

Can Interaction of Performance Measurement, Remuneration, and Financial Management System Improve Performance of Indonesian State Universities?

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Abstract

Purpose: This study aims to examine whether the interaction between performance measurement, remuneration, and financial management systems can improve the performance of Indonesian state universities within the context of governance reforms and increased institutional autonomy.

Methodology: Data were obtained from secondary sources, including archival and observational data of state universities in Indonesia, with financial management statuses of legal entities, public service agencies, and government work units. The sample was selected using purposive sampling, focusing on state universities that published annual reports between 2017-2023 period. Before the Moderated Regression Analysis (MRA) testing, classical assumption tests were conducted to ensure the validity of the model.

Results: The findings indicate that performance measurement, remuneration systems, and financial management systems significantly affect state university performance.

Conclusions: This study provides empirical evidence that can be utilized for policymaking to enhance the performance of state universities. State universities must strengthen performance measurement systems that include key and additional performance indicators to ensure more comprehensive performance evaluations.

Limitations: This study has limitations because several variables were difficult to measure and required the use of categorical measurements.

Contributions: This study contributes to the public sector accountability and organizational change literature by proposing a multidimensional framework that integrates performance measurement, remuneration, and financial governance.

Keywords: *Governance, Performance Measurement System, Remuneration, State University Performance*

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1. Introduction

In recent decades, performance management and accountability in Higher Education Institutions (HEIs) have attracted growing attention, particularly in public universities, where public funding demands greater transparency and results-based outcomes (Fischer, 2018). In this context, Performance Measurement Systems (PMS) and financial management tools have emerged as essential instruments to ensure institutional accountability across academic, financial, and administrative dimensions (Grossi, Kallio, Sargiacomo, & Skoog, 2020). In Indonesia, Public Universities (PU) are undergoing significant governance reforms through autonomous status, such as Legal Entity State Universities and Public Service Agencies, which require more independent financial and managerial operations. While these

models aim to improve efficiency and accountability, they also raise new challenges regarding performance incentives, budgetary discipline, and the alignment between performance and remuneration.

Studies have revealed the complexity of implementing performance measurement systems and remuneration structures in Indonesian public universities ([Akbar, Pilcher, & Perrin, 2015](#)). On the one hand, these systems are intended to enhance academic productivity and institutional effectiveness. However, questions remain regarding whether current frameworks accurately reflect real performance and foster meaningful organizational transformation. This growing concern highlights the need to rethink how accountability is designed and practiced in higher-education governance. The primary motivation for this study is to explore the interplay between performance measurement, remuneration policies, and financial systems in shaping institutional accountability in Indonesian public university. While these areas are often treated as separate policy domains, their interdependence is rarely holistically examined, leading to fragmented implementation, and missed opportunities for integrated governance reform.

[Türk \(2008\)](#); [Maimela and Samuel \(2016\)](#) have shown that remuneration and performance management systems significantly influence academic staff motivation and team outcomes. However, such studies are often limited to private institutions and tend to overlook the financial governance dimension, which is critical in public-sector settings. Moreover, the literature on financial accountability in Indonesian HEIs has stressed the importance of managerial capacity, internal controls, and financial information systems to support institutional performance ([Nasution, Prasajo, Jannah, & Yumitro, 2020](#)). However, few studies have examined how these systems interact with incentive structures and performance indicators. This study aims to bridge this gap and provide a comprehensive understanding of how accountability is operationalized across interrelated systems.

[Franco-Santos and Otley \(2018\)](#) conducted a literature review showing that higher-education institutions have adopted performance management tools, such as the balanced scorecard and activity-based costing, as part of New Public Management (NPM) reforms to improve efficiency and organizational learning. Similarly, [Jones and Pendlebury \(2004\)](#) examined benchmarking practices in Italian universities and concluded that strategic management accounting tools support institutional transformation. In the Indonesian context, [Fatmawati et al. \(2024\)](#) evaluated the financial performance of public universities under public service agency status and found significant improvements in financial ratios, indicating better fiscal discipline and resource utilization. Meanwhile, [Mungai, Maina, and Kungu \(2021\)](#) emphasized that internal controls and integrated accounting systems play a crucial role in improving institutional accountability and public trust.

However, most prior research tends to examine these components performance, remuneration, and finance without considering how they function as interconnected levers of organizational change and accountability. There is a lack of integrative models that capture the dynamic interactions between these systems, especially in public universities. Most existing studies treat performance measurement, remuneration systems and financial governance as separate research streams. This fragmented approach limits our understanding of how these elements collectively contribute to institutional accountability. Particularly in Indonesian public universities, where institutional reform is ongoing, an integrated perspective is needed to inform coherent policies and management strategies.

Theoretically, this study contributes to the public sector accountability and organizational change literature by proposing a multidimensional framework that integrates performance measurement, remuneration, and financial governance. It extends the discourse on accountability beyond compliance toward a more strategic understanding of how governance systems can be harmonized to promote institutional effectiveness. Although agency theory has been widely applied to explain accountability mechanisms in the public sector, including higher education institutions [Michael C Jensen and Meckling \(2019\)](#), this approach tends to assume linear and homogeneous principal agent relationships. However, the operational environment of Indonesian state universities is marked by institutional diversity, varying levels of autonomy, and different degrees of external pressure, all of which affect the

design and effectiveness of performance measurement, remuneration, and financial systems ([Ferreira & Otley, 2009](#); [Modell, 2009](#)). Previous studies have rarely integrated contingency theory, which posits that the effectiveness of management systems depends on the degree of alignment between the system and organizational context ([Donaldson, 2001](#)).

Relying solely on agency theory may offer an overly normative view and fail to accommodate the contextual complexity and variation across higher education institutions, especially in developing countries such as Indonesia. This highlights a theoretical gap in the literature on higher education accountability: the lack of studies that adopt a combined theoretical lens of agency and contingency theory. Addressing this gap, the present study explores the interplay between performance measurement systems, remuneration mechanisms, and financial systems within a more context-sensitive and holistic theoretical framework.

2. Literature Review and Hypotheses Development

The transformation of higher education governance toward greater accountability is often driven by the logic of new managerialism, which emphasizes efficiency, transparency, and measurable outcomes ([Deem, 1998](#); [Ferlie, Musselin, & Andresani, 2008](#)). In the context of state universities, pressure to account for the use of public funds and academic performance has led to the implementation of performance measurement systems, output-based remuneration schemes, and stricter financial governance mechanisms ([Bleiklie, 2020](#)). Accountability is no longer viewed merely as administrative reporting but as a form of moral and professional responsibility toward the public, students, and stakeholders.

Agency theory [Michael C. Jensen and Meckling \(1976\)](#), metrics can reduce information asymmetry between university management (agents) and the government or the public (principals) ([Lane & Kivisto, 2008](#)). However, this normative approach is often challenged by institutional theory ([DiMaggio & Powell, 1983](#)), which argues that changes in accountability systems are often driven by institutional pressures such as ministries, national accreditation bodies, and international rankings rather than by efficiency goals. In addition, the open systems theory of organizations ([Scott and Davis \(2015\)](#)) provides insight into how universities respond to external pressures by adopting new management systems, including financial information systems, performance-based remuneration schemes, and indicator-based monitoring and evaluation frameworks. In this context, universities are no longer seen merely as academic institutions but as complex organizations managed similarly to modern public sector entities.

The performance of public universities has increasingly become a subject of global academic scrutiny, particularly in the context of growing demands for accountability, transparency, and measurable outcomes ([Hazelkorn, 2015](#)). Performance in higher education is commonly assessed across multiple dimensions, including research productivity, teaching quality, graduate employability, internationalization, innovation, and social impact ([Leisyte & Westerheijden, 2014](#)). These metrics are not only used for institutional self-evaluation but also form the basis for public funding allocation and international rankings. In countries such as Indonesia, performance measurement systems have been influenced by global benchmarking tools, such as the Quacquarelli Symonds (QS) World University Rankings and national accreditation standards ([Peters, 2019](#)). However, relying solely on quantitative outputs, such as publication counts or citation indices, can obscure more substantive dimensions of performance, including the institution's contribution to regional development, knowledge transfer, and inclusivity ([Etzkowitz & Leydesdorff, 2000](#)).

Furthermore, several studies have emphasized the relevance of governance structures and intellectual capital in driving university performance. For example, [Riana and Hadiwidjaja \(2024\)](#) found that Good University Governance (GUG), including transparency, accountability, and stakeholder participation, significantly affects performance outcomes in Indonesian state universities. Similarly, the integration of intellectual capital, comprising human, structural, and relational capital, has been shown to enhance institutional competitiveness and innovation. Overall, public university performance should be

understood as a multidimensional construct that encompasses academic and research excellence, institutional governance, social responsiveness, and long-term strategic impact.

2.1 Does the Performance Measurement System Have a Positive Effect on State Universities' Performance?

Performance measurement is a cornerstone of modern accountability. In higher education, it includes not only academic outputs such as graduate numbers and publications but also broader outcomes such as graduate employability, industry engagement, and societal impact ([Hazelkorn, 2015](#)). In Indonesia, both internal and external quality assurance systems require universities to document and evaluate their performance regularly. [Taylor and Baines \(2012\)](#) showed that Key Performance Indicators (KPIs) can enhance managerial awareness in strategic decision-making, although they often encounter resistance from academics. Leading universities in Asia have implemented tools such as balanced scorecards and performance dashboards to monitor research productivity, international collaboration, and teaching quality.

However, [Speklé and Verbeeten \(2014\)](#) showed that the effectiveness of performance measurement systems in public sector organizations largely depends on the level of contractibility and how managers use the system. The use of performance measurement systems for incentive purposes negatively affects organizational performance, although this effect is mitigated when contractibility is high. In contrast, the exploratory use of performance measurement systems tends to enhance organizational performance regardless of contractibility. Thus, achieving a fit between the characteristics of organizational activities and the use of performance measurement systems is a key factor in improving public sector performance.

H₁: The performance measurement system positively affects the performance of state universities

2.2 Does the Remuneration System Have a Positive Effect on State University Performance?

Remuneration systems in universities have undergone significant changes over the past few decades, particularly with the adoption of good governance principles in the public sector ([Guthrie & Neumann, 2007](#)). [Bhayani \(2015\)](#); [Nagy and Robb \(2008\)](#) found that universities increasingly adopt corporate-style human resource practices, including performance-based pay, to attract and retain academic talent. In Indonesia, the implementation of performance-based allowances for civil servants (including university lecturers) reflects a shift toward an output-oriented performance evaluation.

However, the application of performance-based remuneration in academia raises challenges. [Chen, Le, and Florence \(2021\)](#) found that well-designed incentive schemes can increase research productivity and publication output in Chinese universities. To enable researchers to produce consistently quality work, incentive systems must be designed to support their inner motivation, not just to provide targets or rewards ([Masinde & Coetzee, 2023](#)). In addition, the quantity and quality of a researcher's scientific publications are influenced by funding, career age, teamwork, institutional affiliation, and funding program design. Thus, cultural context and institutional structures play critical roles in determining the success of remuneration systems.

Beyond individual aspects, remuneration should be aligned with organizational performance. According to an Organisation for Economic Co-operation and Development (OECD) report, universities that successfully link incentives strategic institutional goals to perform better in terms of internationalization, research productivity, and education relevance. Therefore, designing an effective remuneration system requires balancing organizational objectives and individual rewards. Empirical evidence from two Indonesian universities confirms that remuneration positively and significantly affects employee performance, both directly and indirectly, through mediating variables. Remuneration enhances job satisfaction, which in turn improves lecturer performance, with job satisfaction significantly mediating the relationship between remuneration and performance at Universitas Padjajaran.

Meanwhile, findings from Universitas Negeri Semarang indicate that remuneration positively influences both motivation and job satisfaction, which subsequently impacts employee performance. Although motivation does not directly affect performance, it serves as a meaningful mediator between remuneration and employee performance. These findings underscore the importance of job satisfaction and motivation as key mediators that strengthen the impact of remuneration on performance within higher education institutions.

H₂: The remuneration system positively affects the performance of state universities

2.3 Does the Financial Management System Strengthen the Influence of the Performance Measurement System on the Performance of State Universities?

Financial systems in higher education refer to the structures, processes, and technologies that support the planning, execution, monitoring, and reporting of financial activities in universities. These systems play a critical role in ensuring resource efficiency, transparency, and alignment with institutional goals, especially in the context of public accountability and funding diversification. In Indonesian state universities, the shift toward autonomous governance models, such as Public Service Agencies and Legal Entity Universitas, has increased the complexity and importance of integrated financial systems.

Performance Measurement Systems (PMS) play a critical role in guiding public universities to achieve strategic objectives, improve operational efficiency, and demonstrate accountability to stakeholders. These systems enable higher education institutions to track key performance indicators, identify performance gaps and implement continuous improvements. However, the effectiveness of PMS in enhancing institutional performance does not operate in isolation. It requires support from other governance mechanisms, particularly the financial management system. A robust Financial Management System (FMS) provides the structural and procedural foundation necessary to ensure that the outputs of PMS are translated into actionable and financially supported initiatives. The FMS serves not only as a control mechanism but also as a strategic enabler that ensures that resources are allocated based on performance outcomes. Thus, FMS reinforces the capacity of PMS to effectively influence institutional performance.

Moreover, the alignment between PMS and FMS enables universities to respond to performance demands more strategically and adaptively. As emphasized by [Sanger \(2008\)](#), the integration of performance measurement with financial decision-making processes is a key success factor in improving outcomes across public sector institutions, including higher education. When financial planning and budgeting are informed by performance data, universities are better equipped to prioritize investments, allocate resources, and achieve their strategic goals.

Empirical findings support the notion that financial governance plays a moderating or mediating role in the relationship between performance measurement and organizational effectiveness. In particular, [Almagtome, Shaker, Al-Fatlawi, and Bekheet \(2019\)](#) found that financial accountability and integrated budgeting processes significantly strengthen the link between PMS and institutional outcomes in public universities. Based on this theoretical and empirical foundation, the following hypothesis is proposed.

H₃: The financial management system strengthens the influence of the performance measurement system on the performance of state universities

2.4 Does the financial management system strengthen the influence of remuneration on the performance of state universities?

Remuneration systems in public higher-education institutions are widely recognized as strategic tools for enhancing institutional performance. Adequate and fair remuneration is believed to motivate academic staff, improve job satisfaction, and ultimately contribute to attaining institutional goals. In Indonesian public universities, remuneration schemes have increasingly adopted performance-based principles, linking compensation to measurable outcomes such as teaching loads, research productivity, and community engagement.

However, empirical studies suggest that remuneration's effectiveness in improving university performance is not solely determined by the incentive structure itself. Rather, it depends on the broader

financial governance environment in which the remuneration is embedded. For instance, [Riana and Hadiwidjaja \(2024\)](#) emphasize that without an integrated and accountable financial management system, performance-based remuneration may suffer from inconsistencies, a lack of transparency, and diminished trust among academic staff. In such cases, even well-designed remuneration packages may fail to deliver their intended motivational and performance results.

A robust financial management system, characterized by transparency, accountability, efficiency, and alignment with institutional strategy, can serve as a catalyst to enhance remuneration effectiveness. It does so by ensuring that compensation mechanisms are administered fairly, performance is measured consistently, and budget allocations are aligned with strategic objectives ([Ardiyanti, Hadiwijaya, Murniadi, & Sutarman, 2025](#)). Additionally, sound financial management can improve institutional responsiveness to stakeholder expectations and increase the legitimacy of remuneration-related decisions, thereby fostering a performance-driven culture within the organization.

Therefore, it is plausible to hypothesize that the financial management system moderates the relationship between remuneration and performance. In other words, when financial governance functions well, the positive impact of remuneration on performance is amplified. Conversely, weak financial systems may dampen or obscure the benefits of even the most well-intentioned, remuneration policies. Based on this theoretical and empirical foundation, the following hypothesis is proposed.

H₄: The financial management system strengthens the influence of remuneration on the performance of state universities

3. Methodology

3.1 Research Design

This study adopts a quantitative approach with a cross-sectional design based on observational secondary data. Data were collected from the official websites of Indonesian public universities, the National Accreditation Board, and the Ministry of Education, Culture, Research, and Technology of the Republic of Indonesia for the period 2017–2023.

3.2 Population and Sample

The study population consisted of 125 state universities in Indonesia. A purposive sampling technique was used, resulting in a final sample of 76 universities that met the following criteria:

1. Universities are classified as legal entities, public service agencies, or working units.
2. Universities that published complete information on institutional performance, remuneration, performance indicators, and financial management systems during 2017–2023.

3.3 Research Model

The analysis employs a Moderated Regression Analysis model, with the following equation:

$$Y_1 = a + b_1X_1 + b_2X_2 + b_3X_3 + b_4(X_1 * X_3) + b_5(X_2 * X_3) + e \quad (1)$$

Where:

Y_1 = University performance
 X_1 = Performance measurement system
 X_2 = Remuneration system
 X_3 = Financial management system
 a = Constanta
 $b_1...b_5$ = Regression coefficients
 e = Error term

This model allows for the examination of both direct and interaction effects, particularly the moderating role of the financial management system.

3.4 Measurement of Variables

Table 1. Measurement of variables

No	Variables	Measurement Description	Scale
1	University performance (Y)	Institutional accreditation: Excellent/A = 3; B = 2; C = 1; Not accredited = 0	Ordinal
2	Performance measurement system (X_1)	Total number of main and additional performance indicators implemented	Nominal
3	Remuneration system (X_2)	Dummy: 1 = Remuneration system implemented; 0 = Not implemented	Nominal
4	Financial management system (X_3)	Category: Legal Entity = 3; public service agency = 2; Working Unit = 1	Ordinal

The table 1 show explains the measurement of variables in this study. University performance (Y) is measured based on institutional accreditation with an ordinal scale (A = 3, B = 2, C = 1, Not accredited = 0). Performance measurement system (X_1) is based on the total number of main and additional performance indicators implemented, using a nominal scale. Remuneration system (X_2) is a binary variable indicating whether the remuneration system is implemented (1 = implemented, 0 = not implemented), with a nominal scale. Finally, Financial management system (X_3) categorizes the type of system used (Legal Entity = 3, Public Service Agency = 2, Working Unit = 1), using an ordinal scale.

4. Results and Discussion

4.1 Descriptive Statistics

The descriptive statistics provide an overview of the minimum, maximum, mean, and standard deviation of the key variables in this study: university performance (Y), performance measurement system (X_1), remuneration (X_2), and financial management system (X_3). Data were collected from 532 observations representing state universities across Indonesia.

Table 2. Descriptive statistics

Variables	N	Minimum	Maximum	Mean	Standard Deviation
University performance (Y)	532	0	3	2,28	0,899
Performance measurement system (X_1)	532	0	116	13,47	16,327
Remuneration (X_2)	532	0	1	0,67	0,472
Financial management system (X_3)	532	1	3	1,77	0,734

Table 2 shows performance of state universities (Y) showed a mean score of 2.28 on a scale of 0–3, indicating a relatively high level of performance among the sampled institutions. The standard deviation of 0.899 suggests moderate variation in performance levels. The performance measurement system (X_1) exhibited a wide range from 0 to 116, with a mean of 13.47 and a relatively high standard deviation of 16.327. This indicates considerable diversity in the implementation of performance measurement systems across universities. For the remuneration variable (X_2), which was measured as a binary indicator (0 = not implemented remuneration, 1 = performance-based remuneration), the mean was 0.67. This suggests that approximately 67% of the universities in the sample adopted a performance-based remuneration system. The standard deviation of 0.472 reflects moderate variability. The financial management system (X_3) was measured on a scale of 1–3. The mean value of 1.77, with a standard deviation of 0.734, indicates that most universities are in the early to-intermediate stages of implementing more advanced financial systems. These descriptive results provide initial insights into the characteristics of the variables and serve as the basis for further inferential analysis to examine their relationships.

4.2 Classic Assumption Test

First, the normality assumption pertains to the distribution of the residuals in the regression model. Although the MRA is generally robust to minor deviations from normality, severe violations can distort the estimation of coefficients and significance tests, particularly when using interaction terms. The normality assumption test using the Kolmogorov-Smirnov test showed that the significance value of the asymptote (2-tailed) was 0.000, where the result was < 0.05 . This explains why the distributed data are not normal. However, this is not a problem because in this study, panel data and a large sample of 532 data points (> 30) were used. The assumption of the Central Limit Theorem (CLT) is used that if the research sample is large, the data will be distributed normally.

Second, multicollinearity is a crucial concern in moderated regression due to the inclusion of interaction terms, which are often highly correlated with their component variables. High multicollinearity inflates the standard errors, making it difficult to assess the individual effect of each predictor. This issue can be identified through tolerance values and the Variance Inflation Factor (VIF), with VIF values above 10 typically indicating problematic multicollinearity. The VIF values for variables X_1 , X_2 , and X_3 were 1.095, 1.265, and 1.358, respectively. Thus, it can be concluded that multicollinearity does not occur in this study, this can be seen in the Table 3.

Table 3. Multicollinearity test

Variables	Tolerance	VIF
Performance Measurement System (X_1)	0,913	1,095
Remuneration (X_2)	0,791	1,265
Financial Management System (X_3)	0,737	1,358

4.3. Regression Results

Table 4. Regression results (main and moderation models)

Variables	Model 1 (Main)	Model 2 (Moderation)	Conclusions
Constant	1.650***	0.026***	
Performance Measurement System (X_1)	0.010***	0.032***	H_1 supported
Remuneration (X_2)	0.742***	1.114***	H_2 supported
Financial Management System (X_3)	-	1.193***	
$X_1 * X_3$	-	- 0.011***	H_3 not supported
$X_2 * X_3$	-	- 0.546***	H_4 not supported
R^2	0,204	0.431	
Adjusted R^2	0,201	0.426	
F-statistics	67.978***	79.839***	

Note: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$

Table 4 shows the adjusted R^2 values for Models 1 and 2 show differences. The adjusted R^2 value of Model 1 is 0.201, indicating that 20.1% of the variation in the current performance of state universities can be explained by variations in the performance measurement system and remuneration. The remaining 79.9% is explained by other factors outside Model 1. However, the adjusted R^2 value of Model 2 (moderation model) increased to 0.426, indicating that 42.6% of the variation in the current performance of state universities can be explained by variations in the performance measurement system, remuneration, the interaction between the performance measurement system and the financial management system, and the interaction between remuneration and the financial management system. This finding indicates that the role of the financial management system is substantial in shaping the performance of state universities.

The F-test results for Model 1 show a value of 67.978 with a p-value of 0.000, while Model 2 shows a value of 79.839 with a p-value of 0.000. These results indicate that both regression models can be used to predict state university performance. Similarly, all variables showed significance values of 0.000 in both Model 1 and Model 2 (moderation model). The findings of this study indicate that H_1 and H_2 are supported, but H_3 and H_4 are not. Hypothesis 1 is supported, indicating that the performance measurement system has a positive effect on the performance of state universities. This result is consistent with the findings of [Thang, Thao, and Anh \(2025\)](#), who reported that non-financial performance measurement systems positively influence organizational performance.

Hypothesis 2 is also supported, indicating that the remuneration system positively affects state university performance. This finding is in line with the studies of [Pratolo, Sofyani, and Anwar \(2020\)](#), in their study conducted in higher education institutions, found that remuneration significantly influences the performance of accounting lecturers at polytechnics in Northwestern Nigeria.

In contrast, Hypothesis 3 is not supported because the coefficient is negative, indicating that the financial management system (Legal Entity State University, Public Service Agency, or Work Unit) does not strengthen the positive effect of the performance measurement system on state university performance. Based on contingency theory, contingent or situational factors include technology use, organizational systems, and environmental uncertainty. The negative sign found in this study provides evidence to the contrary, suggesting that the financial management system weakens the influence of the performance measurement system on the performance of state universities. The full financial autonomy granted to Legal Entity State Universities may lead these institutions to place less emphasis on implementing performance measurement systems. Motivation theory may help to explain this phenomenon. [Speklé and Verbeeten \(2014\)](#) found that using performance measurement systems for incentive purposes negatively affects organizational performance.

Similarly, Hypothesis 4 is not supported because the coefficient is negative, indicating that the financial management system (Legal Entity State University, Public Service Agency, or Work Unit) does not strengthen the positive effect of the remuneration system on state university performance. In Legal Entity State Universities, less attention is given to remuneration systems, while greater emphasis is placed on generating university revenues to ensure institutional sustainability.

5. Conclusions

5.1 Conclusion

This study reveals that the financial management systems in state universities may weaken the influence of performance measurement systems and remuneration on university performance. Legal Entity State Universities offer a much higher degree of financial autonomy than those operating under the Public Service Agency or Work Unit models, and this autonomy reduces the effectiveness of performance measurement and remuneration in influencing university outcomes. Furthermore, financial management systems in public universities may act as structural constraints, limiting the ability to translate performance into financial rewards. These results highlight the importance of aligning financial systems with performance management systems to avoid weakening the intended effects of performance-based management practices.

5.2 Research Limitations

This study faced several limitations, particularly in the measurement of variables that required categorical approaches, which may not fully capture the complexity of the phenomena under investigation. The research's scope was limited to Indonesian state universities, and the results may not be generalizable to other contexts without further investigation.

5.3 Suggestions and Directions for Future Research

Future research should explore alternative methods of measuring the relationship between financial management systems, performance measurement, and remuneration, especially in public sector contexts. Additionally, research could examine how external factors such as government policy, institutional culture, and local economic conditions affect the implementation and success of financial

management systems in state universities. Finally, cross-country comparative studies could offer deeper insights into the contextual factors that influence the effectiveness of these systems globally.

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Author Contributions

FGD contributed to the conceptualization of the study, research design, data analysis, manuscript drafting, and final approval of the manuscript. RRG contributed to data collection, literature review, data interpretation, manuscript revision, and the final approval of the manuscript. AK contributed to the research supervision, methodological guidance, critical revision of the manuscript, and final approval of the manuscript.

References

- Akbar, R., Pilcher, R. A., & Perrin, B. (2015). Implementing performance measurement systems: Indonesian local government under pressure. *Qualitative Research in Accounting & Management*, 12(1), 3-33. doi:<https://doi.org/10.1108/QRAM-03-2013-0013>
- Almagtome, A., Shaker, A., Al-Fatlawi, Q., & Bekheet, H. (2019). The integration between financial sustainability and accountability in higher education institutions: An exploratory case study. *Integration*, 8(2), 202-221.
- Ardiyanti, A., Hadiwijaya, D., Murniadi, M., & Sutarman, S. (2025). Financial management in strengthening educational governance at muhammadiyah university of Tangerang. *Edukasi Islami: Jurnal Pendidikan Islam*, 14(001), 663-678. doi:<https://doi.org/10.30868/ei.v14i001.9264>
- Bhayani, A. (2015). Building entrepreneurial universities in a specific culture barriers and opportunities. *International Journal of Nonprofit and Voluntary Sector Marketing*, 20(4), 312-330. doi:<https://doi.org/10.1002/nvsm.1533>
- Bleiklie, I. (2020). New public management or neoliberalism, higher education *The international encyclopedia of higher education systems and institutions* (pp. 2097-2102): Springer.
- Chen, J.-S., Le, T.-T.-Y., & Florence, D. (2021). Usability and responsiveness of artificial intelligence chatbot on online customer experience in e-retailing. *International Journal of Retail & Distribution Management*, 49(11), 1512-1531.
- Deem, R. (1998). 'New managerialism' and higher education: The management of performances and cultures in universities in the United Kingdom. *International studies in sociology of education*, 8(1), 47-70. doi:<https://doi.org/10.1080/0962021980020014>
- DiMaggio, P. J., & Powell, W. W. (1983). The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. *American sociological review*, 48(2), 147-160.
- Donaldson, L. (2001). *The contingency theory of organizations*: Sage.
- Etzkowitz, H., & Leydesdorff, L. (2000). The dynamics of innovation: from National Systems and "Mode 2" to a Triple Helix of university-industry-government relations. *Research policy*, 29(2), 109-123. doi:[https://doi.org/10.1016/S0048-7333\(99\)00055-4](https://doi.org/10.1016/S0048-7333(99)00055-4)
- Fatmawati, E., Suharto, B., Amrozi, S. R., Suhma, W. K., Yudiawan, A., Ilyasin, M., & Suhma, F. M. (2024). Change management towards good university governance in Indonesia: study at Islamic religious universities based on PUBLIC SERVICE AGENCY mandate. *Cogent social sciences*, 10(1), 2333081. doi:<https://doi.org/10.1080/23311886.2024.2333081>
- Ferlie, E., Musselin, C., & Andresani, G. (2008). The steering of higher education systems: A public management perspective. *Higher education*, 56(3), 325-348. doi:<https://doi.org/10.1007/s10734-008-9125-5>
- Ferreira, A., & Otley, D. (2009). The design and use of performance management systems: An extended framework for analysis. *Management Accounting Research*, 20(4), 263-282. doi:<https://doi.org/10.1016/j.mar.2009.07.003>

- Fischer, M. (2018). The need for performance management systems in public higher education. *Journal of Higher Education Theory and Practice*, 18(6), 79.
- Franco-Santos, M., & Otle, D. (2018). Reviewing and theorizing the unintended consequences of performance management systems. *International Journal of Management Reviews*, 20(3), 696-730. doi:<https://doi.org/10.3390/admsci10010014>
- Grossi, G., Kallio, K.-M., Sargiacomo, M., & Skoog, M. (2020). Accounting, performance management systems and accountability changes in knowledge-intensive public organizations: a literature review and research agenda. *Accounting, auditing & accountability journal*, 33(1), 256-280. doi:<https://doi.org/10.1108/AAAJ-02-2019-3869>
- Guthrie, J., & Neumann, R. (2007). Economic and non-financial performance indicators in universities: The establishment of a performance-driven system for Australian higher education. *Public Management Review*, 9(2), 231-252. doi:<https://doi.org/10.1080/14719030701340390>
- Hazelkorn, E. (2015). *Rankings and the reshaping of higher education: The battle for world-class excellence*: Springer.
- Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, 3(4), 305-360. doi:[https://doi.org/10.1016/0304-405X\(76\)90026-X](https://doi.org/10.1016/0304-405X(76)90026-X)
- Jensen, M. C., & Meckling, W. H. (2019). Theory of the firm: Managerial behavior, agency costs and ownership structure *Corporate governance* (pp. 77-132): Gower.
- Jones, R., & Pendlebury, M. (2004). A theory of the published accounts of local authorities. *Financial Accountability & Management*, 20(3), 305-325. doi:<https://doi.org/10.1111/j.0267-4424.2004.00386.x>
- Lane, J. E., & Kivisto, J. A. (2008). Interests, information, and incentives in higher education: Principal-agent theory and its potential applications to the study of higher education governance *Higher education* (pp. 141-179): Springer.
- Leisyte, L., & Westerheijden, D. F. (2014). Stakeholders and quality assurance in higher education *Drivers and barriers to achieving quality in higher education* (pp. 83-97): SensePublishers Rotterdam.
- Maimela, E. M., & Samuel, M. O. (2016). Perception of performance management system by academic staff in an open distance learning higher education environment. *SA Journal of Human Resource Management*, 14(1), 1-11. doi:<https://hdl.handle.net/10520/EJC197852>
- Masinde, M., & Coetzee, J. (2023). Modelling research productivity of university researchers using research incentives to crowd-in motivation. *International Journal of Productivity and Performance Management*, 72(5), 1509-1530. doi:<https://doi.org/10.1108/IJPPM-12-2020-0669>
- Modell, S. (2009). Institutional research on performance measurement and management in the public sector accounting literature: a review and assessment. *Financial Accountability & Management*, 25(3), 277-303. doi:<https://doi.org/10.1111/j.1468-0408.2009.00477.x>
- Mungai, D. K., Maina, M., & Kungu, J. N. (2021). Effect of internal control systems on financial performance of public universities in Kenya. *Research Journal of Finance and Accounting*, 12(16), 80-94.
- Nagy, J., & Robb, A. (2008). Can universities be good corporate citizens? *Critical Perspectives on Accounting*, 19(8), 1414-1430. doi:<https://doi.org/10.1016/j.cpa.2007.10.001>
- Nasution, V. I. A., Prasajo, E., Jannah, L. M., & Yumitro, G. (2020). Governance of autonomous higher education institution toward world-class university: A case study at the universitas Indonesia. *Governance*, 7(10), 2020.
- Peters, M. A. (2019). *Global university rankings: Metrics, performance, governance* (Vol. 51, pp. 5-13): Taylor & Francis.
- Pratolo, S., Sofyani, H., & Anwar, M. (2020). Performance-based budgeting implementation in higher education institutions: Determinants and impact on quality. *Cogent Business & Management*, 7(1), 1786315. doi:<https://doi.org/10.1080/23311975.2020.1786315>
- Riana, K. E., & Hadiwidjaja, R. D. (2024). Good university governance to universities performance: Systematic literature review. *Eduvest-Journal of Universal Studies*, 4(5), 4229-4243. doi:<https://doi.org/10.59188/eduvest.v4i5.1289>

- Sanger, M. B. (2008). From measurement to management: Breaking through the barriers to state and local performance. *Public Administration Review*, 68, S70-S85. doi:<https://doi.org/10.1111/j.1540-6210.2008.00980.x>
- Scott, W. R., & Davis, G. F. (2015). *Organizations and organizing: Rational, natural and open systems perspectives*: Routledge.
- Speklé, R. F., & Verbeeten, F. H. (2014). The use of performance measurement systems in the public sector: Effects on performance. *Management Accounting Research*, 25(2), 131-146. doi:<https://doi.org/10.1016/j.mar.2013.07.004>
- Taylor, J., & Baines, C. (2012). Performance management in UK universities: implementing the Balanced Scorecard. *Journal of Higher Education Policy and Management*, 34(2), 111-124. doi:<https://doi.org/10.1080/1360080X.2012.662737>
- Thang, L., Thao, N., & Anh, N. (2025). The role of proverbs in promoting cultural competence and language skills in english language teaching: A case study of Vietnamese Proverbs. *International Journal of Social Science and Human Research*, 08. doi:<https://doi.org/10.47191/ijsshr/v8-i4-52>
- Türk, K. (2008). Performance appraisal and the compensation of academic staff in the University of Tartu. *Baltic Journal of Management*, 3(1), 40-54. doi:<https://doi.org/10.1108/17465260810844257>