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Analysis of Factors Influencing The Disclosure of Biological Assets in Plantation Companies in Indonesia

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ABSTRACT

Disclosure of biological assets in plantation companies in Indonesia remains inconsistent, despite detailed reporting guidelines in Statement of Financial Accounting Standards No. 69. This indicates a need to examine further the factors influencing the level of disclosure. The purpose of this research is to analyze the determinants that affect the disclosure of biological assets in plantation companies in Indonesia. The research method used is quantitative, processing numerical data to objectively assess relationships between variables. The study population comprises 17 plantation companies listed in Indonesia, and data analysis was conducted using descriptive statistical methods, with results presented in tables and processed using statistical software. The research period covers 2019 to 2024 to capture the development of biological asset disclosures after the pandemic. The study results reveal that the intensity of biological assets does not have a significant effect on disclosure levels. In contrast, company growth, leverage ratio, and public ownership are found to affect the level of biological asset disclosure positively.

Keywords: Biological Assets, Plantation

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INTRODUCTION

Indonesia has a considerable wealth of natural resources. Almost half of Indonesia is covered by extensive forests stretching from Sabang to Merauke (Santoro et al., 2025). These forests play a role in the life of the Indonesian nation (Yuliani et al., 2023). Forests in Indonesia alone are estimated at 102.53 million hectares (Segah et al., 2025). Some of these forests are tropical rainforests, given Indonesia's tropical climate, which is influenced by its location in Asia (Lubis et al., 2024; Segah et al., 2025). These tropical rainforests have high biodiversity, including 10% of the world's plants, 12% of mammals, 16% of reptiles and amphibians, and 17% of birds (Pillay et al., 2022). The functions of forests in Indonesia are numerous, including serving as water absorption areas, preventing erosion, regulating the climate, and providing natural resources such as wood, fruits, and medicinal plants (Supriatna & Lenz, 2025). Forests

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also function as sources of timber, conservation areas, tourist attractions, and recreational places (Vukadinović et al., 2025). Specifically, conservation forests have their own regulations and legislation. However, due to the vast extent of Indonesia's forests, there are many challenges to their preservation, including deforestation, forest degradation, and land-use conflicts. Deforestation itself is caused by the expansion of plantation areas and mining activities (Ahmed et al., 2025; Maurya & Vivek, 2025; Santoro et al., 2023). Forest damage is caused by illegal logging and forest fires. Meanwhile, land-use conflicts stem from disputes between the community and the government, or between the community and plantation companies.

Data from the Ministry of Environment and Forestry shows that deforestation in Indonesia in 2024 reached around 0.35 million hectares (Ministry of Environment and Forestry, 2025). This data increased compared to the previous year of 0.26 million hectares. These figures indicate that pressure on forest areas remains high due to the expansion of plantations and mining.

Land clearing for oil palm cultivation has increasingly been carried out in the era of decentralization. Investment in the oil palm sector comes from both local and international entrepreneurs, especially from Malaysia (Harun & Laksito, 2022). The profitability of oil palm cultivation is rising in line with global demand as efforts to reduce fossil fuel use intensify. According to data from the Central Statistics Agency (Central Bureau of Statistics, 2025), Indonesia's palm oil plantation area reached around 16.8 million hectares, with export contributions reaching USD 26.3 billion in 2024. This commodity also absorbs more than 16 million workers, both directly and indirectly. Although oil palm can be used as an alternative energy source to combat global warming, there are several negative impacts arising from oil palm plantations, such as disruption of ecosystem balance due to reduced biodiversity, environmental pollution caused by pesticide use, the difficulty of decomposing oil palm plant residues, and the extensive time required to restore the land to its original condition (Purnama et al., 2025; Wulandari et al., 2025). Various efforts have been made to sustain this forest environment. These include the designation of protected forests, improving forest quality, and community empowerment. For protected forests, the government designates areas considered to have ecological functions and natural resources (Fitzsimons & Wescott, 2025). To improve

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forest quality, the government undertakes reforestation (replanting), greening, and sustainable forest management to maintain forest balance. And, in terms of empowerment itself, the government strives to enable local communities to participate in preserving forest sustainability (Dushkova & Ivlieva, 2024). Plantations involve producing crops on land suitable for those crops, cultivating them, harvesting, marketing the produce, and developing cultivation through science, technology, and management to achieve welfare for plantation entrepreneurs and society. This indicates that the plantation business is a collaboration between the community, companies, and legal institutions that support these activities. Plantations are an agro-industrial sector that begins with seed planting, caring for young plants, using pesticides, harvesting, revitalizing plants, and processing the harvest into raw materials for industry or semi-finished products ready for consumer marketing.

In the context of national economic development, the plantation sector plays a strategic role, serving as one of the main pillars of state revenue and a source of foreign exchange through export products. Plantation commodities—palm oil, rubber, coffee, cocoa, tea, and tobacco — have been the backbone of Indonesia's economy for the past few decades. Palm oil, for example, is not only a key ingredient in the food, cosmetics, and renewable energy industries, but also absorbs a large workforce, especially in rural areas. This sector has created employment opportunities for millions of Indonesians and has contributed to economic development in remote areas that were previously difficult to reach by industrial investment.

Nevertheless, the rapid development of the plantation sector also presents various dilemmas and new challenges. On one hand, plantations contribute significantly to the increase of Gross Domestic Product and national exports. However, this activity often has negative impacts on the environment and social communities. Large-scale land clearing for the expansion of palm oil and rubber plantations, for example, has led to decreased natural forest cover, increased carbon emissions, and damage to wildlife habitats. In addition, agrarian conflicts have also arisen between plantation companies and indigenous communities who feel they have lost access to land and resources that are central to their livelihoods.

From the perspective of the green economy and sustainable development, the plantation sector must be managed responsibly to continue providing economic benefits without

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compromising ecosystem balance and the social rights of surrounding communities. The principle of sustainability in plantation management encompasses three main dimensions: economic, social, and environmental. The economic dimension focuses on increasing the productivity and added value of plantation outputs; the social dimension emphasizes the welfare of workers and local communities; and the environmental dimension stresses the conservation of natural resources and the reduction of ecological impacts.

In addition, challenges in plantation management in Indonesia are related to the implementation of government regulations and policies. The central and regional governments, including the Indonesian sustainable palm oil and the roundtable on sustainable palm oil, have issued various rules on land governance, licensing, and sustainable practices. These two standards aim to encourage companies to adopt environmentally friendly cultivation practices and respect the rights of local communities. However, implementing these policies in the field often encounters obstacles, such as weak supervision, overlapping permits, and limited awareness among business actors of sustainability principles.

From a social perspective, the presence of plantations also has complex impacts. Although they can increase local community income through job creation and related economic activities, there is often inequality in the distribution of financial benefits between large companies and small communities. Plantation workers frequently face less-than-ideal working conditions, such as low wages, lack of social security, and limited access to education and healthcare. This highlights the importance of the government's role in enforcing labor regulations and strengthening social protection for workers in this sector.

In a global context, Indonesia's plantation commodities also face pressure from international trade issues and sustainability demands. The European Union, for example, has tightened import standards for palm oil due to environmental and deforestation concerns. This policy encourages Indonesia to enhance the positive image of its plantation commodities by increasing transparency, implementing supply chain tracking, and pursuing green certification. Starting in 2024, the European Union will implement the European Union Regulation on deforestation-free products (EUDR) (Oliveira et al., 2024). This policy requires palm oil, coffee, and rubber products to be free from deforestation practices before they can be exported to the

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European market. The EUDR policy has prompted plantation companies in Indonesia to enhance transparency and sustainability reporting, including in the disclosure of biological assets.

Besides palm oil, other plantation sectors such as rubber, coffee, and tea also play an important role in Indonesia's non-oil and gas exports. All three contribute significantly to the welfare of smallholder farmers, although they still face global price fluctuations, climate change, and limitations in cultivation technology. Therefore, strengthening farmers' capacities through training, access to financing, and modern agricultural technology becomes a strategic step to increase the competitiveness of the national plantation sector.

The plantation sector in Indonesia has economic, social, cultural, and ecological dimensions. Balancing these aspects is the key to ensuring that plantation outputs can provide long-term benefits for all stakeholders while maintaining the sustainability of natural resources for future generations. In fact, there is still a research gap regarding the disclosure of biological assets in plantation companies in Indonesia. Most previous studies have focused more on the aspects of profitability, company size, and corporate governance in relation to the disclosure of biological assets (Ika et al., 2022; Renata et al., 2024). Meanwhile, studies linking the disclosure of biological assets to environmental sustainability aspects, new regulations, and global market pressures, such as the implementation of the EUDR, are still very limited. In addition, there are still a few studies that comprehensively review the factors influencing the level of transparency in plantation companies' reporting of biological assets. Based on this issue, the researcher has conducted a study on the factors influencing the disclosure of biological assets in plantation companies in Indonesia.

LITERATURE REVIEW

Agency Theory

In general, agency theory describes the relationship between owners or shareholders and their employees within a business organization (Al-Faryan, 2024). Each leader has a specific method of managing their company. Some founders choose to manage their business directly, while others prefer to delegate management to a third party. However, over time and as

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organizational structures become more complex, conflicts often arise between owners and management, particularly between shareholders (investors) and agents represented by top management. Agents are appointed based on the tasks and responsibilities set by the principal.

On the other hand, the principal's responsibility is to compensate the agent for the work they have performed. Furthermore, differences in interests between agents and principals can lead to agency conflicts. Although the goals of agents and principals are the same —namely, to earn profits and avoid potential risks in the company —agency conflicts that arise are usually caused by differences in ownership and interests between the two. This tension can disrupt the continuity of the company's operations. The agency relationships that may occur in a company are: between the principal and the agent. If the agent has less capital, they tend to report higher profits. Between the agent and creditors, the agent reporting higher profits will give creditors the impression that the company can repay its debts with interest on time. Between the agents and the government, agents tend to report conservative profits to reduce oversight from the government, tax authorities, and other interested parties. So, essentially, the relationship between plantations and agency theory lies in their ownership and management structures.

Agency theory explains the relationship between owners and managers within an organization (Aliahmadi, 2024). In the context of plantations, plantation owners delegate management authority to plantation managers. Agency problems arise when the interests of owners and managers are misaligned, leading to conflicts and potential losses for owners.

The relationship between a principal and an agent arises from a cooperation contract in which the principal assigns certain responsibilities to the agent to manage the resources owned by the principal. In practice, this relationship often does not run smoothly. This is because each party has different interests and goals. Agents tend to maximize their personal gain, whereas principals aim to maximize the company's value. This difference creates the risk of asymmetric information, where the agent has more information about operational conditions than the principal. This opens the door to moral hazard and adverse selection.

In the plantation sector, the agency phenomenon can be observed in the relationship between landowners and plantation managers or between parent companies and their operational units in the field. Plantation owners often lack the time or expertise to oversee all

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operational activities, from land preparation and planting to fertilization and harvesting. As a result, supervision is entrusted to managers with greater authority and detailed knowledge of daily plantation operations. However, when managers prioritize personal interests — such as obtaining bonuses, maintaining reputation, or reducing costs — without considering production quality, conflicts of interest arise that can reduce business efficiency.

A concrete example of agency conflict in the plantation sector is when managers report harvest results that are higher than reality to demonstrate good performance to the owners. In the short term, this can increase the owners' trust. However, in the long term, it risks creating an imbalance between financial reports and on-the-ground conditions. Furthermore, agents may make hazardous decisions, such as expanding land without thorough evaluation, in the hope of achieving greater profits, while the owners entirely bear the risk of losses.

To address these issues, agency theory emphasizes the importance of implementing proper control mechanisms and incentive systems. Principals can implement internal monitoring systems such as audits, periodic reports, or performance evaluations based on production results and cost efficiency. On the other hand, agents are compensated proportionally to their contributions and actual work outcomes. Performance-based incentives are believed to align the interests of agents and principals because the company's success directly affects agents' profits.

In the modern context, technology also plays a vital role in reducing agency problems in the plantation sector. The use of digital-based plantation management information systems, agricultural sensors, and satellite imagery for land monitoring can increase transparency and reduce information asymmetry. Owners can monitor crop conditions, productivity, and worker activities in real time without being on-site. This transparency will reduce opportunities for misconduct and strengthen managers' accountability as agents.

In addition to the relationship between owners and managers, agency conflicts can also involve other parties, such as field workers, agricultural input suppliers, financial institutions, and the government. For example, a manager may choose a particular fertilizer supplier due to personal gain, rather than because it is the best quality for the plantation. Therefore, good

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governance is essential so that all parties work in accordance with the principles of efficiency, transparency, and fairness.

Stakeholder Theory

The stakeholder theory emphasizes the importance of a company in building harmonious relationships with various parties with interests in its operations, not limited solely to shareholders (Awa et al., 2024). Thus, this theory holds that shareholders are not only responsible for profits but also for all parties involved in the company, such as the government, creditors, investors, and the international community. Therefore, the main goal of this theory is to foster practical cooperation among stakeholders, the government, and international parties, enhance trust, and create sustainable benefits for all parties.

This stakeholder theory encompasses proper decision-making, clear communication among stakeholders—management, government, investors, creditors, and international parties—and corporate social responsibility, as well as risk management (Fatoki & Adio, 2024). The essence of the stakeholder concept in the plantation sector is how companies interact with various parties with interests, both those directly involved and those not directly involved, in the operations and sustainability of plantation businesses. This approach emphasises the importance of considering the interests of all parties affected by the company's activities, rather than focusing solely on shareholders. Companies that apply stakeholder principles will strive to establish honest and transparent communication with each relevant party, respond to and understand the needs and expectations of each stakeholder group, involve them in decision-making processes that affect their interests, and manage the social and environmental impacts arising from plantation activities. They also strive to strike a balance between business interests and social and environmental responsibilities. Therefore, stakeholder theory becomes a crucial foundation for companies in conducting their operations responsibly and sustainably. This, in turn, can help companies enhance their reputation, reduce the likelihood of conflicts, and create sustainable long-term value.

The long-term success of an organisation is determined by the extent to which it delivers profits to shareholders and meets the expectations of various stakeholders. In a modern context,

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this concept has evolved into the basis for corporate social responsibility practices, corporate governance, and sustainability.

In the plantation sector, stakeholder theory is highly relevant because the company's operations have broad impacts on the environment, local communities, and the regional economy. The main stakeholders in the plantation industry include company owners, managers, workers, local governments, surrounding communities, suppliers, financial institutions, and consumers. Each has different interests, such as workers seeking welfare and workplace safety, communities demanding environmental sustainability, the government expecting tax revenue and economic contributions, and shareholders expecting financial returns. The challenge for companies is how to balance all these interests fairly and sustainably.

For example, in managing palm oil plantations, companies need to ensure that production activities do not damage forest ecosystems, do not cause land conflicts with indigenous communities, and still provide optimal economic returns for investors. The implementation of stakeholder principles can be achieved through open dialogue with communities, the application of sustainable environmental standards, such as the Roundtable on Sustainable Palm Oil, and active government involvement in monitoring operational activities. In this way, companies can gain social legitimacy and create mutually beneficial relationships with all parties involved.

Furthermore, this theory also emphasizes the importance of transparency and accountability. Companies are expected to report financial, social, and environmental performance through sustainability reports. These reports serve as a form of communication between the company and its stakeholders, providing an overview of the impact of the company's activities on social, economic, and ecological aspects. With transparency of information, public and investor trust in the company will increase. Ultimately, it will strengthen the company's reputation and competitiveness in the global market.

In addition, stakeholder theory plays an essential role in building good corporate governance. In practice, applying the principles of fairness, responsibility, transparency, and accountability helps companies avoid conflicts of interest and strengthen relationships with external parties. In the context of plantations, good governance means balancing economic

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efficiency, social welfare, and environmental sustainability. Thus, it is expected to achieve long-term sustainability.

Formulation of Hypothesis

1. Intensity of biological assets on the disclosure of biological assets

Based on Agency theory, the transfer of authority to an agent by the owner can originate from the ownership of an asset, including biological assets. The extent to which an agent can manage biological assets can be determined through the intensity of biological assets.The intensity of biological assets measures the importance of biological asset disclosure in a process or production-intensity context. Thus, the intensity of biological assets is assessed based on the ratio of biological assets to total assets, the revenue contribution from biological assets, and their usage level or life cycle. If we consider the relationship between the intensity of biological assets and the disclosure of biological assets, several conclusions can be made: 1. the higher the intensity of biological assets, the greater the company's dependence on these assets; 2. companies with high intensity need to implement proper accounting policies such as valuation, depreciation, and disclosure of biological assets, considering the associated risks are pretty high; and 3. this intensity can also affect financial and operational risks, given the high allocation caused by external factors such as weather or climate. From the conclusion above, the author applies the hypothesis as follows:

H1: Biological asset intensity on the disclosure of biological assets.

2. Company growth towards the disclosure of biological assets

According to stakeholder theory, a company's operations largely depend on its growth. Company growth is strongly related to the disclosure of biological assets, including the quantity, quality, and productivity of those assets. Company growth in terms of investment also affects biological assets by considering the possibility of adding new biological assets or developing existing ones. However, this is a long-term issue. With increased productivity, the value of biological assets will rise. Additionally, with accurate financial reporting and fair value, it can reflect total assets and profit quite well. However, fundamentally, every company's growth also carries risks, and for plantation companies, these risks include commodity price fluctuations, biological risks, and sustainability issues.

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H2: Company growth influences the disclosure of biological assets.

3. Leverage on the disclosure of biological assets

At the initial stage of establishing a plantation company, a large amount of capital is required, which is normal. This is closely related to the Stakeholder theory. Therefore, it is also reasonable for a plantation company to make large loans with long terms. This also carries significant risks, given that biological assets are subject to factors such as pests, diseases, weather, and climate. However, if the company succeeds in increasing its biological assets, it is not surprising that this is fundamental to changes in leverage. Moreover, if the plantation company manages to balance leverage, capital, and biological assets, it can operate well in the future.

H3: Leverage affects the disclosure of biological assets.

4. Public ownership of biological asset disclosure

There must be transparency between public ownership and plantation companies, especially in their financial reports, including the measurement and disclosure of biological assets. This is very much in accordance with Agency and Stakeholder theories. Biological assets are measured at fair value, taking into account assumptions, valuation methods, and the risks associated with them. Fluctuations in the value of biological assets also affect the company's stock price. With public ownership, companies find it easier to fund investments in biological assets, thereby promoting their growth.

H4: Public ownership influences the disclosure of biological assets.

METHOD

This research used a numerical approach, meaning it relies on numerical data. This study focused on objective measurements, standardized data collection, and statistical analysis to test hypotheses or explain a phenomenon. In this study, the author used documentation methods and research instruments to collect data and employed quantitative or statistical analysis to test the formulated hypotheses. Numerical data is analyzed using various statistical techniques to reveal patterns, relationships, and differences between variables (Hinton, 2024). The purpose of quantitative research was to maintain objectivity in data collection and analysis,

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ensuring that the results of this research are trustworthy and accurate. Quantitative methods can be applied to a broader population based on the sample studied. In general, quantitative research is usually conducted to test pre-existing hypotheses (Gamage, 2025).

RESULT AND DISCUSSION

Table 1 below shows the result of descriptive statistics tests on the influence of each factor affecting the disclosure of biological assets:

Table 1. Descriptive Statistics

Variable	N	Minimum	Maximum	Mean	Std. Deviation
Intensity of Biological Assets	102	0.16	8.52	216.58	1.43609
Growth	102	0.00	10.00	47.73	1.42021
Leverage	102	0.10	29.32	194.31	3.42194
Public Ownership	102	-7949.73	348.64	2925.20	798.89259
Disclosure of Biological Assets	102	0.13	808.09	920.89	79.90987

Source: Data processed by the researcher, 2025

In this study, descriptive statistical analysis was applied, with the first independent variable, intensity of biological assets, ranging from 0.16% to 8.52% and having a mean of 216.58%. Its standard deviation was recorded at 1.43%. The second independent variable was growth, with a minimum value of 0.00%, a maximum value of 10.00%, and a mean of 47.73%. Meanwhile, its standard deviation was 1.42%. The third independent variable, leverage, had a minimum value of 0.10% and a maximum of 29.32%. This indicates a value of 194.31%, with a standard deviation of 3.42%. The fourth independent variable was public ownership, with a minimum value of -7949.73%, a maximum of 348.64%, and a mean of 2925.20%. The standard deviation for this variable was recorded at 798.89%. The dependent variable, disclosure of biological assets, ranges from 0.13% to 808.09%, with a mean of 920.89% and a standard deviation of 79.90%.

Table 2. Test Normality

One-Sample Kolmogorov-Smirnov Test						
		Intensity of Biological Assets	**Growth**	**Leverage**	**Public Ownership**	**Disclosure of Biological Assets**
N		102	102	102	102	102
Normal	Mean	2.1233	0.4679	1.9050	28.6784	9.0283

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One-Sample Kolmogorov-Smirnov Test						
		Intensity of Biological Assets	**Growth**	**Leverage**	**Public Ownership**	**Disclosure of Biological Assets**
Parameter	Std. Deviation	1.43609	1.42021	3.42194	798.89259	79.90987
Most Extreme Difference	Absolute	0.205	0.371	0.299	0.493	0.504
	Positive	0.205	0.359	0.291	0.396	0.504
	Negative	-0.121	-0.371	-0.299	-0.493	-0.456
Test Statistic		0.205	0.371	0.299	0.493	0.504
Asymp.Sig (2-tailed)		0.000	.000	.000	.000	0.000

Source: Data processed by the researcher, 2025

Table 2 above shows the results of the normality tests for the independent variables. The first variable, the intensity of biological assets, had a significance value of 0.00, indicating that the intensity of biological assets data was not normally distributed, as it was less than 0.005. The second variable, growth, had a significance value of 0.00, meaning it was not normally distributed because it was less than 0.05. The third variable, leverage, had a p-value of 0.00 in the normality test, indicating it is not normally distributed because the p-value is less than 0.05. The fourth variable, public ownership, had a p-value of 0.00 in the normality test, indicating it was not normally distributed, as the p-value was greater than 0.05. For the dependent variable, disclosure of biological assets, the normality test shows a p-value of 0.00, indicating the data are not normally distributed.

Table 3. Multicollinearity Test

	Collinearity Tolerance	**Statistic Variance Inflation Factor**
Intensity of Biological Assets	0.984	1.017
Growth	0.997	1.003
Leverage	0.985	1.015
Public Ownership	1.000	1.000

Source: Data processed by the researcher, 2025

In Table 3 above, it is essential first to understand the required standards. If the tolerance value exceeded 0.100 and the variance inflation factor was less than 10.00, there was no indication of multicollinearity. Conversely, if the tolerance value was below 0.10 and the variance inflation factor exceeded 10.00, multicollinearity was indicated. The intensity of the biological assets variable showed a tolerance of 0.984 and the variance inflation factor of 1.017, indicating no multicollinearity. For the Growth variable, the tolerance value was 0.997 and the variance inflation factor was 1.003, indicating no multicollinearity.

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Meanwhile, for the Leverage variable, the tolerance value was 0.985 and the variance inflation factor was 1.020, indicating no symptoms of multicollinearity. For the public ownership variable, the tolerance value was 1.000 and the variance inflation factor was 1.000, indicating no symptoms of multicollinearity. From these results, it can be concluded that in the multicollinearity test, all independent variables do not exhibit symptoms of multicollinearity.

Table 4. Autocorrelation Test

R	R.Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1.000	0.999	0.999	2.42431	0.556

Source: Data processed by the researcher, 2025

In the autocorrelation test, the Durbin-Watson value in the Table 4 above was 0.556. It should be noted that for an autocorrelation test with four independent variables, the criteria were DU < DW < 4 - DU, where DU = 1.7596. Therefore, the Durbin Watson value should be 1.7596 < 0.556 < 2.2404. Since the Durbin Watson value was not greater than DU, or in other words, 1.7596 > 0.556 < 2.2404, the data does not pass the autocorrelation test.

Table 5. Heteroscedasticity Test

	Unstandardized B	Coefficient Std. Error	Standardized Coefficient Beta	t	Sig.
Intensity of Biological Assets	-0.72	0.169	-0.001	-0.426	0.671
Growth	2.170	0.170	0.039	12.755	0.000
Leverage	-0.222	0.071	-0.010	-3.126	0.002
Public Ownership	-0.100	0.000	0.999	-330.878	0.000

Source: Data processed by the researcher, 2025

In the Glejer test, there is a rule applied, namely, if the significance value is above (more than 0.05), the conclusion drawn is that there are no signs of heteroskedasticity, and vice versa is also true. For the intensity of the biological assets variable, the significance value was 0.671, indicating no evidence of heteroskedasticity. For the growth variable, the value was 0.000, indicating heteroskedasticity. As for the leverage variable, the significance value was 0.002, indicating heteroskedasticity. Meanwhile, for the public ownership variable, the significance value was 0.000, indicating heteroskedasticity. Thus, in this test, almost 50% of the variables exhibit heteroskedasticity.

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Table 6. Multiple Linear Regression Analysis

	Unstandardized B	Coefficient Std. Error	Standardized Coefficient Beta	t	Sig.
Constant	11.454	0.476		24.051	0.000
Intensity of Biological Assets	-0.072	0.169	-0.001	-0.426	0.671
Growth	2.170	0.170	0.039	12.755	0.000
Leverage	-0.222	0.071	-0.010	-3.126	0.002
Public Ownership	-0.100	0.000	0.999	-330.878	0.000

Source: Data processed by the researcher, 2025

The regression equation obtained is:

Disclosure of biological assets = 11,454 – 0,072 × intensity of biological assets + 2,170 × growth – 0,222 × leverage – 0,100 × public ownership

1. The obtained constant (intercept) value of 11.454 indicates that when all independent variables (intensity of biological assets, growth, leverage, and public ownership) were considered to be zero or constant, the disclosure of biological assets is predicted to be at 11.454. In other words, without the influence of these four independent variables, the baseline or average value of disclosure of biological assets remains at this level. This constant value represents the basic condition that serves as the starting point for changes before the independent variables exert their influence. Although in practice independent variables are rarely truly zero, this constant still illustrates the regression model's initial level of the dependent variable.
2. The regression coefficient for the intensity of biological assets variable was -0.072, indicating an inverse relationship between the intensity of biological assets and the disclosure of biological assets. This means that every one-unit increase in the intensity of biological assets variable will result in a decrease of 0.072 units in the disclosure of biological assets value, assuming other variables in the model remain constant. Conversely, if the intensity of biological assets value decreases, disclosure of biological assets is likely to increase. This negative relationship indicates that improvements in aspects represented by the intensity of biological assets do not enhance disclosure of biological assets. Therefore, it can be concluded that the intensity of biological assets variable has a negative influence and can potentially reduce the disclosure of biological assets value if not properly managed.

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3. The regression coefficient for variable growth (most likely representing a factor such as 'good governance' or 'growth') was 2.170, indicating a direct relationship between variable growth and disclosure of biological assets. This shows that every one-unit increase in variable growth will increase the disclosure of biological assets value by 2.170 units, assuming other variables remain constant. This positive relationship indicates that an increase in factor growth significantly increases the disclosure of biological assets. The higher the value of growt, the greater the likelihood of improved performance or outcomes represented by the disclosure of biological assets. Therefore, variable growth can be said to provide a strong and constructive contribution to the increase of the dependent variable.
4. The regression coefficient for variable leverage (- 0.222) indicated that variable leverage has a negative effect on the disclosure of biological assets. This means that every one-unit increase in variable leverage will decrease the disclosure of biological assets value by 0.222 units, assuming the other variables remain constant. Conversely, if variable leverage decreases, the disclosure of biological assets value tends to increase. This negative coefficient reflects an inverse relationship, where an increase in the aspect represented by leverage actually reduces the effectiveness or outcome measured by the disclosure of biological assets. This may indicate that variable leverage needs to be controlled or managed carefully so it does not have a negative impact on the dependent variable.
5. The regression coefficient for the public ownership variable, -0.100, also indicated a negative relationship with the disclosure of biological assets. This means that each one-unit increase in the public ownership variable will decrease the disclosure of biological assets value by 0.100 units, assuming other variables are constant. Conversely, a decrease in the public ownership value could potentially increase the disclosure of biological assets value. This negative relationship indicates that an increase in the public ownership factor may impact a reduction in performance or outcomes represented by the disclosure of biological assets. This finding suggests the need to monitor the public ownership variable to prevent its increase from causing undesirable effects on the dependent variable. Additionally, this negative relationship may reflect an imbalance among the factors that make up the disclosure of biological assets, in which an increase in one factor does not necessarily correspond to an overall increase in results.

Table 7. F-test

	Sum of Squares	Df	Mean Square	F	Sig.

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	Sum of Squares	Df	Mean Square	F	Sig.
Regresion	644.374.191	4	161.093.548	27.409.647	0.000
Residual	570.094	97	5.877		
Total	644.944.285	101			

Source: Data processed by the researcher, 2025

A regression model was considered to have a combined effect if its significance value was below 0.05. In the table, the reported significance value was 0.000, indicating a constant value, so it can be concluded that these variables collectively affect the dependent variable.

Table 8. T-test

	Unstandardized B	Coefficient Std. Error	Standardized Coefficient Beta	T	Sig.
Constant	11.454	0.476	0	24.051	0.000
Intensity of Biological Assets	-0.072	0.169	-0.001	-0.426	0.671
Growth	2.170	0.170	0.039	12.755	0.000
Leverage	-0.222	0.071	-0.010	-3.126	0.002
Public Ownership	-0.100	0.000	0.999	-330.878	0.000

Source: Data processed by the researcher, 2025

In Table 8, the significance value for the intensity of the biological assets variable was 0.671; thus, it can be concluded that there is no significant effect. For the Growth variable, the obtained significance value was 0.000, indicating a significant impact. The significance value for the Leverage variable was 0.002, indicating a significant effect. Meanwhile, for the public ownership variable, the significance value reaches 0.000, indicating a significant impact. Based on the T-test, the results are as follows:

1. First Hypothesis

The T-statistic for the intensity of the biological assets variable was -0.426, with a p-value of 0.671, indicating that the value is greater than 5% (0.671 > 0.05). Given that the significance level exceeds the 5% level, the intensity of the biological assets variable does not affect the disclosure of biological assets in plantation companies in Indonesia. Therefore, the first hypothesis is not supported, indicating that the intensity of biological assets does not affect their disclosure.

These results indicate that the intensity of biological assets has not become a factor encouraging companies to be more transparent in disclosing them. In other words, the proportion of biological assets owned by a company does not necessarily determine the extent to which the company reports information related to biological assets in its financial statements. Several factors could cause this phenomenon. First, there may be differences in understanding among companies regarding the implementation of Statement of Financial Accounting

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Standards No. 69, which regulates the recognition and measurement of biological assets. Second, some companies may not yet have an adequate accounting system to reliably measure and assess biological assets, leading them to choose not to provide detailed disclosures.

In addition, the lack of pressure from external parties, such as investors, auditors, or regulatory agencies, can lead companies to feel less compelled to make transparent disclosures. In the context of plantation companies in Indonesia, many companies still focus on compliance-based financial reporting rather than on informative reporting for decision-making. Thus, the limited influence of the intensity of biological assets on the disclosure of biological assets suggests that the presence of substantial biological assets does not necessarily compel companies to provide more extensive information to the public. This also illustrates that accountability and transparency principles in the plantation sector still need improvement.

2. Second Hypothesis

The T-statistic for the Growth variable was 12.755, with a p-value of 0.000, which was less than 5% (0.000 < 0.05). Considering that this significance level is below α = 5%, it can be concluded that the Growth variable contributes to the disclosure of biological assets in companies operating in the plantation sector in Indonesia. Therefore, the second hypothesis is accepted, indicating that growth affects the disclosure of biological assets.

These findings indicate that the higher a company's growth rate, the greater its tendency to provide more extensive disclosure of biological assets. Companies experiencing high growth often have an incentive to strengthen their reputations and build investors' trust. By delivering more transparent disclosure of biological assets, companies aim to demonstrate that they possess productive assets capable of supporting sustainable future growth. This disclosure also serves as a positive signal to stakeholders that the company is professionally managed and long-term oriented.

Companies with good performance and prospects tend to send positive signals to the market by increasing transparency in financial reporting. This aligns with the condition of rapidly growing plantation companies that require external capital support. By disclosing biological asset information more clearly, they hope to boost investor confidence and gain access to financing at a lower cost of capital. Therefore, the significant influence of growth on the disclosure of biological assets can be explained as a financial communication strategy carried out by the company to strengthen its competitive position in the market.

3. Third Hypothesis

The T-statistic for the leverage variable was -3.126, and its p-value was 0.002, which was less than 5% (0.002 < 0.05). With such a significance level, which was below α=5%, the leverage variable affects the disclosure of biological assets in plantation companies in Indonesia.

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Therefore, the third hypothesis is accepted, indicating that Leverage affects the disclosure of biological assets.

These findings indicate that a company's capital structure, particularly as reflected in its Leverage, plays an important role in determining the extent to which it discloses financial information, including biological assets. Companies with high Leverage have significant obligations to creditors, so they tend to provide more transparent reporting to maintain lenders' trust. This transparency serves as a form of corporate responsibility in demonstrating their ability to manage productive assets that can ensure the repayment of loan funds.

From the perspective of agency theory, the relationship between managers (agents) and creditors (principals) creates potential conflicts of interest. Creditors require accurate information to assess risk, while management may have incentives to withhold information that could generate negative perceptions of the company's performance. Therefore, a higher level of disclosure can be seen as a mechanism to reduce information asymmetry between the two parties. These results also reinforce previous research, which states that companies with high Leverage tend to be more cautious in financial reporting because they are under stricter external supervision.

In addition, companies with significant obligations also strive to maintain their reputation to remain trusted by financial institutions and investors. By disclosing biological assets openly, companies demonstrate that they have tangible assets that can serve as collateral for the financing they receive. Therefore, the influence of Leverage on the disclosure of biological assets suggests that external pressure from creditors can be an essential driver of improved financial reporting quality in the plantation sector.

4. Fourth Hypothesis

The T-statistic for the public ownership variable was -330.878, with a significance level of 0.000, which was less than the 5% threshold (0.000 < 0.05). Given the significance level was below $\alpha = 5\%$, it can be concluded that the public ownership variable affects the disclosure of biological assets in Indonesia. Therefore, the fourth hypothesis is valid, indicating that public ownership affects the disclosure of biological assets.

These results show that public ownership is one of the essential factors driving the level of information transparency in plantation company financial statements. Companies with a higher proportion of public ownership tend to face greater pressure from the public, retail investors, and regulatory bodies to be more transparent. This is because the public, as minority shareholders, does not have direct access to the company's internal information, making them highly dependent on published financial statements.

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The larger the number of public shareholders, the higher the demands for information disclosure. In this context, the disclosure of biological assets serves as a form of transparency intended to help investors assess the economic value of the company's productive assets. In addition, such disclosure can enhance the company's image in the public eye as an accountable, socially responsible entity. Companies with high public ownership typically strive to maintain their reputation in the capital market to remain attractive to investors, thus encouraging them to provide complete and accurate information. These results align with stakeholder theory, which holds that companies should consider the interests of various parties, including the community and public investors. By providing broader disclosure of biological assets, companies demonstrate their commitment to the principles of good corporate governance. In addition, this transparency also serves as a strategy to build long-term trust between the company and minority shareholders.

Overall, the results of this T-test indicate that internal company factors, such as growth, Leverage, and public ownership, play an essential role in driving the level of biological asset disclosure. In contrast, the intensity of biological assets has not shown a significant influence. This indicates that the decision to disclose financial information is not only influenced by the size of the assets held, but also by strategic and corporate governance factors related to transparency and public accountability. Therefore, strengthening reporting policies and external supervision is necessary to comprehensively improve the quality of biological asset disclosure in Indonesia's plantation sector.

CONCLUSION

Based on the evaluation of the information produced by this study, several conclusions can be drawn, as follows:

The level of biological asset intensity does not affect the disclosure of biological assets. Therefore, it is concluded that biological asset intensity is not among the factors that influence the disclosure of biological assets in plantation companies in Indonesia. A company's development has a significant impact on the disclosure of biological assets. Thus, it is concluded that company development is one of the factors influencing the disclosure of biological assets in plantation companies operating and growing in Indonesia. Leverage shows a significant influence on the disclosure of biological assets. With this statement, it is concluded that Leverage is a factor that affects the disclosure of biological assets in plantation companies in Indonesia. Public ownership has a significant effect on the disclosure of biological assets.

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Therefore, it is concluded that public ownership is one of the factors that influence the disclosure of biological assets in plantation companies in Indonesia.

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