

## THE INFLUENCE OF ASSET MANAGEMENT ON OPTIMIZING THE UTILIZATION OF FIXED ASSETS IN THE PALEMBANG CITY GOVERNMENT

Miftahul Jannah<sup>1\*</sup>, Rita Martini<sup>2</sup>, Rosy Armaini<sup>3</sup>

<sup>1-3</sup> Public Sector Accounting, Politeknik Negeri Sriwijaya, Palembang, Indonesia

E-mail: <sup>1)</sup> [miftahuljannah231100@gmail.com](mailto:miftahuljannah231100@gmail.com)

### *Abstract*

*The main objective of this study is to explore and evaluate the impact of asset inventory, assessment, supervision, and control on enhancing the efficiency of fixed asset utilization in the administrative setup of Palembang city. The research was conducted within the premises of Palembang City Government with the involvement of a total of 40 individuals. The selection of participants was based on their relevance to the study objectives and the data obtained from them was analyzed using SEM PLS Structural Equation Modeling technique. The analysis was carried out through the utilization of the SmartPLS 4.0 software application. The outcomes of the investigation suggest that effective management practices related to asset inventory, assessment, supervision, and control can lead to significant enhancements in the effective utilization of fixed assets within the administrative framework of Palembang.*

*Keywords: Asset Inventory, Asset Valuation, Supervision and Control, Fixed Assets*

### 1. INTRODUCTION

Governments have a huge responsibility in managing public resources, including fixed assets such as buildings, infrastructure and equipment. To achieve the goal of optimal public services, the government must ensure that these assets are used efficiently and effectively. Good asset management helps avoid waste and ensures each asset provides maximum benefits to society. The effective establishment of regional autonomy in Indonesia is determined by how well local governments are able to handle regional resources (Darmawan et al., 2023). Effective asset management, rooted in efficient principles, is crucial for empowering local governments in funding their regional growth. Emphasizing good governance in the professional management of regional assets is believed to enhance trust in state financial management among the public (Noviawati, 2016).

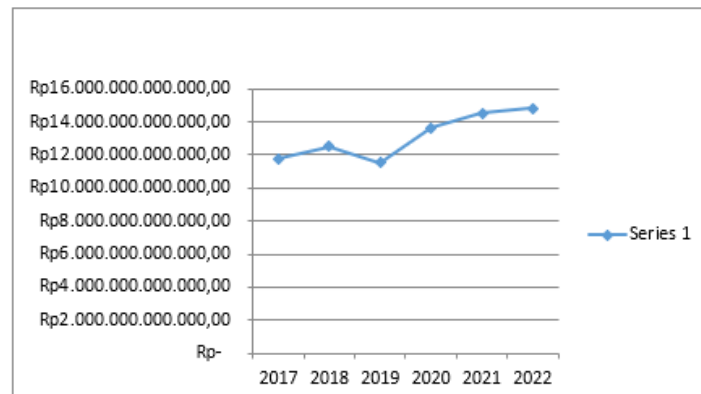
In government, transparency and accountability are very important. Poor asset management can lead to corruption, misuse of assets, and losses to the state. Structured asset management helps record, report and audit the use of assets in a transparent manner, thereby increasing government accountability to the public. Siregar (2004) states that asset management involves multiple steps that can be implemented to enhance owned assets, including conducting an inventory, performing a legal audit, valuating assets, optimizing assets, and monitoring and controlling assets. When these five stages of asset management are executed effectively, it can lead to significant advantages for the government by improving efficiency, effectiveness, and generating additional value in managing assets in a systematic, accountable, and transparent manner.

According to Minister of Home Affairs Regulation No. 19 of 2016, regional assets refer to all assets owned by a particular region, including both physical and non-physical resources. These assets, whether movable or immovable, are under the ownership and control of the Regional Government. Some of these assets may be funded by regional budgets and expenditure funds. Efficient administration and oversight of regional assets can help stimulate economic development within the region, resulting in an increase in Regional Original Revenue (PAD) which can be used as a source of regional funding (Lestari & Hertati, 2020). If local assets are not managed and utilized properly, the cost of maintaining these assets will be more expensive than the benefits that can be generated. Therefore, most of the development budget must be financed by the local government itself. Local governments must have the ability to control, direct and utilize existing resources effectively and efficiently, as well as optimize local revenue sources, including optimizing and utilizing existing assets (Wulandari, 2021).

Fixed assets require regular care and maintenance to keep them in good condition and usable for a long period of time. Good asset management includes proper maintenance strategies, which help reduce emergency repair costs and extend asset life. Accurate and integrated data on fixed assets is essential for effective planning and decision-making. In order to effectively plan infrastructure development, distribute budget resources, and assess the disposal of unproductive assets, it is essential for the government to have a clear understanding of the condition, location, and value of each asset (Hertati et al., 2020).

With good asset management, the government can identify and eliminate unused or duplicative assets, thus saving costs (Rachmad et al., 2024). In addition, good maintenance planning can also reduce unexpected repair costs and improve budget efficiency (Hertati et al., 2019). Well-managed fixed assets support the provision of quality public services. Improving the condition of health and education facilities can enhance the standard of services offered to the public, ultimately leading to an overall enhancement in well-being (Susanti et al., 2023). Governments must comply with various regulations and standards in asset management. Asset management helps ensure that all fixed assets are managed in accordance with applicable regulations, avoid sanctions or penalties, and maintain the government's reputation (Hertati & Syafarudin, 2018).

Palembang City Government may have assets in the form of office buildings, health facilities, schools, and other infrastructure. By implementing good asset management, the government can conduct accurate inventories, determine routine maintenance schedules, optimize the use of space, and plan the development of new assets based on the needs of the community. Asset management is an essential element in effective government management. Against this backdrop, improving the management of fixed assets can lead to increased operational efficiency and effectiveness, as well as benefiting the quality of public services and the general well-being of the community (Hertati, Widiyanti, et al., 2020).



**Figure 1. Fixed Assets of Palembang City 2017-2022**

From Figure 1, for three consecutive years from 2020 to 2022 the number of assets has always increased, but in 2019 the number of fixed assets has decreased. This is due to the problem of optimizing asset utilization faced by the Palembang City Government, namely there are still fixed assets whose whereabouts are unknown, there are unapproved land assets continue to be classified as fixed assets, fixed assets in the form of motorized vehicles that have not been supported by proof of ownership, and there are even assets that are still controlled by third parties.

Based on the background that has been presented, there are several problem formulations that can be proposed as follows:

- What impact does inventory management have on the efficiency of maintaining fixed assets?
- How does the assessment affect the level of optimization of fixed assets?
- How does supervision and control of assets affect the level of optimization of fixed assets?

## **2. LITERATURE REVIEW**

### **2.1. Asset Inventory**

Asset inventory is conducted in order to gather data and details pertaining to all assets within the organization, with the objective of creating a comprehensive and precise asset record (Sangadji, 2018). The process of inventory involves assessing, controlling, overseeing, arranging, recording information, and detailing the usage of goods. Inventory refers to any goods under the authority of the local government that are utilized for more than a year and are documented in the Inventory book. Inventory is the task of assessing, controlling, overseeing, regulating, recording information, and reporting on local property within the unit of operation (Permendagri No.19 of 2016 Article 1).

### **2.2. Asset Valuation**

Valuation involves the assessment of controlled assets to determine their value, typically carried out by an impartial appraisal consultant. The outcome of the valuation can provide insights into the worth of assets and guidance on pricing strategies for selling them. (Jusmin, 2018). Assessing the value of local properties is done as part of creating the regional

government's financial statement, as well as managing and selling off local properties. The evaluation of regional properties is conducted within the framework of compiling the regional government's financial report, as well as the management and disposal of regional assets (Permendagri No.19 of 2016 Article 325).

### **2.3. Assets Supervision and Control**

Control is the act of overseeing and guiding work to ensure it aligns with the planned course of action. Supervision involves examining and evaluating the reality of task execution to determine if it complies with legal requirements. According to Juanda (2011), implementing asset supervision and control can be seen from the aspects of problem assets and aspects of non-performing assets.

### **2.4. Optimization of Fixed Asset Utilization**

Asset optimization is a method within asset management that focuses on maximizing the potential of various assets in terms of their physical attributes, geographical placement, financial worth, quantity, legality, and economic benefits (Antoh, 2017). According to Jusmin (2018), at the asset optimization stage, local government-owned assets are categorized into those with potential and those without potential. It is crucial to investigate the reasons why assets that cannot be optimized are performing poorly, whether it is due to legal issues, physical constraints, low economic value, or other factors. Control involves making sure that work is being conducted according to the established plan, while supervision involves evaluating whether tasks and activities are being carried out in compliance with laws and regulations (Permendagri No. 19/2016 Article 481 and Article 482).

## **3. RESEARCH METHODS**

The methodology utilized in this study involves a quantitative strategy that analyzes firsthand data gathered from participants' responses to questions in questionnaires distributed directly. The information is subsequently examined through the SEM software in order to collect data and findings that can address the current issues at hand. The study took place in five different Regional Apparatus Organizations (OPDs) in Palembang City, including the Regional Financial and Asset Management Agency, Health Office, Education Office, Fisheries Office, and Library and Archives Service. The research was conducted from May to June 2024.

### **3.1. Population and Sample**

The study was conducted in Palembang City. A purposive sampling method was utilized, specifically targeting individuals who possess the necessary information, comprehension, and ability to align with the research goals (Jusmin, 2018).

### **3.2. Research Variables**

This research variable consists of four variables consisting of one dependent variable and three independent variables. The four variables can be grouped as follows:

- a. The dependent variable (bound) is Optimization of Fixed Asset Utilization (Y)
- b. Independent variables are asset inventory (X1), asset valuation (X2), and asset supervision and control (X3).

### **3.3. Asset Inventory**

Asset inventory in the Palembang City government sector is included in the effective category. Asset inventory involves two key components: physical inventory and legal inventory, also known as juridical inventory (Siregar, 2004). Legal issues owned, time limit of ownership. The work involves collecting, categorizing, organizing, and managing data to align with the goals of asset management. Asset inventory is done to gather information on all assets under the ownership and control of a company, organization, or government entity. Inventory involves calculating, organizing, managing, documenting, and reporting on regional assets in the designated unit of measurement (Permendagri No.19 of 2016 Article 1).

### **3.4. Asset Valuation**

According to Siregar (2004), the assessment of assets owned is considered a crucial process. This evaluation is typically conducted by a certified asset appraisal consultant who is independent and knowledgeable in the field of goods valuation, following the appropriate laws and regulations. The outcomes of this assessment can be beneficial in determining the wealth value, serving as valuable information in price-setting for assets that are to be sold. (Jusmin, 2018). Local authorities use regional asset evaluation when creating balance sheets for the local government, as well as for the management and sale of regional assets.

Local asset valuation is carried out using one or a combination of approaches, namely market data comparison, cost calculation, and income capitalization. Market data comparison is based on price estimates resulting from valuations of similar items. Cost calculation is based on the estimated replacement cost or cost during reproduction of the item at the time of valuation minus depreciation costs. Income capitalization is based on regional assets or goods that have income-generating characteristics. The assessment of local property is conducted while creating the local government's financial statement, as well as when using and transferring regional assets (Permendagri No.19 of 2016 Article 325).

### **3.5. Supervision and Control of Assets**

Control refers to the actions taken to guarantee that work is executed according to the established plan, while supervision involves evaluating the implementation of tasks to ensure compliance with laws and regulations. In the implementation of asset supervision and control, this can be seen from the aspects of problem assets and aspects of non-performing assets (Juanda, 2011). Control involves making an attempt or taking action to guarantee that the work being done aligns with the planned course of action. On the other hand, supervision entails making an effort or taking action to identify and evaluate the true state of affairs concerning the execution of tasks and/or activities to ensure compliance with relevant laws and regulations (Permendagri No. 19/2016 Article 481 and Article 482).

### 3.6. Optimization of Fixed Asset Utilization

Asset optimization is a procedure within asset management that focuses on maximizing the physical capabilities, location, worth, amount, and legal and financial potential of the asset (Antoh, 2017). Optimization involves two main components: increasing revenue and reducing costs. The purpose of asset optimization is to classify assets that have potential and those that do not. Optimization is one of the efforts that every business unit wants to achieve (Purnamasari & Hartati, 2023). Producing at full capacity does not ensure the highest level of profit, as producing at the ideal level is more effective than maximum production since optimization ensures the highest level of profit.

## 4. RESULTS AND DISCUSSION

### 4.1. Research Results

#### 4.1.1. Outer Model Test (Measurement Model)

Prior to conducting measurements, it is crucial to evaluate the accuracy and dependability of the data by assessing the validity and reliability of the variables. Validation and reliability of the model are evaluated through external model testing. The findings of the validity and reliability tests are outlined below:

a. Convergent Validity

The correlation between latent variables and indicators demonstrates convergent validity.

**Table 1. Outer Loading Factor Result**

Matrix	X1	X2	X3	Y
X11	0.916			
X12	0.867			
X13	0.903			
X14	0.899			
X15	0.912			
X16	0.896			
X17	0.829			
X18	0.900			
X19	0.922			
X21		0.824		
X22		0.789		
X23		0.735		
X24		0.744		
X25		0.802		
X26		0.817		
X31			0.845	
X32			0.805	
X33			0.882	

Matrix	X1	X2	X3	Y
X34			0.902	
X35			0.919	
X36			0.905	
X37			0.916	
X38			0.871	
Y11				0.819
Y110				0.833
Y111				0.852
Y112				0.836
Y12				0.867
Y13				0.834
Y14				0.823
Y15				0.813
Y16				0.824
Y17				0.838
Y18				0.819
Y19				0.812

Source: Data Processing Results, 2024

According to the findings from the convergent validity test presented in table 1, it can be inferred that all indicators exhibit a loading factor above 0.5. These findings suggest that all indicators demonstrate strong convergent validity, signifying their effectiveness in measuring each latent variable.

b. Discriminant Validity Test

Based on Table 2, the square root of the average variance extracted for every category surpasses the correlation value with other categories in the model, signifying strong discriminant validity (Ghozali & Latan, 2015).

**Tabel 2. Average Variance Extracted (AVE)**

	AVE	Akar AVE
Asset Inventory	0.799	0,839210939
Asset Valuation	0.618	0,810257367
Asset Supervision and Control	0.777	0,793155722
Optimization of Fixed Asset Utilization	0.691	0,719772881

Source: Data Processing Results, 2024

According to the data presented in Table 2, it is evident that the discriminant validity findings indicate that the square root of the Average Variance Extracted (AVE) for each variable exceeds the correlation value with other variables in the model. The discriminant validity assessment reveals that the AVE root value for the Asset Valuation variable is



0.81025, surpassing the correlation with other variables. Similarly, the AVE root value for the Asset Supervision and Control variable is 0.79315, exceeding the correlation with other variables in the model. Additionally, the AVE root value for the Fixed Asset Utilization Optimization variable is 0.71977, also surpassing the correlation with other variables in the model.

**c. Composite Reliability**

Groups of indicators that assess a certain variable are considered to have strong composite reliability when their composite reliability value exceeds 0.7, although this measure is not set in stone. The findings for composite reliability can be found in Table 3 below:

**Table 3. Reliability Value of Each Research Variable**

Matrix	Cronbach' Alpha	Rho_A	Composite Reliability	Average Variance Extracted (AVE)
Asset Inventory	0.968	0.969	0.973	0.799
Asset Valuation	0.876	0.881	0.906	0.618
Supervision and Control	0.959	0.960	0.965	0.777
Optimization of Fixed Asset Utilization	0.959	0.959	0.964	0.691

Source: Data Processing Results, 2024

The data displayed in the chart demonstrates that the composite reliability values for each latent variable fall between 0.906 and 0.973, signifying that the combined reliability value exceeds 0.7. These findings suggest that all latent variables exhibit strong composite reliability.

**d. Inner Model Test (Structural Model)**

The primary goal of the inner model is to analyze the connection among underlying concepts. Evaluation of the structural model (inner model) involves conducting tests to determine its validity:

**Table 4. R-square Testing**

	R Square	R Square Adjusted
Optimization of Fixed Asset Utilization	0.940	0.935
Asset Inventory		
Asset Valuation		
Asset Supervision and Control		

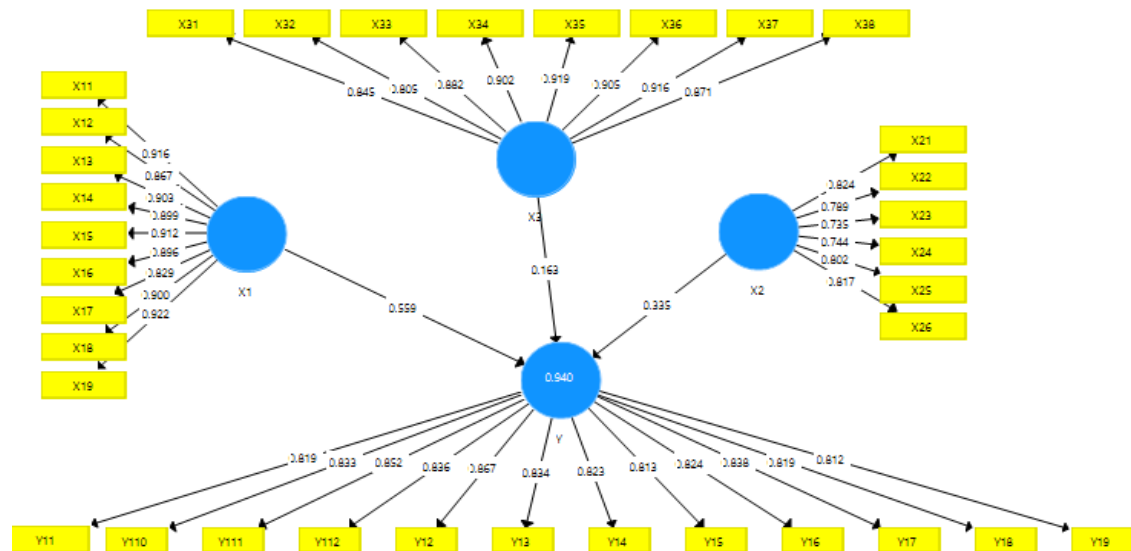
Source: Data Processing Results, 2024

The value of Adjusted R Square is utilized for evaluating the impact of specific hidden variables on another hidden variable. The degree of impact of the independent variable on the dependent variable is measured at 0.94, equivalent to 94%.



#### 4.1.2. Hypothesis Testing Results

The findings from the hypothesis testing can be viewed in both Figure 2 and Table 5.



**Figure 2. Final Path Diagram**  
Source: Data Processing Results, 2024

**Table 5. Path Coefficient Results of Path Model**

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics ( O/STERR )	P Values
X1 -> Y	0.559	0.557	0.088	6.320	0.000
X2 -> Y	0.335	0.331	0.088	3.818	0.000
X3 -> Y	0.163	0.179	0.070	2.324	0.010

Source: Data Processing Results, 2024

The analysis presented in Table 5 suggests that the several hypothesis has been confirmed:

- Examining the connection between variables indicates that asset inventory has a positive impact on optimizing the utilization of fixed assets, with a statistically significant value of  $6.320 > 1.96$  at  $\alpha = 0.05$  and a p value of  $0.000 < 0.05$ . The initial sample also had a value of 0.559, leading to the acceptance of the first hypothesis.
- The analysis of the relationship between variables reveals that asset valuation has a positive effect on enhancing the efficiency of fixed asset utilization, with a statistically significant value of  $3.818 > 1.96$  at  $\alpha = 0.05$  and a p value of  $0.000 < 0.05$ . The original sample had a value of 0.335, resulting in the acceptance of the second hypothesis.
- Upon testing the relationship between variables, it was found that Supervision and Control of Assets have a beneficial impact on optimizing the use of fixed assets, with a statistical value of  $2.324 > 1.96$  at  $\alpha = 0.05$  and a p value of  $0.010 < 0.05$ . The original sample recorded a value of 0.163, leading to the acceptance of the third hypothesis.

## 4.2. Discussion

### 4.2.1. Assets Inventory Positively Affects Optimization of Fixed Asset Utilization

The initial assumption in this research has been approved. This is attributed to the systematic handling of local assets by the management, particularly the adoption of inventory control based on the Minister of Home Affairs Decree No. 152 of 2004 on Guidelines for the Management of Regional Assets. These guidelines are broken down into two main tasks: recording and reporting. A good asset inventory will have an impact on reducing the loss of assets or goods due to negligence or intentionality due to weak technical recording and supervision of every asset owned by the government, especially in the 5 operational offices of the Palembang City government. Improvements in asset inventory directly impact the efficiency of fixed asset utilization. This correlation is supported by a study conducted by Mety in 2020, which found a strong positive relationship between asset inventory and optimal fixed asset usage (Baitanu & Wiagustini, 2020).

### 4.2.2. Assets Valuation Positively Affects Optimization of Fixed Asset Utilization

The study confirms the validity of the second hypothesis, which involves evaluating assets through a certified consultant to determine their value based on relevant laws and regulations. This assessment is crucial for determining the price of assets during sales transactions (Jusmin, 2018). Regional asset valuations play a crucial role for local governments when it comes to updating their financial records and making informed decisions on how to best utilize their fixed assets, particularly those that are undervalued. This is in line with research from Ardiani (2020) the asset valuation findings indicate that they play a crucial role in enhancing the efficiency of fixed asset utilization.

### 4.2.3. Assets Supervision and Control Positively Affects Optimization of Fixed Asset Utilization

The third hypothesis in this study is accepted. Based on the Regulation of the Minister of Home Affairs (Permendagri) No. 17 of 2007, the supervision and regulation of regional property assets are conducted to guarantee the efficient and effective administration of regional properties. Therefore, the functions of guidance, supervision, and control of assets are very important to ensure orderly administration in regional property management. These findings align with research by Ardiani (2020), indicating that effective management and monitoring of assets can lead to improved utilization of fixed assets. Effective asset management includes timely maintenance and maintenance strategies. Thus, the service life of assets can be extended and repair costs can be minimized, which ultimately increases the economic value of these assets.

## 5. CONCLUSION

After reviewing the test findings and conversation laid out in the preceding section, it is apparent that proficient asset management has the potential to enhance the efficiency and effectiveness in utilizing fixed assets. With structured management, the government can ensure that each asset is used in accordance with its purpose and function, reduce waste, and increase productivity. good asset management increases transparency and accountability in fixed asset management. This includes accurate record keeping, transparent reporting, and

regular audits, all of which help in preventing misuse of assets. The data and information obtained from asset management allows the government to make better decisions regarding the use, development, and disposal of fixed assets. These decisions are based on an analysis of the needs and condition of the assets, thus supporting more strategic planning.

## **REFERENCES**

- Antoh, A. E. (2017). Pengaruh Manajemen Aset Dalam Optimalisasi Aset Tetap (Tanah dan Bangunan) Pemerintah Daerah (Studi di Kabupaten Paniai). *Jumabis: Jurnal Manajemen Dan Bisnis*, 1(2).
- Ardiani, S. (2020). Pengaruh manajemen aset terhadap optimalisasi pemanfaatan aset tetap pemerintah kota Palembang. *Jurnal Riset Terapan Akuntansi*, 4(1), 20–31.
- Baitanu, M. A., & Wiagustini, N. L. P. (2020). Pengaruh Manajemen Aset Terhadap Optimalisasi Pemanfaatan Aset Tetap di Kabupaten Karangasem. *Journal of Applied Management Studies*, 2(1), 38–48.
- Darmawan, A., Hertati, L., Puspitawati, L., Gantino, R., & Ilyas, M. (2023). Pengaruh Covid-19 Terhadap Proses Pembelajaran Virtual Di Indonesia. *Indonesian Journal of Thousand Literacies*, 1(2), 137–148.
- Ghozali, I., & Latan, H. (2015). Partial least squares konsep, teknik dan aplikasi menggunakan program smartpls 3.0 untuk penelitian empiris. *Semarang: Badan Penerbit UNDIP*.
- Hertati, L., Fery, I., & Safkaur, O. (2020). Pengaruh komitmen organisasi terhadap sistem informasi keuangan. *Akuntabilitas: Jurnal Ilmu Akuntansi*, 13(1), 125–136.
- Hertati, L., & Syafarudin, A. (2018). How the implementation of the industrial revolution 4.0 management information system influenced innovation: the case of small and medium enterprises in Indonesia. *Journal of Asian Business Strategy*, 8(2), 52–62.
- Hertati, L., Widiyanti, M., Desfitriana, D., Syafarudin, A., & Safkaur, O. (2020). The effects of economic crisis on business finance. *International Journal of Economics and Financial Issues*, 10(3), 236.
- Hertati, L., Zarkasyih, W., Suharman, H., & Umar, H. (2019). the Effect of Human Resource Ethics on Financial Reporting Implications for Good Government Governance (Survey of Related Sub-Units in State-Owned Enterprises in Sumsel). *International Journal of Economics and Financial Issues*, 9(4), 367–376. <https://doi.org/10.32479/ijefi.8466>
- Juanda, J. (2011). *Implementasi Good Governance Dalam Proses Transfer Aset Pemerintah Daerah Kota Metro*.
- Jusmin, N. (2018). Pengaruh Manajemen Aset Terhadap Tingkat Optimalitas Aset Tetap (Tanah dan Bangunan) Pemerintah Kabupaten Sorong. *EQUILIBRIUM: Jurnal Ilmiah Ekonomi Dan Pembelajarannya*, 6(2), 139–147.
- Lestari, R., & Hertati, L. (2020). Bagaimana pengaruh strategi bisnis, kekuatan produk terhadap kualitas sistem informasi akuntansi manajemen: studi kasus pada usaha kecil dan menengah di Indonesia. *Kajian Akuntansi*, 21(1), 1–16.
- Noviawati, E. (2016). Optimalisasi Pengelolaan Aset Daerah Terhadap Penyelenggaraan Otonomi Daerah. *Jurnal Ilmiah Galuh Justisi*, 4(1), 47–61.
- Purnamasari, E., & Hartati, L. (2023). Meningkatkan Keuntungan Bisnis Dengan

- Penggunaan Sistem Aplikasi Kasir Stroberi Bagi Pemula. *JMM (Jurnal Masyarakat Mandiri)*, 7(2), 1198–1205.
- Rachmad, Y. E., Ilham, R., Indrayani, N., Manurung, H. E., Judijanto, L., & Laksono, R. D. (2024). *Layanan Dan Tata Kelola E-Government: Teori, Konsep Dan Penerapan*. PT. Green Pustaka Indonesia.
- Sangadji, S. M. (2018). Pengaruh Inventarisasi Aset Terhadap Legal Audit Dan Penilaian Aset (Studi Kasus Pada Pemerintah Kota Bandung). *Jurnal Tata Kelola & Akuntabilitas Keuangan Negara*, 4(1), 41–62.
- Siregar, D. D. (2004). Manajemen aset: strategi penataan konsep pembangunan berkelanjutan secara nasional dalam konteks kepala daerah sebagai CEOs pada era globalisasi & otonomi daerah. *Language*, 43(836p), 26cm.
- Susanti, I. D., Hertati, L., & Putri, A. U. (2023). The Effect Of Green Accounting And Environmental Performance On Company Profitability. *Cashflow: Current Advanced Research On Sharia Finance And Economic Worldwide*, 2(2), 320–331.
- Wulandari, P. (2021). *Analisis Peran Pemerintah Desa dalam Rangka Optimalisasi Pengelolaan Alokasi Dana Desa terhadap Pemberdayaan Masyarakat di Masa Pandemi (Studi Kasus pada Pemerintah Desa Betro Kecamatan Sedati Kabupaten Sidoarjo)*. Universitas 17 Agustus 1945 Surabaya.

## Copyrights

Copyright for this article is retained by the author(s), with first publication rights granted to the journal.

This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license (<http://creativecommons.org/licenses/by/4.0/>).