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# University Size and Sustainability Disclosure in Indonesian Public Universities: Evidence from Sustainability Accounting and ESG Perspectives

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**Abstract**

This research investigates the effect of university size on sustainability disclosure among Indonesian public universities. Sustainability disclosure has become increasingly important, as higher education institutions are expected to demonstrate accountability regarding environmental, social, and governance (ESG) performance. Despite growing international attention to sustainability reporting, disclosure practices among Indonesian public universities remain limited. Drawing on Legitimacy Theory and Resource-Based View Theory, this research argues that larger universities possess greater organizational resources, broader stakeholder exposure, and stronger legitimacy pressures that encourage sustainability disclosure. Using panel data from 22 Indonesian public universities from 2020 to 2024, university size is measured by the total number of enrolled students, while sustainability disclosure is assessed using the Campus Sustainability Assessment Tool (CSAT). The findings are expected to demonstrate that university size positively influences sustainability disclosure. This study contributes to the sustainability accounting literature by extending the determinants of sustainability disclosure from corporate settings to higher education institutions and highlighting the importance of institutional capacity in promoting ESG accountability. The findings also provide practical implications for university leaders to strengthen sustainability reporting systems as institutional scale expands and for policymakers to develop national sustainability reporting guidelines specifically designed for higher education institutions.

## INTRODUCTION

The growing importance of sustainability has significantly transformed organizational accountability worldwide (Edmondson, 2023; Frostenson & Johnstone, 2023; Mäkelä & Cho, 2022; Schaltegger et al., 2022). Initially dominated by corporate entities, sustainability reporting has expanded into public and nonprofit sectors, including higher education institutions (Adams, 2013). Universities are increasingly expected not only to provide education and conduct research but also to demonstrate environmental stewardship, social responsibility, and governance accountability through sustainability disclosure (Ceulemans et al., 2015). Higher education institutions occupy a strategic position in promoting sustainable development because they educate future leaders, generate knowledge, and influence societal transformation. Consequently, sustainability disclosure serves as an important mechanism for communicating institutional commitments to stakeholders and enhancing organizational legitimacy (Filho et al., 2022).

Globally, sustainability reporting has become an established practice among universities in Europe, North America, and Australia (Abo-Khalil, 2024; Hamilton & Waters, 2022; Moggi, 2023; Soyombo et al., 2024; Sundarasen et al., 2024). However, disclosure practices remain uneven across developing countries. In Indonesia, only a limited number of universities publish sustainability

reports despite increasing participation in global sustainability rankings, such as UI GreenMetric, Times Higher Education Impact Rankings, and QS Sustainability Rankings. This situation raises concerns regarding institutional transparency, stakeholder accountability, and sustainability governance. Among organizational characteristics affecting sustainability disclosure, university size has emerged as a significant determinant. Larger universities generally possess more extensive financial resources, stronger administrative capacities, advanced information systems, and broader stakeholder networks. These advantages enable them to implement sustainability initiatives and communicate their sustainability performance more effectively (Gallego-Álvarez et al., 2011; De Iorio et al., 2022). Furthermore, larger universities experience greater public visibility and stakeholder scrutiny. According to Legitimacy Theory, organizations facing higher levels of public attention are more likely to disclose sustainability information to maintain social acceptance and institutional legitimacy (Suchman, 1995). Similarly, the Resource-Based View Theory suggests that organizations with superior resources are better positioned to develop sustainability capabilities and reporting systems (Barney, 1991).

Several studies have examined the determinants of sustainability disclosure in higher education institutions. Gallego-Álvarez et al. (2011) found that university size positively influences online sustainability disclosure among Spanish universities. Larrán Jorge et al. (2015) identified that larger universities in Spain are more likely to integrate sustainability initiatives into their strategic planning. Sánchez et al. (2013) demonstrated that U.S. public universities with larger student populations exhibit higher levels of social responsibility disclosure on their websites. De Iorio et al. (2022) revealed that university size is a significant determinant of Sustainable Development Goal (SDG) disclosure in the Italian university context. De La Poza et al. (2021) found that larger universities in Spain contribute more extensively to SDG reporting. Ramirez et al. (2019) showed that intellectual capital web reporting is positively associated with university size in Spain. Nicolò et al. (2020) confirmed that larger Italian universities disclose more intellectual capital information. Jorge et al. (2019) demonstrated that university size influences sustainability report quality among Spanish universities. However, these studies predominantly focus on European and North American contexts, with limited empirical evidence from developing countries, particularly in Southeast Asia. Furthermore, most prior research examines either corporate settings or specific aspects of university disclosure without comprehensively integrating sustainability accounting and environmental, social, and governance (ESG) perspectives within the Indonesian higher education context.

The novelty of this research lies in several aspects. First, this study is among the first to empirically examine the effect of university size on sustainability disclosure within the Indonesian public university context, addressing a significant gap in the literature on developing countries. Second, unlike previous studies that focus on specific aspects of disclosure, this research employs the comprehensive Campus Sustainability Assessment Tool (CSAT), which encompasses environmental, social, and governance dimensions, providing a more holistic assessment of sustainability disclosure. Third, this study integrates Legitimacy Theory and Resource-Based View Theory to explain the relationship between university size and sustainability disclosure, offering a robust theoretical framework that extends corporate sustainability literature to the higher education sector. Fourth, by using panel data from 22 Indonesian public universities over a five-year period (2020–2024), this research captures temporal dynamics and provides more reliable empirical evidence compared with cross-sectional studies.

Despite growing international evidence, empirical research examining university size and sustainability disclosure remains limited within the Indonesian higher education context. Therefore, this study seeks to investigate whether university size influences sustainability disclosure among Indonesian public universities. The benefits of this research are both theoretical and practical. Theoretically, this study contributes to the sustainability accounting literature by extending the determinants of sustainability disclosure to higher education institutions and providing empirical evidence from a developing country context. Practically, this research benefits university leaders by supporting the strengthening of sustainability reporting systems, policymakers by informing the development of national sustainability reporting guidelines for higher education, stakeholders by providing insights for evaluating university sustainability performance, and future researchers by serving as a foundation for further investigations.

## METHOD

### Research Design

This research adopted a quantitative explanatory approach using panel data. The study examined the relationship between variables by testing the proposed hypotheses through statistical analysis. The data consisted of sustainability reports, official university websites, and records from the Higher Education Database (Pangkalan Data Pendidikan Tinggi) for the 2020–2024 period.

### Population and Sample

The population consists of 33 public universities in Indonesia that disclose sustainability reports. The sample criteria in this study are determined using a purposive sampling method, namely the selection of analytical units based on certain considerations that are aligned with the research objectives. The sample is selected using purposive sampling based on: (1) availability of sustainability information; (2) availability of university profile data; (3) Availability of student enrollment data; and (4) availability of annual reports during 2020–2024. Based on the sampling results using the specified criteria and the observation period from 2020 to 2024, it is found that the total number of observations is 110 observations from 22 public universities in Indonesia.

### Variable Measurement

Dependent Variable

Sustainability Disclosure (SD)

Campus Sustainability Assessment Tools (CSATs) are appropriate, up-to-date, and stakeholder-engaged instruments for assessing campus sustainability. CSATs do not only cover infrastructure development but also the development of human resources within the campus in the form of research, teaching, and administration, enabling universities to systematically plan their campus sustainability strategies. Based on this foundation, although sustainability information disclosed by universities can be measured through content analysis of various sustainability reports, the Campus Sustainability Assessment Tools (CSATs) method developed by Dawodu et al. (2024) is considered the most appropriate and up-to-date for the purpose of this analysis. According to Bukh et al. (2005), the formulation of the index is as follows:

SD = Total disclosed items / Total CSAT items (43 items)

Independent Variable

University Size (SIZE)


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Research Gallego-Álvarez et al. (2011); Jorge et al. (2015); De La Poza et al. (2021); Sánchez et al. (2013) University size is represented by the number of regularly enrolled students during the 2020–2024 period.

**Regression Model**

The regression model in this study is as follows:

$$YSD = \alpha + \beta 1SIZE + \varepsilon$$

Where: SD = Sustainability Disclosure; SIZE = University Size; ε = Error Term

**Data Analysis Method**

The tests in this study were conducted using STATA 17 software and employed descriptive statistical analysis, classical assumption tests, panel data regression analysis, and hypothesis testing.

## RESULTS AND DISCUSSION

In this study, descriptive statistical testing includes the minimum value, maximum value, mean, and standard deviation of each variable, namely size (X1) and sustainability disclosure (Y). The results of the descriptive statistics are presented in Table 1 below:

**Table 1. Descriptive Statistic**

| Variable | N | Mean | Std. Dev | Min | Max |
|---|---|---|---|---|---|
| X1_SIZE | 110 | 10.54 | 0.67 | 7.88 | 13.42 |
| Y_SR | 110 | 0.85 | 0.12 | 0.42 | 0.98 |

Source: processed data, 2025

Based on the descriptive statistical results in Table 1, the university size variable is measured using the number of students that has been transformed into logarithmic form. The descriptive statistics show that the size variable has a mean value of 10.54, a standard deviation of 0.67, a minimum value of 7.88, and a maximum value of 13.42. The mean value indicates that the size of public universities (PTNs) in the research sample falls within the medium to large category, which is consistent with the general characteristics of Indonesian PTNs that have relatively large student populations. Furthermore, the range between the minimum and maximum values reflects a noticeable variation among PTNs. The minimum value of 7.88 indicates the existence of PTNs with relatively small student populations, while the maximum value of 13.42 indicates PTNs with very large student populations. However, the relatively small standard deviation suggests that the distribution of university size is not highly dispersed, and most PTNs are relatively homogeneous in terms of size. Theoretically, this variation provides a strong basis for examining its effect on sustainability disclosure.

The sustainability disclosure variable is measured using a disclosure index that represents the level of completeness, depth, and quality of sustainability information reported by public universities. Based on the descriptive statistics, the sustainability disclosure variable has a mean value of 0.85, a standard deviation of 0.12, a minimum value of 0.42, and a maximum value of 0.98. The mean value of 0.85 indicates that, in general, the level of disclosure among PTNs is high. This suggests that most PTNs have substantially reported sustainability information related to economic, social, and environmental aspects. This condition is consistent with the increasing public accountability demands, government regulations on performance and transparency in the education sector, and global pressures to adopt Environmental, Social, and Governance (ESG) principles. In the classical assumption tests, all tests in this study passed the required criteria. The results of the panel data regression estimation using the Fixed Effect Model (FEM) are presented in Table 2 below:

**Table 2. Regression Equation Model**

| Variable | Coefficients | Prob (p-value) |
|---|---|---|
| x1_SIZE | 0.04037 | 0.043 |
| Model | Fixed Effect | |

Source: processed data, 2025

The coefficient value of the size variable (X1) is 0.04037 with a probability value of 0.043. The coefficient indicates a positive direction, meaning that the larger the university size, the higher the level of sustainability disclosure, assuming other variables in the main model remain constant. Therefore, H1 is supported.

The results of hypothesis testing 1 indicate that size has a positive effect on sustainability disclosure in Indonesian public universities. This finding suggests that universities with a larger number of students tend to have a higher level of sustainability disclosure. This result is consistent with legitimacy theory, which states that organizations with higher levels of transparency toward society and stakeholders have a stronger need for legitimacy. Large universities tend to: (1) have dedicated sustainability offices; (2) possess stronger information systems; (3) maintain more sophisticated governance structures; (3) face stronger public accountability pressures. From the sustainability accounting perspective, larger universities require comprehensive systems to measure environmental costs, social impacts, and governance performance. From the ESG perspective: larger universities generate greater energy consumption, waste production, and carbon emissions, thereby increasing incentives to disclose environmental information (environmental); large student populations increase social responsibilities related to scholarships, student welfare, and community engagement (social); and larger universities require stronger internal controls, audit systems, and accountability mechanisms, leading to more extensive governance disclosure (governance). The results of this study are consistent with the findings of Jorge et al. (2019); De Iorio et al. (2022); Sanchez et al. (2021); De La Poza et al. (2021); Carroll & Shabana (2010); Rosati & Faria (2019); Richardson & Kachler (2017); Jorge et al. (2015); Sánchez et al. (2013); Gallego-Álvarez et al. (2011); Ramirez et al. (2019); Nicolo' et al. (2020) which show that size has a positive effect on sustainability reporting and SDGs disclosure in universities.

## CONCLUSION

University size represents a critical determinant of sustainability disclosure in public universities. The findings theoretically support Legitimacy Theory and Resource-Based View Theory. Practically, the findings suggest that university leaders should strengthen sustainability reporting systems as institutional scale expands. Policymakers may also consider developing national sustainability reporting guidelines specifically tailored to higher education institutions. Based on these findings, university leaders are encouraged to establish dedicated sustainability offices and enhance reporting mechanisms to support institutional sustainability practices. Future research is encouraged to examine additional determinants, such as governance structures and funding sources, expand the scope to private universities, and conduct cross-country comparative studies.

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