

Strategies for Increasing Parking Tax Revenue in Panjang District, Bandar Lampung City

Novan Patriaguna¹ Dyah Sukmawati² Hariyanto³ Akhmad Suharyo⁴ Agus Purnomo⁵

12345 Pascasarjana Universitas Bandar Lampung Jl. ZA Pagar Alam No.89, Labuhan Ratu, Kedaton, 35142, Bandar Lampung, Indonesia

e-mail: aguspurnomo@ubl.ac.id

Abstract

This study explores the strategies implemented by the Regional Tax and Retribution Management Agency in the Panjang District of Bandar Lampung to improve parking tax revenue. The research highlights significant challenges in achieving revenue targets, including illegal parking operations, insufficient monitoring, and gaps in the enforcement of parking regulations. A qualitative approach, including interviews with key stakeholders, was used to gather insights. The study proposes strategies for improving revenue collection through coordinated efforts with local authorities and the use of modern technology.

Keywords: Parking Tax; Revenue; Regional Tax and Retribution Management Agency.

Introduction

Parking taxes are a vital source of regional revenue in Indonesia, as outlined in Law No. 33 of 2004, which classifies parking as one of the primary sources of regional income. However, despite the potential, parking taxes often fall short of their targets (Triputro et al., 2023). The Panjang District of Bandar Lampung City faces several challenges, including illegal parking practices, poor monitoring systems, and weak enforcement of regulations (Reessena & Jamba, 2022). The role of BPPRD is crucial in overcoming these obstacles and ensuring that parking tax revenues contribute effectively to the local economy (Yudhi & Yuniati, 2022)

Parking operations in the district have struggled to meet revenue goals, as evidenced by data from 2014 to 2022. Revenue from parking taxes consistently failed to meet targets due to various challenges, including unregulated parking and poor coordination among stakeholders (Ayyub et al., 2021). This study examines strategies used by BPPRD to address these issues and improve revenue collection from the parking sector (Han & Zhang, 2021).

Wen et al., (2021) investigated the dynamics of smart parking systems and focused on optimizing reservation systems for urban parking to manage parking demand and reduce congestion. Their research questions explored the effectiveness of parking reservation systems and the factors influencing their performance in urban www.proceedingconference.ubl.ac.id



contexts (Satyanath et al., 2023).

The study employed an analytical framework based on the principles of system optimization and transportation management, aiming to provide insights into efficient parking space allocation and reservation pricing (Carrese et al., 2021). Methods included data collection from simulations and real-time parking usage data, allowing the application of both descriptive and inferential statistical analyses (Malik & Verawati, 2015). Their findings indicate that effective parking reservation strategies can significantly reduce search times, vehicle emissions, and traffic congestion while enhancing user satisfaction through dynamic pricing models tailored to demand and real-time availability (Zhang et al., 2021). These results underscore the value of integrating smart technologies into urban infrastructure to improve mobility and environmental outcomes (Chalaki et al., 2021).

Arute et al., (2019) focused on the economic implications of parking policies and pricing, specifically addressing the impacts of underpriced or free parking on urban congestion and land use. His theoretical framework was grounded in economic principles, particularly supply and demand, as applied to urban parking (Liu et al., 2019). Through a combination of theoretical analysis and case studies, Shoup utilized methods that combined economic modeling with empirical data from cities with varying parking policies(Prihatiningtyas et al., 2024). His analysis involved comparative and regression-based techniques to assess the relationship between parking availability, pricing, and urban density (Afalia & Rachmat, 2020). Shoup's findings highlighted that low or unpriced parking often leads to overuse, resulting in congestion and inefficient land use (Liu et al., 2019). He advocated for implementing market-based pricing to optimize parking space allocation, proposing that demand-responsive pricing would align usage with availability, reduce congestion, and promote more sustainable urban development (Dowling et al., 2017).

Afalia & Rachmat, (2020)examined advanced shared parking management systems using smart technologies to optimize parking efficiency and support urban mobility. The research questions revolved around maximizing space utilization through shared parking strategies and assessing their effectiveness in reducing vehicle circling and emissions in densely populated areas (Satyanath et al., 2023). They used a multi-agent simulation model and deep reinforcement learning (DRL) as the theoretical framework to capture real-time interactions between vehicles and parking spots. Their methodology involved implementing machine learning algorithms and simulations that dynamically adjusted to varying demands and parking space availability, employing performance metrics such as travel time, parking occupancy rates, and user satisfaction indices (Barusman et al., 2024; Satyanath et al., 2023) The findings suggested that shared parking managed through AI and DRL could significantly reduce traffic congestion and environmental impacts by matching parking supply more effectively with real-time demand. Their study emphasized the potential of machine learning and data-driven strategies to transform urban parking systems into more adaptive and efficient infrastructures(Purnomo et al., 2021; Varotto & Cenedese, 2021).



Each study contributes uniquely to the understanding of urban parking management, from economic and policy-oriented perspectives to smart technology integration, showing that well-designed parking policies and advanced management systems are essential for addressing urban congestion and promoting sustainable city growth (Yee et al., 2020; Yunita et al., 2024)

Materials and Methods

This research employed a qualitative descriptive method, designed to systematically present accurate data on the facts and phenomena observed in the field. Data were collected through interviews, observations, and documentation (Barusman & Habiburrahman, 2022; Karwati et al., 2021). Interviews were conducted with five key informants, including the Head of BPPRD in Panjang District, administrative officers, parking attendants, and local residents. Data analysis followed four key steps: data collection, data reduction, data display, and conclusion drawing. The study focused on understanding the strategies used to manage parking taxes and improve revenue collection.

Results and Discussion

The study identified several key challenges in parking tax management in Panjang District, including illegal parking activities, unregulated parking operations, and poor discipline among parking attendants. The lack of technology, such as the Tapping Box system, and the presence of illegal parking tickets further complicated revenue collection.

Key findings:

- 1. Coordination with stakeholders: BPPRD actively coordinated with local authorities, including the transportation department, municipal police (Satpol PP), and law enforcement (TNI/POLRI). These efforts aimed to address illegal parking and public disturbances such as buskers and thuggery, thereby improving public safety and parking management.
- 2. Implementation of technology: The introduction of Tapping Boxes and stricter adherence to Standard Operating Procedures (SOPs) were proposed to enhance transparency in revenue collection and reduce opportunities for misconduct.
- 3. Training and monitoring of parking attendants: Parking attendants were provided with uniforms and specific training to ensure they followed regulations. This included ensuring the proper issuance of parking tickets and directing vehicles to designated parking areas.

Despite these strategies, several obstacles hindered the full realization of parking tax potential:

- Corruption and illegal operations: The presence of unscrupulous individuals exploiting gaps in the system for personal gain was a recurring issue.
- Inefficient enforcement: Although some strategies were effective, inconsistencies in enforcing regulations allowed illegal parking to persist.



Conclusion

The study concludes that effective strategies to increase parking tax revenue in Panjang District rely on improved coordination between BPPRD and local authorities, the use of technology to monitor parking activities, and the enforcement of SOPs. While significant challenges remain, particularly in addressing illegal parking operations and corruption, the proposed strategies offer a pathway to improved revenue collection. Strengthening stakeholder engagement and ensuring the transparency of parking fee collections are critical for achieving revenue targets and enhancing regional income.

References

- Afalia, D. N., & Rachmat, S. Y. (2020). Built environment and parking pricing: Probability on changing mode choice in Bandung urban area. *IOP Conference Series: Earth and Environmental Science*, 592(1). https://doi.org/10.1088/1755-1315/592/1/012003
- Arute, F., Arya, K., Babbush, R., Bacon, D., Bardin, J. C., Barends, R., Biswas, R., Boixo, S., Brandao, F. G. S. L., Buell, D. A., Burkett, B., Chen, Y., Chen, Z., Chiaro, B., Collins, R., Courtney, W., Dunsworth, A., Farhi, E., Foxen, B., ... Martinis, J. M. (2019). Quantum supremacy using a programmable superconducting processor. *Nature*, *574*(7779), 505–510. https://doi.org/10.1038/s41586-019-1666-5
- Ayyub, Hardianti, Nonci, N., Nuraini, K., & Nur, M. (2021). E-Parking Management System. *IOP Conference Series: Earth and Environmental Science*, 717(1). https://doi.org/10.1088/1755-1315/717/1/012031
- Barusman, A. R. P., & Habiburrahman, H. (2022). The role of supply chain management and competitive advantage on the performance of Indonesian SMEs. *Uncertain Supply Chain Management*, 10(2), 409–416.
- Barusman, A. R. P., Pranata, T. H., Agustina, M., Maulana, I., Oktaviannur, M., & Heldan, E. (2024). The Influence of Motivation, Work Environment and Work Professionalism on Employee Performance at the Office of The Regional Development Planning Agency of West Tulang Bawang Regency. *Journal of Administration, Policy and Service Integration*, 1(1), 85–96. http://journal.ubl.ac.id/index.php/japsi
- Carrese, S., D'Andreagiovanni, F., Giacchetti, T., Nardin, A., & Zamberlan, L. (2021). An optimization model and genetic-based matheuristic for parking slot rent optimization to carsharing. *Research in Transportation Economics*, 85, 100962. https://doi.org/https://doi.org/10.1016/j.retrec.2020.100962
- Chalaki, B., Beaver, L. E., Mahbub, A. M. I., Bang, H., & Malikopoulos, A. A. (2021). A Research and Educational Robotic Testbed for Real-time Control of Emerging Mobility Systems: From Theory to Scaled Experiments. http://arxiv.org/abs/2109.05370
- Dowling, C., Fiez, T., Ratliff, L., & Zhang, B. (2017). Optimizing curbside parking resources subject to congestion constraints. 2017 IEEE 56th Annual Conference on



- *Decision and Control (CDC),* 5080–5085. https://doi.org/10.1109/CDC.2017.8264412
- Han, X., & Zhang, D. (2021). Research on Improvement of Parking Generation Rate Model Based on Behavior Selection. *Journal of Physics: Conference Series*, 1972(1). https://doi.org/10.1088/1742-6596/1972/1/012119
- Karwati, U., Sukmayadi, Y., & Hartiana Sudradjat, B. (2021). Pak Daeng`s Angklung as a Learning Media for Keroncong Music Rhythm at SMP Negeri Unggulan Sindang, Indramayu.
- Liu, Q., Zhu, M., & Xiao, Z. (2019). Workplace parking provision and built environments: Improving context-specific parking standards towards sustainable transport. *Sustainability (Switzerland)*, 11(4). https://doi.org/10.3390/su11041142
- Malik, M., & Verawati, N. (2015). Compensation Policy Implementation Of Fuel Oil, in the Distric Konawe, Southeast Sulawesi Province (Study on Implementation of Direct Cash Assistance). 3rd Imcoss The Third International Multidisciplinary Conference on Social Science, 21–28. www.ubl.ac.id
- Prihatiningtyas, I., Heryadi, E., Ramadhan, R., Purnomo, A., Alfiyya, A., & Abdullah, H. (2024). Processing And Characterization Of Oil Palm Loose Fruits As A Raw Material For Biodiesel. *Chimica Didactica Acta*, 12(1), 6–11. https://doi.org/10.24815/jcd.v12i1.34955
- Purnomo, A., Farida, I., & Vandika, A. (2021). Identification of Potency for Developing Business Value of Negeri Katon Tourism Village, District of Pesawaran, Lampung Province. In *Turkish Journal of Computer and Mathematics Education* (Vol. 12, Issue 3).
- Reessena, Z. C., & Jamba, P. (2022). Legal protection for parking services in the event of a motor vehicle loss. *Jurnal Cakrawal Hukum*, 224–230.
- Satyanath, G., Sahoo, J. K., & Roul, R. K. (2023). Smart parking space detection under hazy conditions using convolutional neural networks: a novel approach. *Multimedia Tools and Applications*, 82(10), 15415–15438. https://doi.org/10.1007/s11042-022-13958-x
- Triputro, R. W., Giawa, A., Suharyanto, S., & Wijaya, J. H. (2023). Government Policy in Illegal Parking Charges at Public Spaces. *Journal of Governance and Public Policy*, 10(2), 191–202. https://doi.org/10.18196/jgpp.v10i2.17880
- Varotto, L., & Cenedese, A. (2021). Online and Adaptive Parking Availability Mapping:

 An Uncertainty-Aware Active Sensing Approach for Connected Vehicles.

 http://arxiv.org/abs/2105.00246
- Wen, H., Yang, X., & Chen, X. (2021). Research on pricing strategy in urban parking management. *Journal of Physics: Conference Series*, 1976(1). https://doi.org/10.1088/1742-6596/1976/1/012033



- Yee, O. C., Yaakob, N., Elshaikh, M., & Azahar, F. (2020). A cloud-based automated parking system for smart campus. *IOP Conference Series: Materials Science and Engineering*, 767(1). https://doi.org/10.1088/1757-899X/767/1/012049
- Yudhi, R., & Yuniati, A. (2022). Working Health Protection Policy Against Workers in the Pandemic Time Covid-19.
- Yunita, M. M., Alam, I. A., & Putri, T. L. W. (2024). Effect Of Compensation And Work Discipline On Employee Performance At The Pringsewu District Election Commission. *Mabuss*, 2(1), 251–257. http://journal.ubl.ac.id/index.php/mabuss
- Zhang, X., Sun, Z., Niu, Z., Sun, Y., & Wang, D. (2021). The effect of abusive supervision on safety behaviour: A moderated mediation model. *International Journal of Environmental Research and Public Health*, 18(22). https://doi.org/10.3390/ijerph182212124