
Parking Service & Hospitality Aspect: Learn from Malioboro, Yogyakarta

Yorri Kusuma Nugraha¹, Siti Sumaryatiningsih²

¹Mahakarya Asia University Yogyakarta, ²Village Community Development College
¹yorrikn@gmail.com, ²siti.sumaryatiningsih@gmail.com

ABSTRACT

The special region of Yogyakarta has diverse tourist attractions, including the famous Malioboro area, despite its small size. Malioboro has been a cultural tourism hotspot since the early 1800s, offering delicious food, historical sights, and cultural arts performances. As a result, Malioboro attracts a lot of tourists who require adequate parking facilities. However, an issue has arisen regarding the imposition of coercive parking fees, which has garnered significant attention on social media platforms and negatively impacted tourists' satisfaction. This study presents an immediate and medium-term solution to the parking problem faced by tourists in Malioboro, Yogyakarta. Immediate measures include conducting regular inspections and enacting laws to prevent parking violations by businesses. In the medium term, the study recommends the introduction of electronic parking systems to minimize direct contact and enable integrated monitoring by operators and municipalities. These measures are aimed at improving the park experience, restoring trust and boosting Yogyakarta's reputation as a popular tourist destination. This study contributes to the destination management literature by highlighting the importance of resolving parking issues to provide a pleasant experience for tourists in Malioboro and similar locations. The results provide valuable insights for policy makers, tourism authorities and parking operators to develop effective strategies to manage parking facilities and increase visitor satisfaction.

Keywords: *tourism, parking services, parking tariff, e-parking, policy*

I. Introduction

Basically, humans are inherently social creatures with a strong curiosity to explore and understand their surroundings, whether it be their immediate environment or far-flung territories. This innate curiosity has driven humans to venture into remote areas, even in the absence of comprehensive information, as they see it as a challenge worth pursuing. This exploration instinct can be traced back to the European expeditions of the 15th century, which led to colonialism in various Asian, African, and American countries.

In modern times, the concept of tourism has emerged, encompassing voluntary travel by individuals or groups to destinations beyond their home environment. Tourism is associated with the desire to explore, experience, and appreciate the beauty of nature, as well as fostering cross-cultural and cross-state relations due to advancements in commerce, industry, and transportation. The concept of tourism was formulated by E. Guyer Freuler, who emphasized the changing circumstances and the conscious evaluation of the need to appreciate nature's beauty.(Hanief & Pramana, 2018)

The Republic of Indonesia regulates tourism through law number 10/2009 on Tourism. According to this law, tourism refers to travel activities undertaken by individuals or groups for recreational purposes, personal development, or to learn about the unique aspects of visited tourist destinations within a temporary period. The act recognizes tourism activities as part of human rights, linked to the freedom of travel and leisure (Undang-Undang Nomer 10 Tahun 2009 Tentang Kepariwisataaan, 2009). Hence, it can be understood that tourism contains several elements:

- a. Travel activities
- b. Done Voluntarily
- c. In a temporary period
- d. Intended to enjoy tourist objects and attractions

Yogyakarta Special Region (Daerah Istimewa Yogyakarta/DIY), as one of Indonesia's provinces and a prominent tourist destination, possesses the potential to offer diverse tourism themes, including natural and cultural tourism. DIY's relatively small area provides an advantage, allowing tourists to explore the region within a shorter timeframe compared to other provinces. The Yogyakarta government has set a vision for DIY to become a leading tourist destination in Southeast Asia by 2025, leaving only two years until the targeted year(Desembriarto et al., 2022). This vision aims to boost Yogyakarta's economy by increasing tourist visits, resulting in higher circulation of money and improved local economy.

However, it is important to note that the tourism sector is interconnected with various other sectors. This interdependence is a common occurrence in many

industries. For instance, let's consider the education sector, which is closely linked to the information technology sector, the economy, and the infrastructure sector. The ongoing pandemic has compelled us to adapt technology in the teaching and learning process. The quality of education is influenced by the overall economic well-being, and conversely, a weak economy can hinder the provision of quality educational services. Moreover, students may face difficulties attending school or accessing online learning resources if the infrastructure is inadequate. Thus, understanding the interconnections between sectors is crucial in fostering the growth and development of the tourism industry and ensuring its harmonious relationship with other sectors for sustainable progress.

The tourism sector has close link with the security, information technology, financial (particularly digital financial services for payment transactions), and the transportation sector, including parking services. The link between tourism and the transportation sector is primarily related to the accessibility of tourist destinations through land, sea, or air transportation modes. Moreover, the emergence of online transportation services has provided an alternative means of transportation for tourists, reducing reliance on conventional public transportation. Well-maintained access roads to tourist sites and reliable cellular signals for accessing online transportation services have further facilitated tourist mobility.

This paper focuses on exploring one specific aspect of transportation closely related to tourism: parking services. It aims to investigate how the quality of parking services impacts the overall image of tourism in an area. Furthermore, parking services can be seen as an element of hospitality in a tourist destination, contributing to the overall travel experience of tourists.

To achieve the objectives of this study, a comprehensive methodology will be employed, including a literature review and data analysis. The literature review will involve the systematic examination of relevant academic articles, books, reports, and other scholarly resources to gather secondary data. These sources will provide insights into the relationship between parking services, tourism, and hospitality. The data analysis will involve the careful examination and interpretation of the collected data to identify patterns, themes, and key findings.

By using a qualitative approach, this study aims to gain an in-depth understanding of the impact of parking services on tourism and hospitality. The collected data will be critically analyzed to draw meaningful conclusions and provide recommendations for enhancing parking services in tourist destinations.

II. Discussion

The relationship between the tourism sector and transportation extends beyond mere accessibility concerns, encompassing various facets such as parking services. According to Hobbs (1995), parking becomes a necessity when individuals arrive at their destination and require a place to store their vehicles while engaging in personal, public, recreational, and service-related activities.(Irawan et al., 2013). The availability of suitable parking spaces at activity centers is crucial for facilitating seamless travel experiences. This connection with transportation modes holds particular significance given that the majority of tourists, especially in Yogyakarta, rely on land transportation rather than pedestrian means.(Fatimah, 2022)

Vehicle usages here will certainly require supporting infrastructure, such as location or land that can be used to accommodate vehicles, while the vehicle owners or passengers who are tourists carry out the desired activities in tourist destinations. If there are no parking facilities, it will disrupt the function of the surrounding land because it will provoke vehicle users to park their vehicles at any point they deem appropriate. The disturbances caused are not only related to traffic (traffic jams), but can also cause social unrest in the local community.

For Yogyakarta Special Region itself, it does have the potential for natural tourism and cultural tourism. The tourist areas in Prambanan, Merapi and the south coast of DIY have been included in the KSPN (national tourism strategic area) according to Government Regulation of the Republic of Indonesia number 50 of 2011 concerning the 2010-2025 National Tourism Development Master Plan. For nature tourism, several well-known tourist spots are the Kaliurang/Merapi area; the south coast area in Bantul and Gunung Kidul Regencies and the Menoreh mountain area in Kulon Progo. This does not include other spots that are smaller in scale, such as hilltops or rice fields, which have become a new tourism trend since

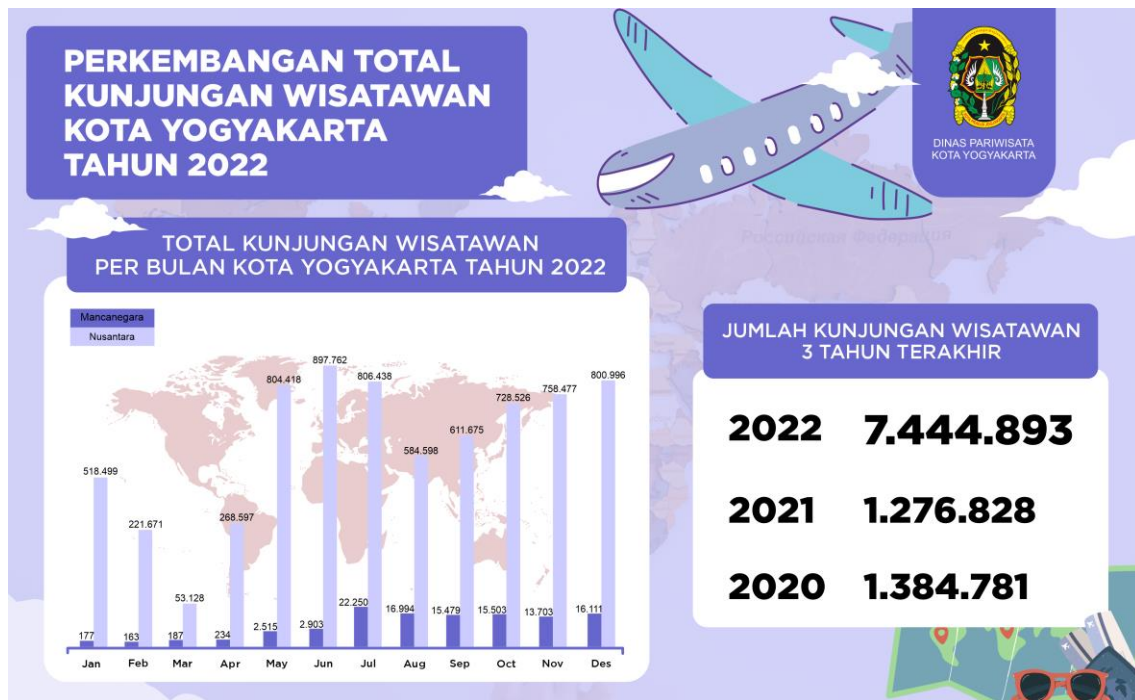
2021, such as in Puncak Sosok, Bantul or in Nanggulan, Kulon Progo.(Peraturan Pemerintah RI, 2011)

Regarding cultural tourism, DIY offers notable attractions such as the Prambanan temple, shopping malls, traditional markets, and the iconic Malioboro area, all of which have been incorporated into Indonesia's national tourism strategic area. Malioboro has long been recognized as the heart of Yogyakarta. The road was constructed concurrently with the Sultan Palace (Kraton). The term "Malioboro" derives from the Sanskrit word for a bouquet, possibly stemming from the historical tradition of adorning Malioboro road with flowers during significant Kraton events. Alternatively, it may have been influenced by the name of a British colonial figure named Marlborough, who lived in the area from 1811 to 1816 AD.

The existence of Malioboro road is inseparable from the concept of the city of Yogyakarta which is laid out longitudinally in a north-south direction, with streets that lead to the cardinal points and intersect perpendicularly. This pattern is strengthened by the existence of an "imaginary axis" that stretches from north to south, with the Kraton as the midpoint. The "axis" is manifested in the form of a building, from Tugu Yogyakarta (Pal Putih) in the north, to the south in the form of Margatama (Mangkubumi) and Margamulya (Malioboro) roads, Sultan Palace, D.I Panjaitan road and , ending on the Krapyak stage. If the starting point (Tugu) continues north, it will reach Mount Merapi, while if the end point (Krapyak Stage) is continued, it will reach to Indian Ocean.(*Official website - Yogyakarta Special Region*, n.d.)

Even though DIY has many other tourist attractions, there is an impression among tourists who come to Yogyakarta, if you haven't visiting Malioboro, then you aren't visited Yogyakarta. This iconic impression is understandable because in the southern part of Java, there is no place like Yogyakarta, unlike the northern part of Java which has Jakarta, Surabaya or Bandung. If we visit these cities without visiting the landmarks, it just normal, unlike visiting Yogyakarta.

Data from the Yogyakarta City Tourism Agency for the period of 2020-2022 provides insights into the number of tourist visits as follows (Yogyakarta City Tourism Authority, n.d.)¹:



The visitation patterns in 2020 and 2021 experienced significant deviations compared to 2022, primarily due to the uncontrolled Covid-19 pandemic. During this period, travel restrictions and safety concerns greatly affected tourist behavior. However, it is noteworthy that prior to the pandemic, a substantial number of tourists visited Malioboro, often considering it an essential destination to explore during their time in Yogyakarta. The allure and significance of Malioboro as a cultural and commercial hub in the region have established it as an iconic and must-visit location for many travelers.

To cater to the influx of tourists, several parking lots have been established in the Malioboro area. These parking facilities serve as essential infrastructure to accommodate the high volume of vehicles brought by visitors. The availability of designated parking lots ensures that tourists have a convenient

¹ <https://pariwisata.jogjakota.go.id/detail/index/354>

and secure space to park their vehicles while they explore the attractions and activities in Malioboro. By providing these parking options, the local authorities aim to enhance the overall visitor experience and alleviate any parking-related concerns that may arise. There are some parking lots in Malioboro :

1. Abu Bakar Ali parking lot
2. Malioboro Mall
3. Sriwedari parking area
4. Limaran parking area
5. Malioboro 2 parking area after Beringharjo market
6. Ngabean parking lot
7. Ramai Mall
8. Beskalan parking lot
9. Ketandan parking area, beside Melia Purosani

This does not include parking spots managed by communities, such as on the Suryatmajan section or behind the Ramayana shopping center and south side of the Yogyakarta Presidential Palace, as well as parking spots outside the Malioboro area such as on Mangkubumi (Margo Utomo) road. Overall, parking rates in the Malioboro area ruled by Yogyakarta City Regional Regulation number 2/ 2020 and Yogyakarta Mayor Regulation number 132/2021(*Yogyakarta City Mayor Regulation, 2021*):

Table 1. The table of parking retribution

Vehicles	First 3 hours	Every hour next
Big bus	Rp 75.000	Rp 25.000
Medium bus	Rp 50.000	Rp 15.000
Vehicles	First 2 hours	Every hour next
Car	Rp 5.000	Rp 2.500
Motorcycle	Rp 2.000	Rp 1.500

Source : Yogyakarta City Regional Regulation number 2/ 2020 and Yogyakarta Mayor Regulation number 132/2021

The presence of parking infrastructure in Malioboro is undeniably beneficial for both the local community and tourists as it provides a convenient temporary parking solution, allowing them to fully enjoy the vibrant atmosphere of Malioboro. However, there is a concerning issue regarding the collection of

parking fees, where tourists often perceive the fees as excessive or exceeding the official regulations.

Instances of parking fee discrepancies have been reported in the Malioboro area. For instance, on May 30, 2021, a car driver was charged a parking fee of IDR 20,000. Similarly, on January 20, 2022, a tourist bus faced an exorbitant parking fee of Rp. 350,000. In another case in December 2022, a motorcycle owner was charged Rp. 5,000 for parking. These incidents often arise during peak tourism periods, such as Eid al-Fitr and Christmas holidays, prompting complaints from visitors regarding the parking situation in Malioboro. (*Viral Cases of Parking Service in Yogyakarta - Part 2*, n.d.)

The incidents of excessive parking fees in Malioboro have had a negative impact on tourists, and the issue has gained significant attention through social media platforms. While the financial burden of paying Rp. 5,000 for motorcycle parking or Rp. 20,000 for car parking may be manageable for vehicle owners, the exorbitant fee of Rp. 350,000 for bus parking is unjustifiable. This practice can be seen as a form of corruption perpetrated by certain individuals within the community. It is important to consider the cumulative effect of such practices. For instance, if a parking lot with a capacity of 100 motorcycles charges each vehicle owner Rp. 5,000, the total revenue should amount to Rp. 500,000. However, any deviation from this expected amount, such as an excess of Rp. 200,000, indicates a potential misappropriation of funds. If left unaddressed, this deviation could escalate, leading to even greater financial discrepancies.

The discomfort experienced by tourists is further exacerbated by the behavior of parking personnel who forcefully enforce parking fees, as well as the absence of guarantees for parked vehicles in the event of damage. These three factors, those are tariff violations, coercive payment practices, and the lack of vehicle protection, contribute to a sense of unease. Such issues have significant implications for the reputation of Yogyakarta tourism, particularly in light of the destination's branding as a comfortable and affordable tourist spot. The expectation from both tourists and the local community is that traveling in Yogyakarta should be highly enjoyable that Yogyakarta cares for comfort. The hospitality aspect plays a crucial role in shaping the overall performance of the

tourism sector. The behavior exhibited by stakeholders in tourist destinations significantly impacts tourists' satisfaction levels and shapes their perceptions. Therefore, it is imperative for stakeholders to prioritize the hospitality aspect and strive to create positive impressions that align with the expectations of visitors across all economic segments, as they form a vital part of Yogyakarta's strategic tourism market.

Probably the tourist attractions offered can also be found in other places, but the comparative advantages regarding low prices will also be contradictory if the parking rates are beyond the provisions. This may seem trivial, but because this has happened several times, of course this will erode the potential for tourists to visiting Yogyakarta. Social media platforms also help to provide a snowball effect. Positive publications can glorify Yogyakarta's tourism potential, but on the other hand, it also multiplies the negative effects when negative phenomena occur, especially when its occur frequently. We must understand that parking is also related to hospitality aspects. People are expected to leave their vehicles at parking locations so that they are able to optimally enjoy tourist attractions. Enjoying the spectacle of cultural arts attractions, looking at the commodity goods/services offered, tasting the culinary delights that are sold; surely it can only be done on foot, because this is not like in Safari Park which requires us to be in a vehicle so that we are not attacked by wild animals.

The second goal from parking existence is to create traffic order for the local community. We can not allow tourism activity creating traffic chaos because of the inability to organize vehicles visiting these attractions. As a consequence, parking services must also be have standard, in this case about parking rates according to regulations and parking attendants who are able to serve in a friendly and kind manner. If the parking operator really applies parking rates to consumers correctly, then the friendliness aspect will definitely be obtained because there is no need for commotion between consumers and parking attendants. However, if parking operators charge parking rates above the provisions, then there will definitely be conflicts or commotion with consumers because of coercion and the majority of consumers already know the amount of parking rates that should be or what they feel is reasonable. Consumers may choose not to have conflicts with

parking attendants, but consumers will definitely have feelings of annoyance and they will complain about their gadgets on social media and spread it everywhere. So here we can see the connection between parking and hospitality. The happy mood of tourists after sightseeing in Malioboro can be ruined if they have to meet parking operators who charge parking fees that are not in accordance with the

After Eid 2023, there was a decrease in the number of tourists visiting Malioboro and an increase in visits to Solo. One of the factors is the affirmation of the authority in Yogyakarta which allows parking rates to increase up to a maximum of five times while the Solo city government strictly prohibits parking rate increases during the Eid holidays so that this is a new comparative advantage for Solo to be able to surpass Yogyakarta (Mushabi, 2023). We need to understand that tourism is a service that requires certainty regarding the types and rates of services provided. We don't like being in uncertain situations, one of which is related to parking. A tariff of Rp. 5,000 for a motorbike is considered unfair, for example and Rp. 20,000 for a car, even though the operator is allowed to increase the fare and just for temporary.

Going forward, there are several short-medium term solutions that can be taken. The first is a preventive effort, publishing widely in the form of banners or information boards regarding parking fees that can be seen by anyone in tourist destinations. The design must be conspicuous by public so that they are easily seen so that it is more transparent for anyone regarding the provisions on parking rates that apply to all types of vehicles. It would be ideal if it could also be carried out during holidays because most violations occur during this period, but it must adjust to the dynamics of the work of the agencies involved.

Second, there are curative guidance and supervision efforts such as patrols or raids by the relevant authorities in the transportation, tourism or law enforcement sectors. The behavior of parking attendants who collect parking fees exceed the provisions is certainly a criminal act and it is an act of corruption, which is carried out by the community. The method of supervision can be carried out openly or covertly, based on adequate regulations and containing criminal consequences for violations committed in order to create a deterrent effect for the perpetrators, as long as it is carried out continuously, meaning that it is carried out

routinely but at random times and not previously published to prevent information leakage. So it's not only during the Eid al-Fitr or Christmas holidays because in fact, the moment of visiting Malioboro tourism can occur during school holidays or long weekends, so of course the potential for violations of parking fees can also be greater. Violation of parking regulations by parking operators is a misdemeanor and can be subject to sanctions in the form of fines or imprisonment.

Even though there are criminal sanctions, but because just misdemeanor, they will not be of long duration so if there is no other solution, the offenders may feel safe because they can replace their confinement with a fine. If this happens repeatedly, the existing regulations will not work effectively. In addition to the two short-term solutions above, the next is the need to think about a medium-term solution, its creating an automated parking service system. This means parking services that rely on electronic or non-cash payment methods. With this method, payments can be made using a smartphone or using a card, be it a debit card or electronic money (e-money).

Electronic parking transaction could be described (*Electronic Parking System Singapore | Full & Semi EPS System, n.d.*)²:



Table 2. Electronic parking transaction

The illustration above is using an electronic bar. With this device, it usually only requires one officer at the exit who will take back the parking ticket and receive payment from the driver. It is true that cash is still required, but there is still work being done electronically so there is data that can be compared with the parking ticket receipt issued. Or, actually this device could accommodate non-cash

² <https://t3securityintegration.com/electronic-parking-system/>

payments, as long as the banking card reader feature is provided in it. The use of this device feature requires a wide area because it must be able to accommodate four-wheeled vehicles, or even larger ones.

In addition, there is also a card reader device that is mobile so that it can be carried by parking attendants, if in a parking location where it may not be possible to install an electronic bar because the location is narrow or the parking location is on the side of a public road:



This small device can also accommodate non-cash payment patterns as long as a menu is provided in it, but it may require two devices because for cash transactions, of course, paper print-outs are required.

If using a smart phone, then the phone is brought closer to the available QRIS device, as well as when using a card. With this non-cash feature, all transactions will proceed according to the applicable tariff provisions, thereby minimizing fraud because there is no direct contact with cash. This system requires the preparation of an integrated transaction mechanism, starting from the parking manager and banking as the parking transaction account holder, including the regional financial authority because parking revenue will also become regional income either partially if the parking manager is from the private sector or entirely if the parking manager is from a government agency. The preparation for a system would be better if it was started from the initiative of the authorities first because

this is in accordance with the function of government agencies as formulators as well as executors of public policies.

Even though it is only an application that is used on a smartphone, but because it is related to regional income, it does require the government's role as a policy initiator so that there will be a need to makes a connectivity between cellular operators, regional revenue management authorities and transportation authorities and banking sectors. The role of regional revenue management authority is to manage the funds obtained as regional revenues because there is a difference between public funds and private corporate funds. The role of banking institution is as a fund depository operator because this role can only be carried out by institutions that have a core of financial services business and obtain a license from the central bank while government agencies are not included in the financial services business. So there will be a role for the superstructure of policies and the division of authority among stakeholders. Hence, it's not enough if just discussing about infrastructure alone.

In operational scheme, it can described :



Source : Pariama, RE et al (2021). Parking RR
: Mobile Application Malioboro Smart Parking
Based on IoT Technology

This application feature actually has the potential to be developed. Considering recent situation, as the impacts of Covid-19 pandemic is the development of the digital economy and internet of things (IoT), economic activities carried out by relying on the internet and gadgets and interoperability between sectors.

With the existence of this electronic transaction feature, then, opportunities for further development are very open. A mandatory feature is a control mechanism that is centralized to the parking authority, so that in one day it can be seen how many vehicles have entered and how much the fare has been paid as local revenue. This can be checked through the control room which is connected to operational devices in the field, even if the parking mechanism is managed by the private sector, of course the local government does not want the potential for a large leakage of parking revenue if it cannot be controlled. Including when using apps from smartphone. Interoperability between systems must enable data transparency from the authority side. And this is necessary because main role of government authorities is to ensure that public services, which also contribute to local revenues, for guarantee about data accuracy

We must also realize even if later the non-cash parking payment pattern is used in Malioboro, it doesn't mean that physical supervision will then be abandoned. In the early stages, the pattern of surveillance or unannounced inspections still needs to be intensive because, as previously explained, there are some parking operators who act fraudulently and we must understand that changing people's behavior is not a job that can be completed in 1 or 2 days or weeks or think just because there is a "new toy", then the behaviour and manner automatically changes. Need a social approach to ensure behavior change. And so for the following periods, direct supervision is still necessary, the differences is in intensity.

Nowadays in Yogyakarta, we can only find this electronic parking operational mechanism in large shopping malls or hospitals. Going forward, with Yogyakarta's consistency in continuing to promote Malioboro as an icon and prominent tourism asset of Yogyakarta, the operational pattern of electronic parking must certainly be considered. We certainly don't want any more unrest among tourists and society due to parking fees that violate the rules.

III. Closing

As a tourist destination, Malioboro must be supported by parking infrastructure that allows tourists to park their vehicles temporarily while they are active in Malioboro. However, with the cash parking mechanism that is still in effect, there are many viral disturbing cases of tourists, whether using motorbikes, cars or buses, that they are having to pay for parking beyond the applicable provisions and followed by coercion. This is of course not a positive promotion for Yogyakarta, because when compared to Solo which prohibits increasing parking rates during Eid, it has made part of the tourist market shift from Yogyakarta to Solo. To overcome this, a short-term solution is incidental inspections carried out by transportation authorities and law enforcement agencies on unruly parking operators. If violations are found, they must be subject to criminal sanctions in accordance with applicable regulations. In addition to curative efforts in the form of incidental inspections and law enforcement for parking operators, the medium-term mechanism is the implementation of electronic parking to minimize contact between parking operators and cash. This mechanism also allows systemic and integrated supervision, not only among parking operators but also with parking authorities (local government)

REFERENCES

- Deretan Kasus Parkir Viral di Yogyakarta, Tarif Nuthuk hingga Pejalan Kaki Ditarik Ongkos - Bagian 2.* (n.d.). Retrieved June 16, 2023, from <https://www.suara.com/news/2022/05/06/170312/deretan-kasus-parkir-viral-di-yogyakarta-tarif-nuthuk-hingga-pejalan-kaki-ditarik-ongkos?page=2>
- Desembriarto, D., Chrissanti, M. I., Cahyani, D. E., Rufariza, & Hikmah, K. S. (2022). *Pencapaian Viai DIY Sebagai Daerah Tujuan Wisata Terkemuka Di Asia Tenggara* (T. Penulis (Ed.)). LKi.
- Dinas Pariwisata Kota Yogyakarta.* (n.d.). Retrieved June 8, 2023, from <https://pariwisata.jogjakota.go.id/detail/index/354>
- Electronic Parking System Singapore | Full & Semi EPS System.* (n.d.). Retrieved June 8, 2023, from <https://t3securityintegration.com/electronic-parking-system/>
- Fatimah, S. (2022). Kebijakan Pemerintah dalam Mengatasi Kemacetan di Kota Yogyakarta (Studi Penelitian di Jalan Malioboro di Jalan Tentara Pelajar). *POPULIKA*, 10(1). <https://doi.org/10.37631/populika.v10i1.473>
- Hanief, S., & Pramana, D. (2018). *Pengembangan Bisnis Pariwisata Desan Media Sistem Informasi* (Erang (Ed.)). Penerbit ANDI.

- Irawan, B., Edison, B., & Lumba, P. (2013). Analisis Karakteristik Parkir Pada Universitas Pasis Pengaraian. *Jurnal Mahasiswa Teknik UPP*, 1(1), 1–10.
- Mushabi, S. (2023). *Wisatawan di Yogya Turun Saat Libur Lebaran, Sandiaga: Tindak Tegas Pengelola Parkir Nakal*. Kompas. <https://travel.kompas.com/read/2023/05/03/070700127/wisatawan-di-yogya-turun-saat-libur-lebaran-sandiaga--tindak-tegas-pengelola>
- Peraturan Pemerintah RI Nomor 50 Tahun 2011 Tentang Rencana Induk Pembangunan Kepariwisata Nasional Tahun 2010 - 2025, Pub. L. No. 50, 1 (2011).
- Portal Resmi - Pemerintah Daerah Daerah Istimewa Yogyakarta. (n.d.). Retrieved June 16, 2023, from <https://jogjapro.go.id/berita/sejarah-malioboro-sebagai-bagian-dari-sangkan-paraning-dumadi>
- Undang-undang Nomer 10 Tahun 2009 Tentang Kepariwisata, Pemerintah RI (2009). [http://downloads.esri.com/archydro/archydro/Doc/Overview of Arc Hydro terrain preprocessing workflows.pdf](http://downloads.esri.com/archydro/archydro/Doc/Overview%20of%20Arc%20Hydro%20terrain%20preprocessing%20workflows.pdf)
<https://doi.org/10.1016/j.jhydrol.2017.11.003>
<http://sites.tufts.edu/gis/files/2013/11/Watershed-and-Drainage-Delineation-by-Pour-Point.pdf>
- Peraturan Walikota Yogyakarta Nomor 132 Tahun 2021 Tentang Perubahan Tarif Retribusi Tempat Khusus Parkir Pada Peraturan Daerah Kota Yogyakarta Nomor 2 Tahun 2020 Tentang Retribusi Tempat Khusus Parkir, (2021).