

Optimization Strategies for Government Asset Management in Jakarta Using Multi-Criteria Analysis

Optimization
Strategies for
Government Asset

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ABSTRACT

The large number of government assets is often not managed properly, thus becoming a financial burden for the government, including the DKI Jakarta Provincial Government. On the other hand, the government has limitations in managing their assets. Therefore, cooperation in asset management and optimization is important to support the increase in local revenue. It is crucial to map government-owned assets so that they can be utilized in accordance with the highest and best use principle. This research uses data from 31 samples of Jakarta government asset data to map assets, focusing on land and buildings, using multiple criteria analysis. These criteria are compiled based on expert judgment and weighted using the analytical hierarchy process method. The results show that there are 6 assets in the high market category and high condition, 7 assets in the high market category but low condition, 8 assets in the low market category but high condition, and 9 assets in the low market category and low condition.

Keywords: Condition, Government Asset, Market, Matrix, Property

ABSTRAK

Banyaknya aset pemerintah seringkali belum optimal dikelola dengan baik sehingga menjadi beban finansial bagi keuangan pemerintah, termasuk Pemerintah Provinsi DKI Jakarta. Disisi lain, pemerintah memiliki keterbatasan dalam pembangunan. Sehingga kerjasama pengelolaan dan optimalisasi aset menjadi penting guna menunjang peningkatan pendapatan asli daerah bagi pemerintah. Karenanya penting untuk memetakan aset-aset milik pemerintah agar bisa dimanfaatkan sesuai dengan prinsip penggunaan tertinggi dan terbaik. Dengan menggunakan data 31 sample data aset pemerintah provinsi dki Jakarta, penelitian ini mencoba memetakan aset berupa tanah dan bangunan yang ada di Jakarta dengan sejumlah kriteria menggunakan metode multi criteria analysis. Kriteria disusun berdasarkan penilaian pakar dan pembobotan dari pakar dengan metode analytical hierarchy process. Hasilnya menunjukkan bahwa ada 6 aset yang masuk kategori pasar tinggi dan kondisi tinggi, 7 aset masuk kategori pasar tinggi namun kondisi rendah, 8 aset masuk kategori pasar rendah namun kondisi tinggi dan 9 aset masuk kategori pasar rendah dan kondisi rendah.

Kata kunci: Kondisi, Aset Pemerintah, Pasar, Matriks, Properti

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INTRODUCTION

Public asset management can be defined as an effort to optimize the use of assets in terms of service benefits and financial benefits (Jones & White, 2008). In Indonesia, public asset management is technically often referred to as the management of State-Owned Assets/Local Government Assets, as regulated by Law No. 4 of 2004 concerning the State Treasury and other derivative regulations, including Government Regulation Number 28 of 2020, which amends Government Regulation Number 27 of 2014 concerning the Management of State/Regional Property, and the Regulation of the Minister of Home Affairs Number 7 of 2024, which amends Regulation of the Minister of Home Affairs Number 19 of 2016 concerning Guidelines for the Management of Regional Property. State asset management is a relatively new discipline (White, 2011). The concept of state asset development emerged in the UK and Malaysia in the early 1980s, in Canada during the 1980s, and in Australia in the 1980s (Abdullah et al., 2011; Mahmood et al., 2014). The development of state asset management grew alongside the increasing demand for efficiency in the public sector, transitioning from being highly bureaucratic, non-transparent, and non-accountable to becoming more open and accountable (Hajar, 2015). In Indonesia, state asset management is marked by the issuance of Government Regulation No. 6 of 2006, which is a derivative of Law No. 1 of 2004 concerning State Assets. The primary goal of public asset management in Indonesia is to promote good governance, which aims to foster trust in asset management among stakeholders and the community (Tirayoh et al., 2021).

However, efforts to organize and optimize these assets often face challenges such as bureaucratic obstacles, limited human resource expertise, and financial flexibility, particularly in asset management at the local government level (Tirayoh et al., 2021). In 2017, the Ministry of Finance, mandated as the Asset Manager, established a Public Service Agency (*Badan Layanan Umum*/BLU) with a specific mission to optimize assets and seek private sector partnerships. This agency is known as the State Asset Management Institute (*Lembaga Manajemen Aset Negara*/LMAN). Recognizing the importance of addressing regulatory and institutional limitations to enable business-oriented asset management, the DKI Jakarta Provincial Government adopted a similar approach by establishing a Regional Public Service Agency (*Badan Layanan Umum Daerah*/BLUD). This agency, called the Jakarta Asset Management Center Management Unit (*Unit Pengelola Jakarta Asset Management Center*/UP JAMC), was established in 2023 and officially designated as a BLUD in 2024 through DKI Jakarta Governor Regulation Number 3 of 2024. In managing State-Owned Assets/Local Government Assets, the government plays the roles of asset owner, manager, and policy regulator for the utilization of these assets. Asset management is both urgent and complex in the context of regional development, particularly in urban areas, as it involves increasing public expectations for government services, declining economic asset values, limited funding, asset depreciation, and heightened interdependence among various sectors involved in asset management (Mahmood et al., 2014; Lukito, 2018). Therefore, it is crucial for the government to develop, prioritize, implement, and allocate resources for assets that provide the best value (highest and best use) while also protecting critical assets with high risk (Lukito, 2018).

The paradigm of asset management is evolving alongside growing public expectations for new public management, which also drives changes in the asset development model. Under the traditional asset management paradigm, the government's role was to ensure the availability of assets for public facilities and services at the lowest possible cost, selecting from various available options. In contrast, the modern asset management paradigm focuses on achieving the government's strategic objectives by increasing asset productivity, supporting economic development, and boosting community income (Kaganova & Stone, 2000). In simple terms, the asset management paradigm has shifted from the government's earlier role as primarily an administrative function (asset administrator) to a more dynamic role as an asset

manager. This substantial shift requires the government to adopt the mindset, skills, and operational approach of property management, enabling it to identify the potential of each asset and optimize its use.

The government in Indonesia, both at the central and regional levels, possesses various assets that, if appraised, hold significant value. The DKI Jakarta Province, in particular, has a large asset value, but its utilization and optimization remain relatively low. The value of assets in the form of land and buildings in DKI Jakarta was recorded at 512.89 trillion in 2022, and this figure continues to grow annually (Muthiah, 2024). Despite the high asset value, the annual income realization from asset utilization in Jakarta during 2018–2021 was only around 50 billion. In 2021, due to the Covid-19 pandemic, this figure dropped to 35.43 billion, representing just 31% of the target set. Conversely, there was a significant increase in revenue, reaching 229 billion in 2022, following the establishment of the Jakarta Asset Management Center as a Regional Public Service Agency tasked with managing government assets (JAMC, 2023). However, the income capitalization value remains below 1% of the total asset value owned by the DKI Jakarta government.

The substantial assets owned by the government are often directly proportional to the high maintenance costs imposed on the Regional Budget. Additionally, the transition of Jakarta's status to the Capital City of the Republic of Indonesia, following the issuance of the Jakarta Special Region Law (*Daerah Khusus Jakarta/DKJ*), presents several developmental challenges. These include indications of a slowdown in the growth of Regional Own Revenue, the need for new development funding sources, and the reduction of operational costs associated with Jakarta's assets. Effective asset management can help support the government's vision, mission, and strategic agenda (Machmud et al., 2023). However, the significant number of idle and underutilized assets remains a challenge for asset management in Jakarta. The investment property assets of the DKI Jakarta government represent only 0.5% of the total asset value of 512.89 trillion. Thus, a mapping strategy is required to prioritize asset utilization in Jakarta, aligning with the development vision, mission, and strategic agenda that have not yet been fully realized. This study aims to address this gap by mapping assets based on market potential and conditions. Using a sample of 31 assets in Jakarta, the research seeks to examine the distribution of potential asset maps in the city.

LITERATURE REVIEW

Hong Kong utilizes a rail-based asset development model known as Rail plus Property (R+P). This model is managed by its transportation management company, the Mass Transit Railway Corporation (MTR Corp). Over time, MTR Corporation has also taken on the management of properties located along stations and railway lines. Under this model, the government grants "development rights" for land situated near railway lines at market prices before the construction of the railway ("pre-rail"). After railway construction ("post-rail"), the land is sold to private developers at higher prices to be developed into various uses, such as buildings, offices, housing, shopping centers, and even car parks (Cerveri & Murakami, 2009). The asset management model in Hong Kong is depicted in the diagram in Figure 1:



Source: Cerveri & Murakami (2009)

Figure 1. MTR Corporation Asset Management Diagram

Based on Figure 1, MTR Corp evolved into an Urban Wealth Fund (UWF) and became a key player in the development of urban areas in Hong Kong. Through this model, half of the 87 MTR Corp stations have been developed into residential areas, covering a land area of 13 million square meters. In 2014, MTR Corp distributed \$590 million in dividends to the government (Leong, 2016). Some land and properties were allocated to developers with development rights lasting up to 50 years. By 2004, property development contributed over 60% of MTR Corp's revenue (Leong, 2016). The success factors of MTR Corp's asset management and utilization include: 1) development rights extending up to 50 years, offering long-term business opportunities; 2) the allocation of development rights from the government to MTR Corp at pre-rail prices, allowing development opportunities to be realized at post-rail prices; 3) the presence of an integrated area development plan aligned with the transportation development plan (Cerveri & Murakami, 2009).

Copenhagen, the capital of Denmark with a population of two million, established an asset management company called Copenhagen Urban City and Port Corporation, structured as an Urban Wealth Fund (UWF). Its primary goal is to regenerate assets in river and port areas while enhancing the city's brand image (Katz & Noring, 2017). In the early 2000s, Copenhagen faced significant economic challenges, including a high unemployment rate of 17.5% and a tax revenue decrease of \$750 million, leading to citizen migration and economic stagnation. The establishment of CPH Port & Development was prompted by these issues, as well as the underutilization of industrial activity and port assets, which were operating at just 5% capacity. Additionally, the construction of a bridge connecting Copenhagen to Sweden was projected to reduce port activity by 25%. To address these challenges, the government rezoned land for housing and commercial purposes, repurposing assets to stimulate economic growth and urban development (Katz & Nowak, 2018).

A critical factor in the successful asset utilization in Copenhagen is granting substantial authority to CPH Port & Development as the primary asset manager (Katz & Noring, 2017). Beyond asset management, CPH Port & Development functions as an Urban Wealth Fund (UWF), stimulating property financing and urban development across the city. Since 2007, the organization has facilitated nearly half of Copenhagen's urban development, contributing significantly to its transformation into one of the world's wealthiest cities, as noted in the 2018 World Bank report (Katz & Noring, 2017). Key success factors for CPH Port & Development's asset management include adopting a professional, corporate-style approach, minimizing political interference, and wielding considerable authority over public assets. Additionally, its role as a UWF enables it to accelerate the development of uneconomical assets by fostering collaborations with private developers (Katz & Noring, 2017).

Studies on the management of public assets by governments, particularly local governments in Indonesia, remain limited. Most existing research has been conducted in the context of other countries, employing various methodologies. In Indonesia, Hanis et al. (2011) evaluated government asset management in local governments using a case study in South Sulawesi. Their findings revealed significant challenges faced by local governments in adapting asset management frameworks to their policies. These challenges include the absence of a robust institutional and legal framework, the non-profit orientation of government asset management, sectoral egos among different agencies, limited availability of asset management data and information, and insufficient human resource capabilities. To overcome these challenges, effective management is essential to ensure the efficient and effective utilization of available resources (Lubis, 2022; Suryanto & Tyas, 2024; Saputra et al., 2024).

Other studies, such as those by Tirayoh et al. (2021) and Elim et al. (2019), examined government asset management in Minahasa and Talaud Regencies. Using a qualitative approach, the research found that the use and management of government assets in both regions still require improvement. Additionally, there is a need to enhance the capacity of asset and financial management institutions to better manage regional assets. Pertiwi

(2023) and Mawardi & Cahyadi (2024) also highlighted weak asset management, attributing it to insufficient human resource competencies and less-than-optimal guidance, supervision, and control. Asset utilization management is crucial for improving operational efficiency and achieving organizational goals (Maletič et al., 2020). Nor et al. (2024), in their analysis of the internal control system in asset management at Tanjungpura University Hospital, emphasized that robust supervision and an effective system can minimize asset loss risks and enhance efficiency. Novita (2024) supported this by demonstrating that good regional asset management in Southwest Aceh Regency contributes to transparency and accountability, though it remains constrained by inadequate documentation.

Pakpahan et al. (2023) analyzed the effectiveness of internal control in fixed asset management at the Medan Labuhan District Office in North Sumatra. They found that the internal control system still had weaknesses, particularly in documentation and routine supervision of fixed assets. Although a monitoring system was in place, gaps remained, leading to errors in asset recording and loss. To improve accountability and efficiency in fixed asset management, tighter internal controls and a more structured documentation system were deemed necessary. Meanwhile, Syabilla et al. (2024) emphasized the importance of integrating digital technology into the asset management system, which not only accelerates the evaluation process but also enhances the accuracy of internal control. Most government asset management research focuses on the poor performance of human resources, leading to weak management quality, regulations assessment, and asset performance in relation to regional finances. However, research aimed at mapping asset priorities has been lacking. This study seeks to fill that gap by mapping asset development priorities using a multi-scoring analysis model.

METHODS

This study utilizes the Asian Development Bank (ADB) and Jones Lang LaSalle Property (JLL) framework for asset optimization through database analysis, mapping, and utilization strategies. The model is modified with a condition index (CI) and a market index to prioritize assets. The CI assesses asset conditions based on components such as architecture, electricity, and security. The Uzarski & Grussing (2013) method is used for observing and recording asset conditions. The market index evaluates market potential based on factors like land value, regional spatial plans (*Rencana Tata Ruang Wilayah/RTRW*), and detailed spatial plans (*Rencana Detail Tata Ruang/RDTR*). Asset priority assessment is conducted using the quality rating value estimation method, combining the CI and market index on a scale of 1-5. The Analytical Hierarchical Process (AHP) method is used for category weighting, with expert surveys assessing criterion preferences on a scale of 1-9. Consistency testing is performed by calculating the Consistency Ratio (CR), which must be below 10%. The Super Decision application is used for data processing. The primary data for this study includes a sample of 31 assets obtained from the Feasibility Study of Utilization (Kajian Kelayakan Pemanfaatan/KKP) and the Work Reference Framework (*Kerangka Acuan Kerja/KAK*) from Regional Agency on Asset Management DKI Jakarta, in the form of land and buildings. The priority matrix is employed to map assets into property-market quadrants, linking asset conditions to market demand.

RESULTS

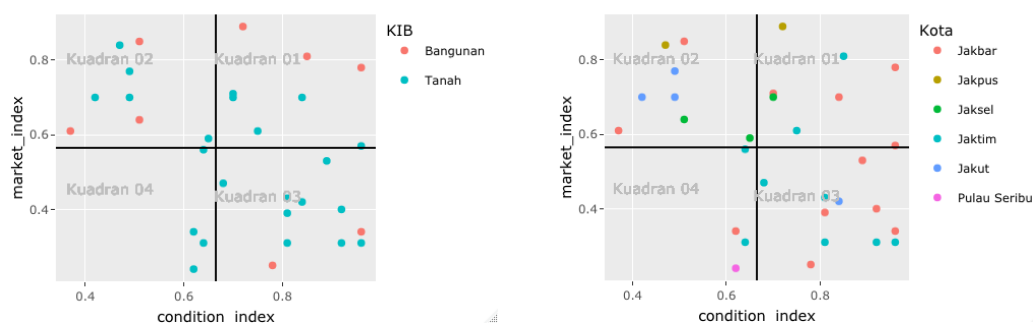
Based on the weighting of the Condition variable for land assets, the Legality criterion (52.16%) has the highest weight, followed by Physical Security (19.76%), Area (18.21%), and Physical Condition (9.87%), with a Consistency Ratio of 1.01%. The market variable weight for land assets shows that the Location criterion (31.13%) has the highest weight, followed by Land Value (26.81%), Accessibility (21.83%), and Zoning (21.23%), with a Consistency Ratio of 1.07%. For building assets, the Condition variable shows that the Physical Condition criterion (37.61%) has the highest weight, followed by Legality (27.71%), Security (19.18%), and Area (18.50%), with a

Consistency Ratio of 0.72%. The Market variable weight for building assets indicates that the Accessibility criterion (40.99%) holds the highest weight, followed by Location (26.73%), Zoning (18.65%), and Land Value (13.63%), with a Consistency Ratio of 0.35%. With these weighting and assessment results, this study proceeds to analyze the asset mapping in a matrix format. The first matrix categorizes assets by land and building types, while the second matrix classifies them by administrative area or city.

Table 1. Results of Weighting of Land Market Condition Variables and Weighting of Building Market Condition Variables

Variables	Land Condition	Land Market	Building Condition	Building Market
Area	18.21%	-	18.50%	-
Legality	52.16%	-	27.71%	-
Condition	9.87%	-	34.61%	-
Safety	19.76%	-	19.18%	-
Accessibility	-	21.83%	-	40.99%
Location	-	30.13%	-	26.73%
RDTR	-	21.23%	-	18.65%
Land Value	-	26.81%	-	13.63%
Consistency Ratio	1.01%	0.07%	0.72%	0.35%

Source: processed, 2023



Source: processed, 2023

Figure 2. Quadrant Mapping Based on Asset Type

Based on Figure 2, this model uses sample data from 30 assets, sourced from the Feasibility Study of Utilization by the Regional Asset Management Agency (Badan Pengelolaan Aset Daerah/BPAD) of DKI Jakarta Province. From the initial model, asset mapping revealed the following distribution:

- Quadrant one (High Condition-High Market) includes 8 assets as priority for utilization.
- Quadrant two (Low Condition-High Market) also has 8 assets.
- Quadrant three (High Condition-Low Market) contains the majority of assets, totaling 11.
- Quadrant four (Low Condition-Low Market) includes 4 assets.

Asset management within the DKI Jakarta Provincial Government faces various challenges, including governance issues, differing paradigms between agencies as users and managers of assets, a need for specialized competencies, and the absence of a unified method to assess market potential and asset performance. By employing a multi-criteria analysis method, this study aims to build a model to identify which types of assets have optimization potential. This model is crucial for prioritizing assets in need of attention, given the large volume of assets owned by the DKI Jakarta Provincial Government.

Using the Analytical Hierarchy Process (AHP) method and expert surveys, this study found that for land conditions, the most dominant factor is the legality criterion

(52.16%), followed by security (19.76%), area (18.21%), and physical condition (9.87%). The consistency of the expert survey results is high, with a Consistency Ratio of 1.01%. In terms of the market, the location factor (30.13%) is the most dominant, followed by land price (26.81%), accessibility (21.83%), and spatial conditions (21.83%), with a Consistency Ratio of 0.07%, indicating an acceptable level of consistency. For building assets, the physical condition factor (34.61%) holds the highest weight in determining building conditions, followed by the legality factor (27.71%), security (19.18%), and area (18.51%). The consistency ratio is acceptable with a value of 0.72%. For market variables related to building assets, the Accessibility criterion (40.99%) carries the highest weight, followed by Location (26.73%), Zoning (18.65%), and Land Value (13.63%), with a Consistency Ratio of 0.35%. Based on the analysis of 31 assets from field reviews and mapping in the matrix quadrant, the study identified the following asset distribution:

- Quadrant 1 (High Condition-High Market) includes 8 assets.
- Quadrant 2 (Low Condition-High Market) also includes 8 assets.
- Quadrant 3 (High Condition-Low Market) is the most common, with 11 assets.
- Quadrant 4 (Low Condition-Low Market) includes 4 assets.

This mapping provides insights into the prioritization of assets for optimization and management.

CONCLUSION

The conclusion of this study highlights several challenges faced by the DKI Jakarta Provincial Government in asset management, particularly in governance, differing paradigms between asset users and managers, and the competencies required. Through the application of Multi-Criteria Analysis (MCA) and Analytical Hierarchy Process (AHP), the study successfully identified the dominant factors influencing asset management, both in terms of physical conditions and market potential. For land assets, the legality factor emerged as the most dominant, while for the market side, location was the most important. For building assets, physical conditions were found to be the primary factor, while accessibility was the key market criterion. The expert survey results showed a very high level of consistency, with minimal variation, as reflected in the very low Consistency Ratio. Asset mapping using the matrix quadrant revealed that 8 assets were categorized in the high condition and market category, while another 8 assets were in the low condition but high market category. The majority of assets were found in the high condition but low market category. These findings provide a clear understanding of asset priorities and serve as a crucial basis for decision-making in optimizing and managing DKI Jakarta Provincial Government assets.

Suggestion

Based on the research results, it is recommended that the government consider the legality and location factors when optimizing land assets in Jakarta, as both are dominant variables in determining the strategic value of assets. For building assets, physical condition and area are the main indicators. Assets in quadrant one should be marketed proactively, while assets in quadrants two and three require property development studies, such as visioning or Highest and Best Use (HBU), to identify their development potential.

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