourth, convenience for service users. The implementation of parking facilities for the public is carried out by the government, Indonesian legal entities, and Indonesian citizens. The operators of public parking facilities may charge fees for the use of facilities on the condition that they must always try to maintain order, security, smooth traffic, and environmental sustainability. Besides, parking vehicles on the road can be done parallel or at an angle according to the traffic direction. Meanwhile, the parking space unit (SRP) measures the effective area for placing a vehicle (passenger car, bus/truck, or motorcycle), including free space and the door opening width for four-wheeled vehicles. A parking space unit is also a unit of measure needed to park vehicles according to various forms of provision. The parking space size can be affected by a. standard vehicle dimensions, b. free space for parking vehicles, and c. width of the vehicle door opening.

#### **Parking Tariff Scheme**

Peak hour traffic is the traffic volume that occurs during the busiest hours. The most active hours arise at different times, such as morning, afternoon, and evening. Vice versa, non-peak hour volume is when it occurs during off-peak hours (Wang Yan-ling, Wang Xin, 2016). Various studies on the scheme have been carried out (Dale, S., Frost, M., Ison, S., Quddus, M. and Warren, 2017) on the workplace parking levy (WPL) scheme by increasing the non-domestic private parking levy provided by entrepreneurs. In this regard, the city in England, i.e., Nottingham, in April 2012 became the first city to implement such a scheme. An autoregressive time series model that considers the impact of exogenous variables was used to evaluate the impact of introducing WPL on congestion. Subsequent research (Carvalho e Ferreira, D., and de Abreu e Silva, 2017) used a proposed online system, namely curb parking. In this case, on-street parking can also be referred to as curb facilities. A curb is a row parking by providing a side along the roadside, either one side or two sides of the road. The row can be an unlimited facility if the duration of parking is free, while it can also be a limited facility if the maximum duration for parking is determined. Limited facilities may be provided to avoid obstacles and problems due to parking.

In his research, Muzhar (2020) focused on two traffic jams in Al-Rawan and Al-Iskan to investigate the characteristics of on-street parking. Data were

collected directly in the field utilizing drones, video cameras, and manual calculations. The data included average parking turnover, waiting time, and type of parking. The results of his research uncovered that the waiting time for most of the parking vehicles at both locations was more than 80% for 30 minutes, so it can be concluded that illegal parking behavior is typical in these locations, both on weekdays and weekends. The suggestion is a more structured parking arrangement and provides a particular parking location even though it is off the road. Here, parking management is the best solution to the parking problem. Parking management with a specific plan can provide various economic, social, and environmental benefits. Thus, the application of parking management is recommended not to park on roads close to specific locations, such as pedestrian crossings, intersections, schools, and others. For this reason, an effective type of parking management is smart parking. Smart parking systems reflect modern and easy methods of handling information collected from sensors and then translated into commands and information by management systems via mobile applications or variable messages. The management system includes reducing vehicle mileage search time and can also reduce pollution. With parking management, it is hoped that it can create convenience for customers.

Furthermore, research (Chu et al., 2017) studied the substitution effect on parking costs to set parking prices. The results of the five scenarios showed that the optimal parking costs at least vary in time efficiency. The results revealed two innovative strategies for pricing parking tariffs based on origin and destination. These strategies include destination parking pricing (DPP) and original destination parking pricing (ODPP). Then, the study recommends adding a general function of parking tariffs for car users. Pricing is also carried out (H. Wang, Li, Cara, & Shang, 2020), and parking pricing is considered a tool to improve parking management and reduce traffic congestion. Their study examined the effect of time-varying prices, including parking duration and turnover, on off-street parking characteristics in Nanning City, China. The results demonstrated that parking duration decreases as parking prices increase (the elasticity relationship increases).

The research is supported by Mo, Kong, Wang, Cara, & Li (2021), who also scrutinized the effect/impact of pricing policy interventions for on-street parking management and user satisfaction with Regression Discontinuity Design (RDD), Structural Equation Model (SEM), and Binary Logistic Regression (BLR). The results exposed that the increase in parking tariffs significantly reduced parking volume by about 20% and parking duration by about 10%. Policy adjustments also led to higher parking prices, shorter parking distances to destinations, and more empty parking spaces. After the policy intervention, users were less sensitive to price but more to improve the overall quality of parking satisfaction. In this regard, J. Wang, Wang, & Zhang (2020) examined optimal

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parking pricing with a parking permit distribution strategy to eliminate additional costs arising from competition for parking spaces. Their research proposed a hybrid management scheme with parking prices and parking permits. The results also showed that the hybrid scheme (combined) on parking prices is more effective than the pure parking scheme.

Then, Gore, Dave, Shah, Arkatkar, & Pulugurtha (2021) examined the effect of on-street parking on pedestrian characteristics to design efficient pedestrians. The research sites were in three areas of the central business district (CBD) of the main metropolitan city of Gujarat, India. Based on videography techniques, the investigation revealed that the effect of vehicles parked on the pavement surface (PSF) could reduce the speed and density of pedestrians by 14% compared to non-parked pavement surfaces (NPSF). In Indian cities, on-street parking requests are governed by an odd-even date scheme, and different pavement surfaces are developed for parking and pedestrian services. Meanwhile, in their research (Assemi, Baker, & Paz, 2020), they assessed the effect of parking habits and parking search times in three central business districts (CBD) of Brisbane, Australia. The results uncovered that around 80% of users who parked daily in the CBD found a parking space of fewer than three minutes, while almost 50% of users who occasionally parked in the CBD had to find a parking space of five minutes longer. It is concluded that the purpose of the trip also affected the time to find a parking space; there was a negative relationship between traffic volume and search time. Thus, the suggestion given is that users will tend to avoid peak traffic and provide real-time parking information to avoid congestion.

Moreover, the study by Lu, Huang, Guo, & Xiong (2021) also analyzed daily commuter trips following the same city's morning and evening departure schedules. Based on the Nash balance principle, it is to determine the parking location and choice of commuter departure time in the morning or evening. Parking fees will vary depending on location and time. Parking fees are also differentiated based on the order of arrival of commuters. The concept of this research is the same as Fu, Wang, Liu, & Huang (2021), who explained that parking density and price could significantly influence commuter arrival time choices. Thus, the solution offered is to provide a discounted parking fee scheme for ridesharing, thereby saving 50% of the cost.

In Indonesia, (Prasetyo, 2017) researched the title "*Analysis of public roadside parking and tariff simulations for increasing retribution for Magelang City.*" The analysis and simulation of parking retribution were carried out at the study locus of 11 parking blocks in Magelang City with quantitative descriptive research methods sourced from secondary data. Furthermore, the simulation compared fixed tariff levies, progressive tariffs, and a combination of both. The simulation results then produced fixed tariff retribution of 16.71% of the total retribution revenue, while with the combined tariff, the potential value of 57.95%

was obtained, or there was a difference in the potential retribution of 41.24% when using a combined tariff.

### RESEARCH METHODOLOGY

This study employed mixed data analysis methods, i.e., descriptive, quantitative, and qualitative. The data sources used were primary data, with surveys and interviews as data collection methods from parkir attendant and policymakers. The data collection technique was accidental sampling in 3 zone (Zone A, Zone B, Zone C). The mapping of roads used as on-street parking activities is divided into three zones with several parking sections, as displayed in Table 1 below:

**Table 1: Ponorogo Regency On-street Parking Zone**

Parking Zone	Street	Parking Location
Zone A-1	Jl. Hos Cokroaminoto	Tk. Mas Dewi - Tk. Roti sekar jaya, TK. Mas Mahkota candra until Omega Jaya and SMPN 1, Tk. Mumi II (Jl. Thamrin), in front of BNI, Tk. Sinar Jaya siang, Tk. Sinar Jaya until nasi pecel malam, Tk Sinar Jaya Pagi, Tk. Sampurna, Tk. Harapan, Tk. Abadi, Swalayan Surya, Populer, Tk. Sumber mumi, Ngepos, PKL Utara Pertigaan Ngepos, and in front of Toko Mas
Zone A-2	Aloon-Aloon	Jl. Aloon-Aloon Timur, Jl. Aloon-Aloon Barat, Es oyen aloon-aloon selatan, Jl. Aloon-Aloon Selatan, and Jl. Aloon-Aloon utara.
Zone B-1	Jl. Soekarno Hatta	Praktek Dokter Puspa/ pagi + Dr. Ruli, Soto Lamongan in front of the building of bakti/plastic, Pasar Stasiun, Tk. Moroseneng - Tk. Morodadi, Tk. Saerah, Tk. Prima Jaya / TK Irian, Tk. Star - Tk. Kalisa, Ruko Jarakan, Tk. ACC, and Mbok Rah.
Zone B-2	Jl. Gajah Mada	Tk. Angkasa, Queen salon, Tk. Murah, Ruko BCA, in front of BCA until Agus jaya foto II, Roda 4 Taman in front of BCA, TK. Raya - TK. Jaya Saksi, Naavagreen, TK. Laris Manis, TK. Gatokaca until Kurnia Diesel, Ruko Ngepos, Bank Danamon, Tk. Nabila, Tk. Lancar jaya, and in front of STMJ.
Zone B-3	Jl. Jend. Sudirman	Tk. Matahari - Sate Gule, Tk. Tosana and Tk. Sumber Mumi, Tk. Niki motor until Tk. Tas Lumayan, Tk. Matahari - Depot madiun, Tk. Abadi, Tk. Sami Jaya, Sate Gule in front of DPD Golkar, Tk. Agung, Tk. Sophie Martin, Soto Ali, BRI Jend. Sudirman + Rocket Chicken, Soto Borang Aloon-Aloon, and WOW Coffee.
Zone B-4	Jl. KH. Ahmad Dahlan	Semar, Tk. Inti Aroma, Tk. Ratna sari, and Luwes



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Zone C-1	Jl. Sultan Agung dan Jl. Basuki Rahmat	Pos Mode, Tk. Delta foto, Joglo manis, Bebek Goreng Depan Joglo, Dunia mainan, Sukses Susu, Latare cafe/maret, TK. Karunia Foto, Jet Print, BRI Sarpon, Ayam Goreng Okas, Tk. Semangat and Bakso mandala, TK. Agya, Pasar Tonatan, Warung Bu Ayu, Apotik Bening, Fresh Mild Suromenggolo, Pertokoan Jeruksing, Puskesmas Jenangan, Gule in front of PCC, TK. Ratna Sari Panci, and Mie in front of PCC.
Zone C-2	Jl. Gatot Subroto	Tk. Talangagung, Tk. Besi Muda Makmur, Tk. Sumber sehat until Baru Motor, and TK. An Motor
Zone C-3	Jl. Diponegoro dan Jl. Trunojoyo	Tk. Angkasa Motor, Sumber Makmur, Dinamika temak, Artomoro cellular, Apotek Karya Husada, Toko Sumber Jaya-Depot Ayam Bakar, TK. Benang Kencana, Mie Ayam Pak Mo Barat Aloon-Aloon, Salon iin, in front of Masjid Jami', in front of Masjid Jami' (East Road), TK. Sabar Jaya Cell, in front of Pegadaian, TK. Kencana, TK. Mahkota, Tk. Bima Motor - in front of RSU Aisyiyah, in front of BRI, Trunojoyo diesel, and Sate Gule Trunojoyo.

*Source: Department of Transportation, 2023*

Then, the scope and respondents targeted in this study were the number of public roadside parking in Ponorogo Regency. The data obtained included the location of three parking zones in Ponorogo Regency, the number of vehicles parked at peak hours, non-peak hours, and in incidental conditions, details of the percentage of parking vehicles, both two-wheeled and four-wheeled, and the amount of parking revenue in the parking zone under study. Then, the data obtained were analyzed and simulated using a comparison between retribution and fixed tariffs, progressive tariffs, and a combination of the two.

## ANALYSIS AND DISCUSSION

To develop the transportation system, the Ponorogo Regency Government arranges development that creates smoothness, order, security, safety, and comfort. The primary road network system developed includes arterial (national), collector (provincial), and local (urban) roads. Public roads are in the secondary road network system within the regency and strategic roads. Based on Law Number 3 of 2004, Government Regulation Number 34 of 2006 concerning Roads, and Ponorogo Regency Regional Regulation Number 1 of 2020 concerning Road Implementation and Traffic Management, the road network system is a unified road network that connects and binds growth centers with areas under the influence of their services in a hierarchical relationship. In the

development area unit, this road network connects continuously between first-level cities, second-level cities, third-level cities, and others. In addition, it also connects the first level city with the first level city between development area units.

Specifically, the population of Ponorogo Regency in 2020 reached 949,320 people with an area of 5,119,905 ha. Ponorogo Regency also has the advantage of a strategic location, which is located as the center of regional activities in Madiun - Pacitan - Trenggalek - Wonogiri (Central Java) - Magetan, so it has a vital role both as a collection center and as a distribution center for its hinterland areas. The total length of roads according to the level of government authority in Ponorogo Regency in 2021 was 1002.35 km, each of which was divided into three parts: state roads with a length of 42.83 km, provincial roads with a length of 43.41 km, and regency/city roads with a length of 916.11 km. In addition, the Ponorogo Regency's road network pattern is radial, and some of it is a grid pattern. It is beneficial if it is associated with a rapid and equitable urban growth system. The road network that passes through Ponorogo Regency consists of provincial, regency, and urban roads. The provincial road in the north connects Ponorogo Regency and Madiun City, while the south connects Pacitan and Trenggalek Cities. The overall length with secondary and primary functions based on the RUTR (General Spatial Planning) of Ponorogo Regency, which does not include secondary local roads and the environment, is 73,737 meters. Furthermore, the local road network functions as a liaison between the centers of the smallest residential units (hamlets) with cities or regions with a higher regional level. Local roads are spread evenly throughout Ponorogo Regency. Besides, the Ponorogo Regency transportation sector arrangement is regulated by the Ponorogo Regency Transportation Service. The complete and detailed position of the parking zone can be seen in the map in Figure 1 below.

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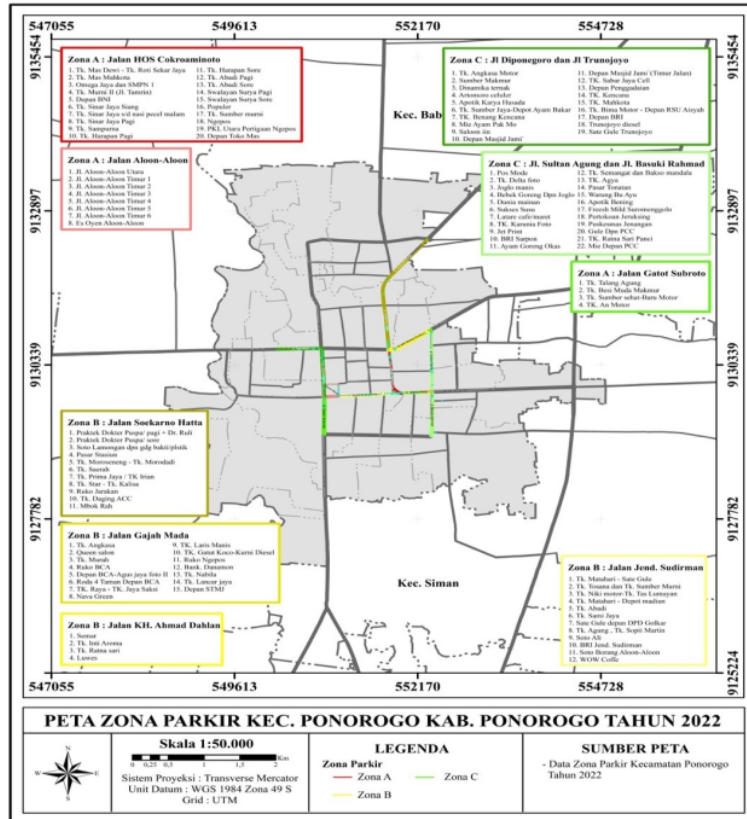


Figure 1: Map of Ponorogo Parking Zone in 2023  
Legend: Parking zone Zone A, B, C

On-street parking has two categories: roadside areas without parking controls and roadside areas with parking controls. Roadside areas without parking control are the most common type of parking, and the arrangement is not controlled, causing traffic flow disturbances. It is different in areas with parking control, where service facilities are more regular, and the flow of vehicles in and out conditions are more controlled. Even though the area is on the road, it will still interfere with the smooth traffic flow.

The determination of the tariff scheme is carried out in four categories, including a) fixed tariffs, based on payments during peak hours and non-peak hours, with the same amount of value paid, and a payment system for tariffs that does not differentiate the length of time parking for a vehicle; b) progressive tariffs, based on peak hours, with different payment values determined in the first time unit and the next time unit; it means that the payment system for the amount of the tariff takes into account the length of time a vehicle has been parked; c) a combination of fixed and progressive tariffs; d) incidental tariffs, based on certain conditions, or there is an ongoing activity/implemented in that place, with temporary activities in nature and not exist all the time. Based on the tariff categories, the tariff simulation at the beginning of Table 1 regarding the tariff potential can be shown.

**Table 2:** Conditions of Peak Hours, Non-Peak Hours, and Revenue per Day (Weekdays-IDR)

Zone	Weekdays			Revenue per Day (IDR): Bike IDR500, Motorcycle IDR1,000, and Car IDR2,000
	Number of Parking Vehicles			
	Peak Hours	Non-Peak Hours	Total	
Zone A-1	1,008	732	1,740	2,100,000
Zone A-2	992	368	1,360	782,500
Zone B-1	152	104	256	318,000
Zone B-2	224	132	356	448,000
Zone B-3	256	72	328	144,000
Zone B-4	452	20	472	590,000
Zone C-1	1,232	256	1,488	1,854,000
Zone C-2	400	152	552	504,000
Zone C-3	1,072	196	1,268	1,488,000
<b>Total Revenue in One Day</b>				8,228,500

*Source: Research data, processed*

In Table 2, the results showed that each part had a different quantity of parking vehicles in each parking zone. Zone A part 1 is an economic activity block located on the Hos Cokroaminoto road section as one of the new tourism icons of Ponorogo Regency, while the lowest number of parking vehicles was in the position of Zone B part 3, namely Jalan Jend Sudirman, which became the fast lane when the one-way road was started. The parking tariffs in Table 4 were calculated based on the multiplication of the number of parking vehicles with the tariffs for IDR500 for bikes, IDR1,000 for motorcycles, and IDR2,000 for cars.

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The tariff conditions were used as fixed tariffs during peak and non-peak hours, regardless of the quantity. Table 4 also describes the number and revenue of parking during weekdays. However, in Ponorogo Regency, there are also certain incidental conditions. Incidental activities include commemoration of holidays, community activities, government activities, and others, which certainly have different parking tariffs. The results of parking tariffs during incidental conditions are shown in Table 3.

**Table 3:** Conditions of Peak Hours, Non-Peak Hours, and Revenue per Day (Incidental Activities-IDR)

Zone	Incidental Activities (Holidays, Community Activities, and Others)			Revenue per Day (IDR): Bike IDR500, Motorcycle IDR1,000, and Car IDR2,000
	Number of Parking Vehicles			
	Peak Hours	Non-Peak Hours	Total	
Zone A-1	4,032	2,928	6,960	8,400,000
Zone A-2	3,968	1,472	5,440	3,130,000
Zone B-1	608	416	1,024	1,272,000
Zone B-2	896	528	1,424	1,792,000
Zone B-3	1,024	288	1,312	576,000
Zone B-4	1,808	80	1,888	2,360,000
Zone C-1	4,928	1,024	5,952	7,416,000
Zone C-2	1,600	608	2,208	2,016,000
Zone C-3	4,288	784	5,072	5,952,000
<b>Total Revenue in One Day</b>				<b>32,914,000</b>

Source: Research data, processed

The calculation results of parking tariffs during incidental activity conditions showed a drastic increase in daily revenue. It is because many people came out with vehicles to see performances, for example, *grebeg suro*, heritage carnivals, concerts, and others. Zone A part 1 was a block for organizing activities that pass through the Hos Cokroaminoto road section, while the lowest number of parking vehicles was in the position of Zone B part 3, namely Jalan Jend Sudirman, which is a fast lane and limited parking locations. Parking tariffs in Table 3 were calculated based on the multiplication of the number of parking vehicles with the tariffs IDR500 for bikes, IDR1,000 for motorcycles, and IDR2,000 for cars. In fact, parking tariffs that might be charged during incidental activities were mostly not based on the Regent's Regulation tariff (tariffs outside the Regent's Regulation), namely IDR1,000 for bikes, IDR2,000 for motorbikes,

and IDR5,000 for cars, and some even charged IDR3,000 for motorbikes and IDR10,000 for cars.

Meanwhile, the results obtained between the combined (progressive) tariff and the incidental tariff were IDR10,414,000 per activity. It signifies that if the assumption of one year is calculated the same as the calculations made in the final PAD report, the parking space belonging to the Ponorogo Regency Road in 2021 was 312 working days. Therefore, if accumulated, the potential retribution revenue was IDR 3,249,168,000, IDR 2,607,888,000 more than the calculation results in the final report on PAD for parking spaces belonging to Ponorogo Regency in 2021. Then, the revenue still had to be reduced by the cost of operating personnel (parking attendants) in one year so that the potential revenue was IDR 7,321,392,000 when using a combined tariff, and the potential incidental tariff obtained was IDR 10,570,560,000, or there was still potential revenue of 18.16% from the combined tariff scenario.

### **CONCLUSION**

The simulation results analysis showed that the weekday fixed tariff retribution was 21.38% of the total retribution revenue. The combined weekday tariff earned a yield of 32.08%, and the incidental tariff on weekdays was 46.52% of the total retribution revenue. On weekdays, there was a potential difference between fixed and combined tariffs of 10.69% and a difference in potential retribution between combined and incidental tariffs of 14.44%. In addition, the parking tariff retribution during incidental activities with a fixed tariff was 21.43%, the combined tariff was 32.14%, and the incidental tariff was 46.41% of the total incidental activity retribution revenue. The difference in potential retribution during incidental activities between fixed and combined tariffs was 10.71%, and the difference in potential retribution between combined and incidental tariffs was 14.27%.

In this case, the combined and incidental tariffs have the potential to be applied, but a parking regulation policy is needed to find an agreement/compromise between the number of parking spaces designated for moving vehicles (arranging existing zones). In technical parking, it is also necessary to make provisions for parking with the function of delivery vehicles, both short and long parking in each available parking zone. It helps provide public services to increase user (community) satisfaction. Therefore, it is necessary to design parking lots and driveways in such a way that they do not interfere with road traffic, especially in zones where the intensity of the number of parking vehicles is high and the road conditions are not wide enough. Moreover, information technology intervention is required to ensure and support that the interests of the existing business units along the road can be improved by a neat, beautiful, and good parking arrangement. In zones close to public transport

access, it is necessary to ensure that parking and public transport transit policies are complementary; for example, car parking facilities adjacent to express bus routes will improve the passenger rate of public transport. In addition, monitoring and evaluation need to be carried out to maintain the surrounding environment's character by limiting parking and enforcing land use control. In this regard, it is also necessary to study efforts to control the supply and demand for parking through tax mechanisms, encourage short-time parking, and limit long parking. Thus, it can function to improve the main trading area because the character of parking in Ponorogo Regency tends to be in certain zones, which have relatively high economic activity and community activities.

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