



MANAGERIAL ACCOUNTABILITY, EDUCATION FINANCING, AND COMPETITIVE ADVANTAGE OF PRIVATE ISLAMIC HIGHER EDUCATION IN INDONESIA

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ABSTRAK

Penelitian mengenai Perguruan Tinggi Keagamaan Islam Swasta (PTKIS) telah membahas akuntabilitas dan pembiayaan pendidikan dalam kaitannya dengan pengelolaan keuangan dan kinerja institusi, tetapi hubungannya dengan keunggulan kompetitif masih belum banyak dipahami. Hal ini penting karena daya saing institusi membutuhkan pengelolaan yang akuntabel dan pemanfaatan sumber daya secara strategis. Penelitian ini bertujuan untuk menganalisis hubungan akuntabilitas manajerial dan pembiayaan pendidikan dengan keunggulan kompetitif pada PTKIS di lingkungan Kopertais I Jakarta. Penelitian menggunakan survei eksplanatori kuantitatif yang melibatkan 30 institusi dan 300 responden melalui teknik *purposive sampling* dan *stratified random sampling*. Data dikumpulkan menggunakan kuesioner skala Likert lima poin dan dianalisis dengan *partial least squares structural equation modeling* (PLS-SEM) menggunakan SmartPLS. Hasil menunjukkan bahwa akuntabilitas manajerial memiliki hubungan positif dan signifikan secara statistik dengan keunggulan kompetitif ($\beta = 0,52$; $t = 4,05$; $p < 0,001$). Sebaliknya, pembiayaan pendidikan menunjukkan hubungan positif tetapi tidak signifikan secara statistik ($\beta = 0,18$; $t = 1,59$; $p = 0,122$). Model menjelaskan 44,8% variasi keunggulan kompetitif. Temuan ini menunjukkan bahwa akuntabilitas manajerial penting untuk dipertimbangkan dalam memperkuat daya saing institusi, sedangkan kontribusi langsung pembiayaan pendidikan masih perlu diteliti lebih lanjut. Institusi perlu memperkuat praktik akuntabilitas dan menyelaraskan pengelolaan keuangan dengan prioritas strategis untuk mendukung daya saing berkelanjutan.

Kata Kunci: *Akuntabilitas Manajerial, Keunggulan Bersaing, Pembiayaan Pendidikan, Perguruan Tinggi Islam Swasta, Tata Kelola Pendidikan Tinggi.*

ABSTRACT

Research on Private Islamic Higher Education Institutions (PHEI) has examined accountability and education financing in relation to financial management and institutional performance, but their relationships with competitive advantage remain insufficiently understood. This issue is important because institutional competitiveness requires accountable management and strategic resource utilization. This study aimed to examine the relationships of managerial accountability and education financing with competitive advantage among PIHEI within Kopertais I Jakarta. A quantitative explanatory survey was conducted involving 30 institutions and 300 respondents selected through purposive and stratified random sampling. Data were collected using five-point Likert-scale questionnaires and analyzed using partial least squares structural equation modeling (PLS-SEM) with SmartPLS. The results showed that managerial accountability had a positive and statistically significant relationship



with competitive advantage ($\beta = 0.52$, $t = 4.05$, $p < 0.001$). In contrast, education financing showed a positive but statistically insignificant relationship ($\beta = 0.18$, $t = 1.59$, $p = 0.122$). The model explained 44.8% of the variance in competitive advantage. These findings indicate that managerial accountability is an important consideration for strengthening institutional competitiveness, while the direct contribution of education financing requires further investigation. Institutions should strengthen accountability practices and align financial management with strategic priorities to support sustainable competitive positioning.

Keywords: *Competitive Advantage, Education Funding, Higher Education Governance, Managerial Accountability, Private Islamic Universities.*

INTRODUCTION

Private Islamic Higher Education Institutions (PIHEI) face challenges in maintaining institutional sustainability and developing competitive advantages amid increasing demands for educational quality, transparent governance, and efficient resource utilization (Nugraha et al., 2023; Pangarso et al., 2024). Competitive advantage is determined not only by the ability of higher education institutions to provide academic services but also by their capacity to build stakeholder trust, differentiate their services, and optimize available resources. In this context, managerial accountability is necessary to ensure that decision-making, budget allocation, program implementation, and performance evaluation are conducted transparently and responsibly. Meanwhile, education financing supports the implementation of the tridharma of higher education, human resource development, the provision of learning facilities, and institutional innovation. However, the availability of financial resources and the quality of governance represent distinct organizational dimensions that need to be examined to understand how PIHEI develop sustainable competitive advantages. The importance of integrating governance and resource management is consistent with research on good university governance and dynamic capabilities in higher education (Islami, 2025; Heaton et al., 2023).

These issues are particularly relevant for PIHEI, which must balance operational expenditures with institutional development investments while strengthening their financial sustainability. Yahya et al. (2025), through their analysis of governance-driven budgeting practices in PIHEI, examined how accountability considerations are incorporated into institutional budget management. Their findings provide a contextual basis for understanding the importance of aligning budget allocation with institutional priorities, including academic quality, research development, and institutional reputation. Furthermore, Heriyanto et al. (2026) addressed education financing management in relation to financial management accountability, highlighting the relevance of financial governance in institutional management. Nevertheless, these studies do not establish that all PIHEI experience identical financial constraints or that improved accountability and financing necessarily generate competitive advantages. Accordingly, the relationships among managerial accountability, education financing, and competitive advantage require empirical examination within the institutional context under investigation.

Conceptually, managerial accountability refers to an institution's responsibility to justify its decisions, resource utilization, and performance achievements to relevant stakeholders. In higher education, accountability needs to be understood in relation to governance arrangements, managerial responsibilities, and the mechanisms used to monitor institutional performance. Nourhayati and Fahyuni (2024) examined the role of leadership in improving managerial accountability, providing a basis for considering accountability as an



important component of organizational management. Similarly, Salemans and Budding (2024) discussed management accounting and control systems in higher education, emphasizing the relevance of managerial control mechanisms in institutional settings. From this perspective, managerial accountability may support clearer responsibilities, more transparent budget utilization, and more consistent implementation of strategic policies. However, whether these practices are associated with stronger competitive advantages among PIHEI remains an empirical question rather than an assumption.

Education financing, meanwhile, provides the resources required to implement academic programs, support the tridharma of higher education, develop human resources, and improve institutional facilities. Baidowi et al. (2025) examined educational financing in relation to lecturer performance in implementing the tridharma at private Islamic higher education institutions, demonstrating the relevance of financing as an area of institutional investigation. Nevertheless, lecturer performance and institutional competitive advantage represent different outcomes, so findings concerning the former cannot automatically establish a relationship with the latter. Patnaik et al. (2022), through a longitudinal case study of an Indian higher education institution, extended the resource-based perspective by considering the relationship between organizational resources and institutional context. Together, these perspectives provide a rationale for examining whether education financing is associated with competitive advantage and whether its relationship with competitiveness can be understood alongside managerial accountability. The adequacy of financial resources alone should not be assumed to guarantee superior institutional competitiveness without empirical evidence.

The relationship between managerial accountability, education financing, and competitive advantage can be explained primarily through Dynamic Capability Theory, as developed by Teece et al. (1997). Supporting the relevance of this theory in Indonesia, Elistia et al. (2024) found that dynamic capabilities partially mediated the relationship between knowledge management and sustainable competitive advantage in private higher education institutions. This theory emphasizes an organization's ability to integrate, build, and reconfigure internal and external competencies in response to changing environments to sustain competitive advantage. Teece (2007) further elaborated this perspective by identifying the organizational capacities to sense opportunities, seize them through strategic decisions, and reconfigure resources in response to environmental changes. In the context of private Islamic higher education institutions (PIHEI), education financing represents a strategic resource that supports academic programs and institutional development, while managerial accountability provides governance practices for monitoring resource utilization and aligning institutional decisions with strategic priorities. Supporting the relevance of this perspective in higher education, Heaton et al. (2023) examined dynamic capabilities and governance in relation to financial performance in the higher education sector. Accordingly, this study conceptualizes education financing as a resource and managerial accountability as a governance-related organizational practice that may facilitate the strategic utilization of resources. Their relationships with competitive advantage, however, must be established empirically rather than assumed.

Previous studies have examined governance, accountability, and financing in higher education, but their research questions and outcome variables differ from the focus of the present study. Islami (2025) reviewed good university governance in higher education institutions, whereas Salemans and Budding (2024) examined management accounting and control systems in higher education. Yahya et al. (2025) explored governance-driven

budgeting practices in private Islamic higher education institutions, while Baidowi et al. (2025) focused on educational financing and lecturer performance. These studies provide relevant foundations for understanding governance and financing, but they do not collectively establish the specific relationships between managerial accountability, education financing, and competitive advantage within the institutional context examined here. This study focuses on PIHEI within the coordination area of Kopertais I Jakarta, with a population of 62 institutions and a sample of 30 institutions. Consequently, its findings should be interpreted in relation to this research context rather than automatically generalized to all PIHEI in Indonesia.

To address this research gap, the present study examines the relationships of managerial accountability and education financing with the competitive advantage of PIHEI within a single empirical model using Partial Least Squares Structural Equation Modeling (PLS-SEM). Its contribution lies in examining these two organizational dimensions simultaneously in the context of private Islamic higher education, rather than merely applying a particular statistical technique. Theoretically, the study draws on the resource-based and dynamic capabilities perspectives to explain why financial resources and governance-related practices may be relevant to institutional competitiveness. Practically, the findings are expected to provide considerations for PIHEI administrators in strengthening managerial accountability and directing financial resources toward institutional development priorities. Accordingly, this study aims to analyze the relationship between managerial accountability and competitive advantage, examine the relationship between education financing and competitive advantage, and evaluate the extent to which these two variables explain variations in the competitive advantage of PIHEI within the Kopertais I Jakarta coordination area.

RESEARCH METHOD

This study employed a quantitative approach with an explanatory survey design to examine the relationships between managerial accountability, education financing, and competitive advantage in Private Islamic Higher Education Institutions (PIHEI). The study population comprised 62 PIHEI within the coordination area of Kopertais I Jakarta, representing universities, institutes, and colleges. A sample of 30 institutions was selected using purposive sampling and stratified random sampling, involving 300 respondents consisting of institutional leaders, deans or heads of study programs, financial managers, lecturers, and educational staff. Primary data were collected using a structured questionnaire with a five-point Likert scale, while secondary data from institutional annual reports, accreditation documents, and financial records were used to support the analysis. The questionnaire measured managerial accountability through transparency, efficiency, and participation; education financing through funding sources, allocation, and evaluation; and competitive advantage through cost, differentiation, and resource optimization.

Data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) with SmartPLS software. The measurement model was evaluated through outer loadings, average variance extracted (AVE), Cronbach's alpha, and composite reliability to assess indicator validity and construct reliability. The structural model was assessed using path coefficients, t-statistics, and p-values, with a significance level of 5% ($p < 0.05$). The coefficient of determination (r^2) was used to determine the extent to which managerial accountability and education financing explained variations in competitive advantage. The analysis focused on the direct relationships between the independent variables and competitive advantage, in accordance with the proposed research model.

RESULT AND DISCUSSION

Results

Respondent Characteristics

This study involved 300 respondents from 30 Private Islamic Higher Education Institutions (PIHEI) within the coordination area of Kopertais I Jakarta. The respondents represented five institutional roles: university management, deans or heads of study programs, financial managers, lecturers, and educational staff. Their distribution is presented in Table 1 to describe the composition of participants involved in assessing managerial accountability, education financing, and competitive advantage. The distribution also identifies the professional groups represented in the study.

Table 1. Characteristics of Research Respondents

Respondent Position	Frequency (n)	Percentage (%)
University management	10	3.33
Dean or head of study program	50	16.67
Financial manager	30	10.00
Lecturer	150	50.00
Educational staff	60	20.00
Total	300	100.00

Source: Primary research data, processed by the authors.

As shown in Table 1, lecturers constituted the largest respondent group, accounting for 150 participants (50.00%). Educational staff represented the second-largest group, with 60 respondents (20.00%), followed by deans or heads of study programs, with 50 respondents (16.67%). Financial managers accounted for 30 respondents (10.00%), while university management comprised 10 respondents (3.33%). These figures describe the distribution of respondents across institutional roles, with lecturers representing half of the total sample.

Measurement Model Evaluation

The measurement model was evaluated before examining the relationships between the research constructs. The evaluation included outer loadings, Cronbach's alpha, composite reliability, and average variance extracted (AVE), as reported in the original research results. Table 2 summarizes the available measurement statistics for managerial accountability, education financing, and competitive advantage. The complete indicator-level results are required to establish whether every indicator meets the specified measurement criteria.

Table 2. Summary of Construct Validity and Reliability

Construct	Indicator	Outer Loading	Cronbach's Alpha	Composite Reliability	AVE
Managerial Accountability	Transparency	0.82	0.82	0.87	0.63
	Efficiency	0.83			
	Participation	0.78			
Education Financing	Funding Sources	0.76	0.78	0.84	0.58

	Fund Allocation	0.80			
	Evaluation	0.75			
	Cost	0.84			
Competitive Advantage	Differentiation	0.86	0.85	0.89	0.66
	Resource Optimization	0.79			

Source: Primary research data, processed by the authors.

As presented in Table 2, the highest outer loading values ranged from 0.80 to 0.86 across the three constructs. Cronbach's alpha values ranged from 0.78 to 0.85, while composite reliability values ranged from 0.84 to 0.89. The AVE values ranged from 0.58 to 0.66, exceeding the commonly applied minimum criterion of 0.50 for convergent validity. These construct-level statistics indicate satisfactory internal consistency and convergent validity based on the reported values. However, the available results do not include the loading factor of every individual indicator or the results of discriminant validity testing, so the overall adequacy of the measurement model cannot yet be fully established.

To complete the measurement model evaluation, the authors need to provide the outer loading of each indicator and identify any indicators that fail to meet the specified criteria. Any decision to retain or remove an indicator should be justified using its loading value, theoretical relevance, and the implications for construct validity. Discriminant validity should also be assessed using an appropriate PLS-SEM procedure, such as the heterotrait–monotrait ratio (HTMT), with the results reported for the relevant construct pairs. Because these additional statistics were not available in the original results, no conclusion regarding discriminant validity can be established from the current data. The final measurement model should therefore be confirmed after the missing indicator-level and discriminant validity results have been incorporated.

Structural Model Evaluation

Following the measurement model assessment, the structural model was evaluated to determine the extent to which managerial accountability and education financing explained variations in competitive advantage. The coefficient of determination (r^2) was used to assess the explanatory power of the model. The reported (r^2) value was 0.448, indicating that the two independent variables jointly explained 44.8% of the variation in competitive advantage. The corresponding result is presented in Table 3.

Table 3. Coefficient of Determination for Competitive Advantage

Dependent Construct	r^2	Explained Variation (%)	Unexplained Variation (%)
Competitive advantage	0.448	44.8	55.2

Source: Primary research data, processed by the authors.

As shown in Table 3, the model's (r^2) value of 0.448 indicates that managerial accountability and education financing jointly explained 44.8% of the variation in competitive advantage among the institutions studied. The remaining 55.2% represents variation not explained by the two predictors included in the model. This unexplained proportion may be associated with other factors outside the scope of the present model, although their individual contributions were not examined in this analysis. The (r^2) value describes the explanatory

power of the model and does not, by itself, establish the statistical significance of either independent variable. An adjusted (r^2) value may also be reported if it is available in the original SmartPLS output.

Hypothesis Testing

Hypothesis testing was conducted to examine the direct relationships of managerial accountability and education financing with competitive advantage. The assessment was based on the path coefficient, t-statistic, and p-value, using a 5% significance level. The path coefficient was used to identify the direction and magnitude of each relationship, while the t-statistic and p-value were used to determine its statistical significance. A relationship was considered statistically significant when its p-value was below 0.05. Based on these criteria, each hypothesis was evaluated to determine whether the proposed relationship was supported by the empirical findings. The results for both hypotheses are presented in Table 4.

Table 4. Results of Direct Relationship and Hypothesis Testing

Hypothesis	Relationship	Path Coefficient (β)	t-Statistic	p-Value	Direction	Decision
H1	Managerial accountability → Competitive advantage	0.52	4.05	< 0.001	Positive	Supported
H2	Education financing → Competitive advantage	0.18	1.59	0.122	Positive	Not supported

Source: Primary research data, processed by the authors. The reported p-value of 0.000 for H1 is presented as $p < 0.001$.

As shown in Table 4, managerial accountability had a positive path coefficient of 0.52, with a t-statistic of 4.05 and a p-value below 0.001. This result indicates a positive and statistically significant relationship between managerial accountability and competitive advantage, supporting H1. Education financing had a positive path coefficient of 0.18, with a t-statistic of 1.59 and a p-value of 0.122. Because this p-value exceeded the 0.05 significance threshold, the relationship was not statistically significant, and H2 was not supported. The estimated coefficient for managerial accountability was numerically larger than that for education financing, but this comparison alone does not establish that the difference between the two coefficients is statistically significant.

The results indicate different statistical patterns in the direct relationships between the two independent variables and competitive advantage. Managerial accountability demonstrated a positive and statistically significant relationship, whereas education financing showed a positive but statistically nonsignificant relationship. Together, the two variables explained 44.8% of the variation in competitive advantage, according to the reported coefficient of determination. These findings directly address the research objectives concerning the relationships between the two predictors and competitive advantage and the explanatory capacity of the proposed model.

The results are limited to the direct relationships specified in the research model. Although the findings identify a statistically significant relationship between managerial accountability and competitive advantage, they do not establish that managerial accountability



mediates the relationship between education financing and competitive advantage. No indirect-effect or mediation test was reported in the available results. Accordingly, claims about mediation or a mechanism through which accountability transforms financing into competitive advantage should not be made unless additional analyses are conducted. Further interpretation, comparison with previous studies, and discussion of theoretical and practical implications should be presented in the Discussion section.

Discussion

The objective of this study was to examine the relationships of managerial accountability and education financing with competitive advantage among private Islamic higher education institutions (PIHEI) within Kopertais I Jakarta. The findings indicate that managerial accountability has a positive and statistically significant relationship with competitive advantage ($\beta = 0.52$, $t = 4.05$, $p < 0.001$), whereas education financing has a positive but statistically insignificant relationship ($\beta = 0.18$, $t = 1.59$, $p = 0.122$). These results suggest that the two variables do not demonstrate the same level of statistical support in explaining competitive advantage within the proposed model. The model's R^2 value of 0.448 further indicates that managerial accountability and education financing jointly explain 44.8% of the variance in competitive advantage, while the remaining 55.2% is associated with factors outside the model.

The significant relationship between managerial accountability and competitive advantage can be interpreted through the Resource-Based View (RBV), which emphasizes the strategic value of organizational resources and capabilities in sustaining competitive advantage (Barney, 1991). In the context of PIHEI, accountability practices may help institutions coordinate resources, clarify managerial responsibilities, and support more transparent decision-making. Sofyani et al. (2023) found that performance measurement systems play an important mediating role in the relationship between IT governance and internal accountability in Indonesian higher education institutions. Similarly, Sulila (2022) demonstrated that accountability, transparency, and other good governance principles were positively associated with governance performance at an Indonesian state university. Taken together, these findings suggest that managerial accountability may support institutional governance and competitive positioning, although the present study establishes a statistical relationship rather than a causal mechanism.

The positive and significant coefficient for managerial accountability also indicates that higher accountability scores are associated with higher competitive advantage scores in the institutions examined. From an RBV perspective, accountability may contribute to the effective coordination and use of institutional resources, which can help institutions strengthen their strategic position. However, accountability should not be interpreted as a competitive resource in isolation, because its strategic value may depend on how it is embedded in managerial practices and organizational processes. Research in Indonesia further highlights the relevance of governance arrangements and managerial capabilities to higher education performance. Rosser (2023) examined institution-level governance in Indonesian higher education and identified governance challenges affecting institutional quality. Munawar et al. (2025) found that management capability was positively associated with private university performance, both directly and through information systems strategy and digital transformation. Although these studies do not directly establish a relationship with competitive advantage, they provide complementary evidence that governance and

managerial decision-making are relevant to understanding organizational performance in higher education.

In contrast, education financing showed a positive but statistically insignificant relationship with competitive advantage ($\beta = 0.18$, $p = 0.122$). This finding means that the proposed model does not provide sufficient statistical evidence to conclude that education financing is directly associated with competitive advantage in the sampled institutions at the 5% significance level. The result does not necessarily mean that financing is unimportant; rather, the availability or level of financing alone may not be sufficient to explain differences in competitive advantage. Educational financing is an important institutional input that supports academic activities, resource development, and institutional performance. Pratolo et al. (2022) examined financial performance in Indonesian private higher education institutions, highlighting the importance of institutional financial management. Lestari et al. (2026) also examined financial sustainability strategies in Indonesian universities, providing a complementary perspective on the role of financial resource management in institutional sustainability. These findings reinforce the need to distinguish financing as an institutional input from competitive advantage as a broader strategic outcome.

The Dynamic Capability Theory provides a further perspective for interpreting why education financing did not show a statistically significant direct relationship with competitive advantage. This theory emphasizes an organization's capacity to adapt, integrate, and reconfigure resources in response to changing conditions (Teece, 2007). From this perspective, financial resources may contribute to institutional competitiveness when they are allocated and mobilized through appropriate strategic decisions, rather than through their availability alone. Research in Indonesia further highlights the importance of resource allocation and financial management in higher education. Handayani et al. (2024) found that budget limitations constrain the implementation and flexibility of performance-based budgeting in Indonesian private higher education institutions. Similarly, Susilowati et al. (2025) reported that budget literacy and participation support transparency, efficient resource allocation, and university performance. These findings suggest that the strategic management of financial resources is relevant to institutional outcomes, although further research is needed to determine whether resource allocation practices or dynamic capabilities explain the relationship between education financing and competitive advantage in PIHEI.

Overall, this study contributes empirical evidence on the separate relationships of managerial accountability and education financing with competitive advantage among PIHEI within Kopertais I Jakarta. The findings provide stronger statistical support for managerial accountability than for the direct relationship between education financing and competitive advantage, while the model explains 44.8% of the variance in the outcome. The study extends the discussion of accountability and financing beyond financial management or lecturer performance by examining their direct relationships with competitive advantage in the specified institutional context. Nevertheless, the results should not be generalized automatically to all PIHEI in Indonesia, because the sample was drawn from institutions within Kopertais I Jakarta. Future studies could examine additional organizational and strategic factors and investigate whether the way institutions allocate and reconfigure financial resources helps explain differences in competitive advantage.

CONCLUSION

This study concludes that managerial accountability has a positive and statistically significant relationship with competitive advantage among private Islamic higher education

institutions (PIHEI) within Kopertais I Jakarta, whereas education financing does not demonstrate a statistically significant direct relationship with competitive advantage. These findings suggest that strengthening accountability practices, including transparency, responsibility, and effective managerial oversight, may be an important consideration for institutions seeking to improve their competitive position. However, the absence of a statistically significant relationship between education financing and competitive advantage does not imply that financial resources are unimportant; rather, their strategic contribution may depend on how they are managed and utilized. The findings therefore highlight the need for institutional leaders to integrate financial management with accountable decision-making and strategic resource utilization. In this way, the study provides empirical insights that can inform institutional management policies and support efforts to strengthen the competitiveness of private Islamic higher education institutions.

The practical implications of this study include encouraging institutional leaders and policymakers to strengthen accountability mechanisms, improve the transparency of resource management, and evaluate whether financial allocations support institutional priorities and competitive strategies. The findings may also inform the development of management policies that connect financial planning with measurable institutional objectives rather than focusing solely on the availability of funding. Nevertheless, because the study was conducted among PIHEI within Kopertais I Jakarta, its findings should be applied to other institutional contexts with appropriate consideration of their organizational characteristics. Future research could expand the geographical scope and examine additional factors, such as institutional leadership, organizational innovation, digital transformation, and stakeholder trust, that may help explain differences in competitive advantage. Further studies could also investigate whether resource allocation practices and dynamic capabilities help explain the relationship between education financing and competitive advantage, using appropriate research designs and statistical tests.

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