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THE IMPACT OF TANGIBLE AND INTANGIBLE ASSETS ON FINANCIAL PERFORMANCE: EVIDENCE FROM PRIVATE HIGHER EDUCATION INSTITUTIONS IN INDONESIA

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Abstract:

This study aims to examine the influence of tangible and intangible assets on the financial performance of private higher education in higher education service institutions in Region X, Indonesia. This study uses a quantitative approach with survey data collected from 124 respondents representing various private higher education. Data analysis was carried out using the Smart PLS statistical tool to test the influence of tangible and intangible assets on financial performance. The results of the study show that these two types of assets significantly affect the financial performance of private higher education. These findings underscore the importance of effectively managing tangible and intangible assets to improve financial results. This research provides practical implications for higher education managers and policymakers by emphasizing the strategic role of assets in maintaining financial health and competitiveness.

Keywords:

Tangible Assets, Intangible Assets, Financial Performance, Smart-PLS

Introduction

Financial performance plays a crucial role in the management of private higher education as it reflects the institution's ability to sustain, grow, and provide quality educational services. Financial performance refers to an organization's financial condition in determining its long-term success and ensuring that resources are utilized effectively and efficiently (Samsiah et al., 2024). In this context, resources in the form of tangible assets, such as buildings, equipment, and campus facilities, are crucial elements that support daily operations and institutional sustainability. On the other hand, intangible assets, such as reputation, high-quality human resources, and the application of information technology, contribute to enhancing competitiveness and driving innovation within universities. An effective combination of managing tangible and intangible assets can significantly impact the financial performance of private higher education, particularly in addressing the challenges of an increasingly dynamic and competitive environment.

Over the past five years, the number of private higher education in Indonesia has shown a declining trend nationwide, reaching a decrease of 5.31% in 2023 (PDDikti 2023). In the same year, the number of students enrolled in private higher education also declined by 4.58% compared to the previous year. This decline highlights significant challenges in the operational sustainability of private higher education in Indonesia. Several factors contribute to this phenomenon, including the quality of education, management professionalism, and financial constraints, which remain major challenges for private universities (Sudarman, 2019). Low educational quality can lead to a decrease in student enrollment, which, in turn, affects financial resources and the overall quality of education, particularly in private universities (Ayu et al., 2020). The operational sustainability of private higher education heavily depends on the number of enrolled and active students, making student enrollment declines a potential threat to the existence of these institutions (Yanita, 2019; Syamsul Arifin, 2024; Ariyanto, 2023; Arwen, 2023). Therefore, optimizing financial resources is crucial to ensuring the sustainability of these institutions.

Financial performance is not only relevant to commercial enterprises but also plays a crucial role in supporting the sustainability of higher education institutions (Abadi et al., 2023; Dahiyat, 2020; Han, 2020; Naji et al., 2021; Nazari-Shirkouhi et al., 2020; Sriyono, 2020; Yaakub, 2020). Research by Geschwind et al., (2019), highlights that effective financial resource management contributes to achieving the strategic objectives of higher education institutions, including academic success and societal contributions. The disclosure of intangible assets is also a critical factor, as emphasized by Podovac, (2024) and Titisari et al., (2024). Furthermore, tangible and intangible assets often interact synergistically to create added value, providing a strong foundation for organizations to face challenges and seize opportunities in a competitive environment (Gbaraba, 2024).

Most studies on tangible and intangible assets to date have predominantly focused on the business sector (Adu-Ameyaw et al., 2024; Ajewole & Olonite, 2023; Charlie & Akpan, 2020; Dan & Mihăilă, 2021; Hosono et al., 2020; Johari et al., 2021; Kim et al., 2019; Podovac, 2024; Saleh, 2018; Zamzam et al., 2022), while research in the higher education sector, particularly private higher education, remains relatively limited. Additionally, there is an imbalance in the analyses conducted, with greater attention given to tangible assets (Chukwu & Egbuhuzor, 2017; Nwauzor, 2022; Okobo et al., 2022; Okoth & Machuki, 2018), such as physical facilities, compared to intangible assets, such as institutional reputation or intellectual capital, which hold

strategic potential for enhancing competitiveness. Therefore, opportunities remain to expand research into other sectors, such as private higher education, which offer a distinct context for understanding the dynamics of resources and organizational performance (Jancenelle, 2021).

This study provides a novel contribution by integrating tangible and intangible assets into a single analytical model to evaluate their impact on the financial performance of private higher education institutions. Furthermore, it focuses on the unique context of private higher education in Indonesia, which faces challenges and dynamics distinct from public universities. Within the framework of the Resource-Based View (RBV) theory, this research explores how the utilization of tangible and intangible assets can become sources of competitive advantage that drive institutional financial performance sustainably. Accordingly, this study aims to examine the influence of tangible and intangible assets on the financial performance of private higher education comprehensively. Additionally, it analyzes the role of intangible assets, such as institutional reputation, human resources, and information technology, in enhancing competitiveness and fostering innovation.

Literature Review

Resource-Based View Theory

Wernerfelt, (1984) explains that the Resource-Based View (RBV) theory posits that firms can achieve superior competitive advantage and financial performance by possessing, controlling, and utilizing strategic assets, both tangible and intangible. Fahy (2000) highlights that within the resource-based perspective, the critical elements lie in the core resources of a company and the strategic role of management in transforming these resources into a sustainable competitive advantage, ultimately leading to superior firm performance. This theory emphasizes the importance of understanding and managing a firm's internal resources—such as managerial expertise, advanced technology, and ownership of valuable assets, including tangible and intangible assets—as key factors for achieving and maintaining a competitive edge in increasingly complex markets.

The Resource-Based View (RBV) has been widely employed to explain how businesses can achieve superior performance and competitive advantage (Susanti et al., 2023). RBV theory elucidates the relationship between resource management and organizational gains (Musa et al., 2022). In general, the resource-based perspective links superior financial performance to organizational performance, resources, and capabilities (Huang et al., 2006; Jalali et al., 2020). Therefore, the Resource-Based View (RBV) theory is also relevant for application in nonprofit organizations, such as higher education institutions, to excel in competition, improve institutional performance, and ensure organizational sustainability.

Financial Performance

Financial performance is a fundamental element that reflects an organization's ability to effectively utilize its assets in conducting core business activities and generating revenue (Yusuf, 2021). According to Ajewole & Olonite, (2023), financial performance measures the efficiency level of a company in utilizing its resources, assessed by analyzing figures in annual reports to evaluate the company's financial effectiveness over a specific period. Sawaeen & Ali, (2020) define financial performance as the ability of an organization to generate profit or income. Fatihudin (2018) emphasizes that financial performance represents a company's

financial condition over a specific period, encompassing the collection and utilization of funds, measured by several indicators, including the capital adequacy ratio, liquidity, leverage, solvency, and profitability. Sadeli (2011) likens financial performance to the heart of a company, underscoring the importance of strategic financial planning to ensure that every business decision or opportunity yields future benefits for the organization.

The financial performance of a company reflects its economic objectives, as indicated by the return on equity (ROE) ratio. ROE refers to a company's profit attributable to shareholders and serves as a tangible indicator for performance evaluation (Mulyono et al., 2019). A company's financial performance is assessed based on profitability, return on investment (ROI), and cash flows generated from operations (Wu et al., 2006). According to Singh et al., (2016), financial performance can be evaluated not only using objective data but also through subjective approaches, which provide reliable and valid alternatives. Subjective measurement involves managers' perceptions of how well the companies they lead perform, as highlighted in (Singh et al., 2016). Several prior studies have utilized subjective approaches to measure financial performance, including Yaakub (2020); Sriyono (2020); Azis & Tatminah, (2019); Abadi et al., (2023); Pratolo et al., (2022); Phusavat et al., (2011); Dahiyat, (2020); Chheda, (2013); Jawed & Siddiqui (2020).

Yaakub (2020) employed dimensions such as student enrollment, profit, return on investment (ROI), and grants/endowments to measure financial performance. Pratolo et al., (2022) utilized subjective measures including the availability of target output, income effectiveness, and expenditure effectiveness. Sriyono (2020) assessed the financial performance of universities using accreditation standards comprising five indicators: the ownership and management of funds, mechanisms for setting tuition fees, financing policies for academically talented but economically disadvantaged students, monitoring and evaluation of funding and performance, and external audits of financial statements. Mungai et al., (2021) measured the financial performance of public universities using dimensions such as self-financing capacity, expenditure efficiency, improved systems and resources, accountability, and asset management. The implementation of optimal financial performance practices promotes effective financial management within higher education institutions (Arsita & Denovis, 2021). In conclusion, financial performance measurement is a process to evaluate the extent to which an organization or entity achieves its financial objectives.

Tangible Asset and Financial Performance

Tangible assets are a core component of a company's financial statements, encompassing physical assets such as land, buildings, machinery, and inventory. In the context of financial performance, tangible assets play a strategic role as resources that support operational activities and enhance a company's productivity. As a crucial element in accounting and financial management, tangible assets not only represent measurable economic value but also serve as a foundation for strategic decision-making. These assets are utilized to support the company's operational processes in producing goods or services that contribute to revenue growth, without being intended for trading purposes.

Tangible assets are assets that will not be converted into cash within one year of business operations, including property, plant, and equipment, land, buildings, furniture, fixtures, computers, and machinery (Ajewole & Olonite, 2023). Fixed assets constitute a major portion of a company's total assets and are difficult to quickly liquidate into cash (Gbaraba, 2024).

Additionally, tangible assets function as both physical and financial tools used by companies to create value for their customers (Soko, 2014). Adequate ownership of tangible assets reflects good corporate management and serves as a positive indicator of the company's financial performance (Hatem, 2015). Tangible resources are physical and quantifiable resources utilized in organizational activities (Jawed & Siddiqui, 2020).

Tangible assets encompass various physical assets owned by individuals or companies, such as real estate (land, buildings, and other physical properties), machinery and equipment, vehicles, and cash or cash equivalents (Titisari et al., 2024). Tangible resources also include raw materials, geographic location, finances, strategic machinery, and production technologies that support the company's operations (Tshavhungwe & Grobbelaar, 2023). According to Financial Accounting Standards No. 216, tangible assets possess specific characteristics, including being used in the company's operational activities, not intended for sale, having a long useful life (typically subject to depreciation), and existing in a physical form. As a key element in accounting, tangible assets not only reflect the economic value of a company but also serve as a vital indicator for strategic planning and managerial decision-making.

In the context of business organizations, tangible resources have a significant relationship with organizational performance (Okoth & Machuki, 2018). Research by Kraja (2018) indicates that tangible assets have a substantial impact on the success of small and medium-sized enterprises (SMEs). Similar findings were reported by Akinyi (2010), who demonstrated that tangible assets significantly influence corporate performance. Proper allocation of resources has been shown to positively contribute to the performance of financial institutions, emphasizing the importance of efficient resource allocation strategies in enhancing organizational outcomes (Kimani et al., 2024). Furthermore, according to Orujov (2022), investments in tangible assets are made to create or improve assets whose utilization will generate economic benefits and future profits. Research conducted by Eksandy (2023), further affirms that effective and efficient management of tangible assets positively impacts a company's economic performance. This proper management not only supports productivity improvements but also contributes to the optimal attainment of profits for the organization. Based on previous research and variable relationships, a hypothesis can be formulated as follows.

H1: There is a positive relationship between tangible assets and financial performance in private higher education institutions.

Intangible Asset and Financial Performance

Intangible assets have become increasingly relevant in the contemporary economy, especially within the context of a knowledge-based economy. Amid this development, intangible assets such as intellectual property rights, brand reputation, and the competencies and skills of human resources have emerged as key elements in strengthening competitiveness and fostering innovation in companies. This paradigm shift in the economy underscores the strategic role of intangible assets as primary drivers of business growth and organizational sustainability. Intangible resources are considered among the most critical assets due to their unique characteristics, which are difficult for competitors to replicate, thereby providing a sustainable competitive advantage (Low & Lee, 2014).

According to Financial Accounting Standards No. 238, intangible assets are defined as identifiable non-monetary assets without physical substance. These assets include non-physical elements whose value is determined by the intellectual or legal rights inherent in them. The value of an intangible asset is often influenced by market perception, legal protection, and its potential to generate future economic benefits (Titisari et al., 2024). As noted by García-Posada et al., (2020), in the context of business accounting, intangible assets can be classified into three groups: (a) computer software and databases, (b) research and development or other activities leading to intellectual property rights of a scientific or artistic nature, and (c) economic competencies such as improvements in employee skills, organizational structures, or the development of a company's brand reputation.

In line with this classification, tangible examples of intangible resources encompass various essential elements that can support business performance. Managerial expertise, employee knowledge and skills, and operational reputation are crucial aspects of creating added value for organizations. Additionally, intellectual property, brand equity, and goodwill obtained through customer loyalty, strong customer relationships, and positive corporate reputation are categorized as intangible assets that contribute to an organization's competitiveness and sustainability (Tshavhungwe & Grobbelaar, 2023). This is reinforced by research conducted by (Titisari et al., 2024) which highlights the importance of factors such as software, customer lists, and robust operational relationships in enhancing a company's position in the global market.

Intangible assets, which include rights, privileges, and competitive advantages derived from ownership of non-physical elements, are becoming increasingly significant in the modern economy (Kieso, 2012). With their exclusive nature, owned only by specific companies, intangible assets possess a strategic value that cannot be easily imitated by competitors (Gbaraba, 2024). Previous studies have shown that intangible assets have a significant positive impact on corporate performance (Marsal, 2020). These findings are further supported by studies conducted by Ferdaous & Rahman (2019) and Zelalem et al., (2022), which affirm that intangible assets directly contribute to the enhancement of a company's financial performance.

Effective management of intangible assets can generate significant added value, ultimately contributing positively to the company's financial performance (Widnyana et al., 2020). Therefore, the optimal utilization of intangible resources becomes a key factor in achieving sustainable performance and maintaining long-term competitiveness (Musa et al., 2022). Based on previous research and variable relationships, a hypothesis can be formulated as follows.

H2: There is a positive relationship between intangible assets and financial performance in private higher education institutions

To provide a clear and structured understanding of the relationship between the main variables in this study, the following conceptual framework is presented in Figure 1. This conceptual framework is the basis for testing research hypotheses and guiding empirical analysis. The following diagram illustrates the conceptual framework that will be used to explore and validate the research model in this study.

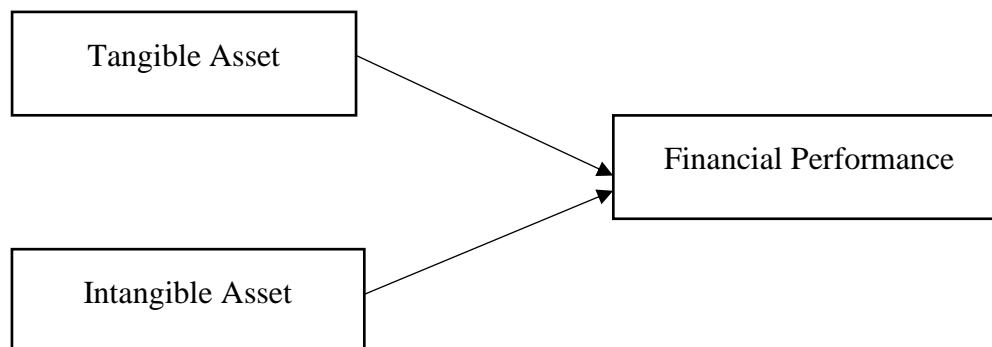


Figure 1: Research Framework

Methodology

This research is empirical and quantitative with a survey method through the distribution of questionnaires. The population in this study includes private higher education registered with the Region X Higher Education Service Institution, with a total of 220 institutions based on data from the Higher Education Service Institution in the 2023 Figures. The determination of the sample size was carried out using the G-Power calculation, which resulted in a sample of 107 private higher education. In anticipation of possible incomplete or non-returned questionnaires, the sample size is added by 30%, as suggested by the Ajay & Micah, (2014). Thus, the total number of questionnaires distributed amounted to 139 copies, and as many as 124 questionnaires were successfully collected and processed in this study. This study uses a stratified random sampling technique to ensure a proportional representation of each province in the Higher Education Service Institution of Region X. This technique was chosen because the private universities registered in the region are spread across several provinces with diverse educational characteristics.

The research respondents consisted of representatives of leaders in each private higher education, namely the vice chancellor for finance for universities and institutes, the vice chairman for finance for high schools, and the deputy director for finance for academies and polytechnics. Financial officials, such as the vice chancellor for finance, deputy director, or vice chairman for finance were chosen as respondents because they have a strategic role in planning, managing, and optimizing tangible and intangible assets, which directly contribute to the financial performance of the institution.

The research instruments for the variables of tangible assets, intangible assets, and financial performance used a five-point Likert scale, with a value ranging from 1 (strongly inappropriate) to 5 (strongly appropriate). Tangible asset measurement scale was adapted and modified from research Akinyi, (2010), instruments of the National Accreditation Board-Higher Education in 2016 and 2020, as well as Government Regulation No. 19 of 2015. The measurement of tangible assets includes three main indicators, namely financial resources, physical facilities, and public facilities. Intangible assets were measured using fourteen statement items adapted from the research of Akinyi (2010). The items evaluated respondents' perceptions of several aspects, including human resources, organizational culture and structure, institutional reputation, access to information and experiences, and institutional readiness to face change.

Meanwhile, the measurement of financial performance is adapted from research by Pratolo et al., (2022); Mungai et al., (2021); Sriyono, (2020), and instruments of the National Accreditation Board-Higher Education. Financial performance is evaluated based on three main indicators, namely self-financing ability, financial accountability, and asset management, which include both financial assets and non-financial assets. The initial data was analyzed using SPSS to overcome problems such as lost data, outliers, and abnormalities. The main analysis was carried out using SmartPLS software version 4.1.0.3 with a partial least square (PLS) approach to ensure the validity and reliability of the research model.

Results and Discussion

Respondent Overview

Table 1: Profile of Respondents

Background	Information	Frequency	Percentage (%)
Current Position	Vice Chancellor for Finance	52	41.9
	Deputy chairman for finance	45	36.3
	Deputy Director for Finance	27	21.8
Category	University	43	34.7
	Institute	9	7.3
	High School	45	36.3
	Politeknik	3	2.4
	Academy	24	19.3
Gender	Male	74	59.7
	Female	50	40.3
Education's Level	Doctor	37	29.8
	Master	87	70.2
Number of Years in Present Position	Less than <2 years	43	34.7
	Between 2-4 years	63	50.8
	Between 5-6 years	15	12.1
	Between 7-8 years	3	2.4

Based on Table 1, This study involved respondents who have a strategic role in the financial management of private universities, namely Vice Chancellor for Finance (41.9%), Deputy Chairman for Finance (36.3%), and Deputy Director for Finance (21.8%). The strata division is based on the type of college, with the following proportions: university (34.7%), institute (7.3%), high school (36.3%), polytechnic (2.4%), and academy (19.3%). The characteristics of the respondents in this study also include gender distribution, with the proportion of men at 59.7% and women at 40.3%. In this study, the education level of the respondents consisted of 29.8% who had a doctoral degree and 70.2% who had a master's degree. In terms of work experience in their current position, as many as 34.7% of respondents have served less than 2 years, while the majority of respondents (50.8%) have between 2 and 4 years of experience. A

total of 12.1% of respondents have served for 5 to 6 years, and only 2.4% have between 7 and 8 years of experience.

Data Analysis

This test aims to measure the extent to which each indicator represents the variables used in the research instrument by examining the results of the loading factor analysis. In this analysis, the expected loading factor value is at least 0.7, although a value of 0.6 is still considered acceptable (Cepeda Carrión et al., 2016; Hair, J. F., Hult, G. T. M., Ringle, C., & Sarstedt, 2022). Indicators with a loading factor value below 0.6 are deemed to have low validity and are insufficient to explain the construct of the variable; thus, they should be excluded from the model. Based on the results of the loading factor calculations presented in Figure 2, all indicators in this model have values exceeding 0.7. This indicates that all indicators adequately represent their respective variables and meet the criteria to proceed to the next stage of analysis.

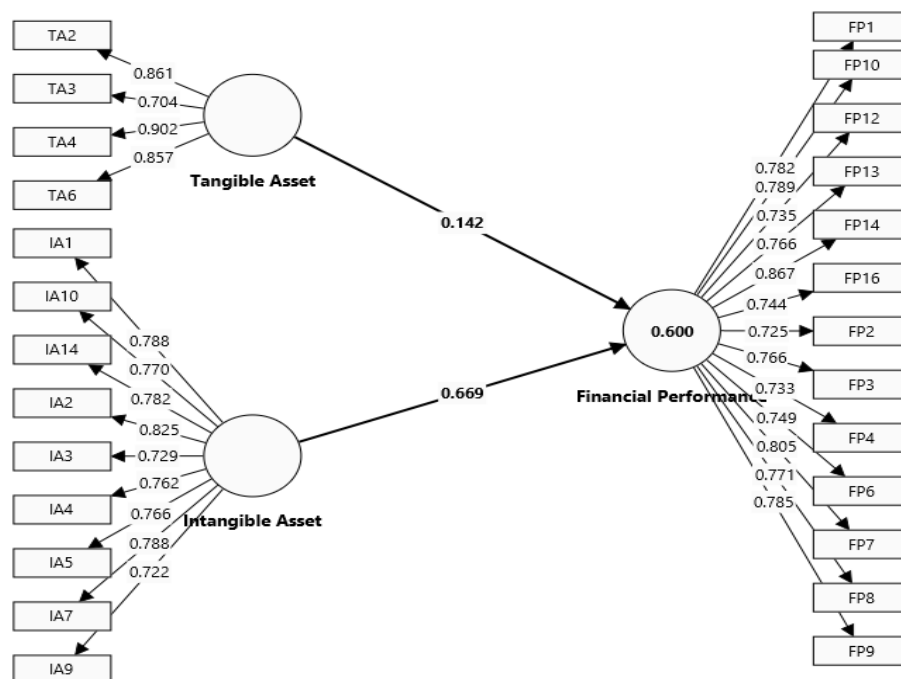


Figure 2: Measurement model

The results presented in Table 2 demonstrate reliability and validity exceeding the expected threshold of 0.70, indicating that the measurement instruments used in this study are of high quality. The strong reliability values reflect the instrument's ability to produce consistent results across repeated measurements, while adequate validity confirms that the instrument accurately measures what it is intended to measure. Table 2 further reveals that the Average Variance Extracted (AVE) values exceed 0.50, Cronbach's alpha values are greater than 0.70, and composite reliability values are above 0.70 (Benitez et al., 2020; Hair Jr. et al., 2017). These findings confirm that the measurement instruments in this study are not only reliable but also valid, providing a robust foundation for further analysis in this research.

Table 2: Construct Reliability and Validity

Constructs	Items	Convergent validity		Reliability	
		Factor loading	(AVE)	α	CR
Tangible Asset	TA2	0.861	0.696	0.851	0.852
	TA3	0.704			
	TA4	0.902			
	TA6	0.857			
Intangible Asset	IA1	0.788	0.594	0.914	0.915
	IA10	0.770			
	IA14	0.782			
	IA2	0.825			
	IA3	0.729			
	IA4	0.762			
	IA5	0.766			
	IA7	0.788			
	IA9	0.722			
Financial Performance	FP1	0.782	0.595	0.943	0.946
	FP10	0.789			
	FP12	0.735			
	FP13	0.766			
	FP14	0.867			
	FP16	0.744			
	FP2	0.725			
	FP3	0.766			
	FP4	0.733			
	FP6	0.749			
	FP7	0.805			
	FP8	0.771			
	FP9	0.785			

Discriminant Validity

The assessment of discriminant validity based on the Fornell-Larcker criterion, as shown in Table 3, indicates that the square root of the Average Variance Extracted (AVE) for each variable (values on the diagonal) is greater than the correlations between these variables. Specifically, the AVE square root for the financial performance variable, which is 0.771, is higher than the correlation between intangible assets and financial performance (0.768) and between tangible assets and financial performance (0.610).

These findings suggest that the financial performance construct exhibits adequate discrimination from other constructs, supporting the claim that the model successfully distinguishes between the variables analyzed. This also confirms that the constructs in the model demonstrate good discriminant validity, consistent with the guidelines proposed by Fornell and Larcker (Fornell, C., & Larcker, 1981).

Table 3: Discriminant Validity (Fornell-Larcker Criterion)

Variable	Financial Performance	Intangible Asset	Tangible Asset
Financial Performance	0.771		
Intangible Asset	0.768	0.771	
Tangible Asset	0.610	0.700	0.835

Discriminant validity assessment can be conducted by examining the Heterotrait-Monotrait (HTMT) ratio, which serves to ensure that different constructs within the model are truly distinct and not overlapping. Based on the results shown in Table 4, the HTMT values below the threshold of 0.90 indicate that the discriminant validity between the constructs in this model is acceptable (Roemer et al., 2021). This HTMT assessment provides additional evidence that the constructs used in the structural model demonstrate adequate discriminant validity, which is a crucial element in ensuring the quality of the proposed model.

Table 4: Discriminant Validity (HTMT Criterion)

Variable	Financial Performance	Intangible Asset	Tangible Asset
Financial Performance			
Intangible Asset	0.819		
Tangible Asset	0.666	0.793	

Structural Model Assessment

An initial analysis of the structural model was conducted by evaluating the Variance Inflation Factor (VIF) to identify potential multicollinearity between the intangible asset and tangible asset constructs. The results show that the VIF value of 1.963 is below the threshold of 5, indicating that there are no significant multicollinearity issues in the model (Hair et al., 2011). Furthermore, based on Table 5, the R^2 value for the financial performance variable is 0.600, indicating that the model has a moderate effect in explaining the variability of financial performance.

The effect size (f^2) provides further insight into the practical relevance of the relationship between the independent and dependent variables. The results show an f^2 value of 0.570 for intangible assets and 0.026 for tangible assets, both reflecting moderate effect sizes according to the criteria set by (Cohen, 1988) and (Hair et al., 2014). Additionally, predictive relevance analysis through the redundancy Q^2 value confirms the validity of the model, with values of 0.525 for financial performance, 0.486 for intangible assets, and 0.487 for tangible assets. These values indicate that the model has adequate predictive relevance and is capable of accurately representing the relationships between the variables within the research framework. This description affirms that the resulting structural model has strong statistical quality and is reliable for analyzing the relationships between variables in this study.

Table 5: Structural Model Assessment

Variable	R2	Inner Vif	Q2	F2
Financial Performance	0.600		0.525	
Intangible Asset		1.963	0.486	0.570
Tangible Asset		1.963	0.487	0.026
SRMR value	Value 0.071			

Notes: SRMR=Standardized Root Mean Square Residual

According to Henseler et al., (2014), the Standardized Root Mean Square Residual (SRMR) serves as an indicator of model fit in PLS-SEM, aimed at avoiding specification errors in the model. In the overall evaluation, the SRMR value generated for this model is 0.071, which is below the generally accepted threshold of 0.10. This value indicates that the model has an adequate fit and is consistent with the empirical data used.

Hypothesis Testing

The next step in the analysis of the research results involves evaluating the formulated hypotheses. Table 6 presents a summary of the hypothesis testing results at a 5% significance level, determined by a critical t-value of 1.96. This value is used as a reference to determine whether the relationships between variables in this study are statistically significant. If the generated t-value is greater than 1.96, the relationship is considered significant. Conversely, a t-value smaller than 1.96 indicates that the relationship is not significant at the 5% level.

Table 6: Direct Effect (T-Test)

		Original Sample (O)	Std. Dev (STDEV)	t-value	P Value	Test result
H1	IA -> FP	.669	.067	9.907	0,000	Supported
H2	TA -> FP	.142	.070	2.019	0,044	Supported

Notes: FP=Financial performance, IA=Intangible Asset, TA= Tangible Asset

Based on the results presented in Table 6, the first hypothesis related to intangible assets shows a t-value of 9.907, which substantially exceeds the critical value of 1.96. This indicates that the hypothesis is supported by the data. Similarly, the second hypothesis related to tangible assets has a t-value of 2.019, which is also higher than the critical value. Therefore, the second hypothesis is also supported. Furthermore, the p-values for both hypotheses are below 0.05, further strengthening the statistical significance of the test results.

Discussion

Tangible Asset and Financial Performance

This study demonstrates that tangible assets have a significant positive impact on the financial performance of private higher education in Indonesia, as stated in the first hypothesis. These findings are consistent with previous research, such as that conducted by (Adarov & Stehrer, 2019; Akinyi, 2010; Kamasak, 2017; Nwauzor, 2022; Saleh, 2018), which shows that tangible assets contribute significantly to the ability of economic entities to enhance their financial performance. This result is also reinforced by the study of Zamzam et al., (2022), which states that good management of tangible assets allows organizations to maximize profits and achieve optimal financial performance.

Tangible assets, such as buildings, laboratories, equipment, and campus facilities, play an important role in supporting operational efficiency and the attractiveness of institutions. Adequate physical infrastructure enables private higher education to conduct academic activities effectively, reduce operational costs, and increase productivity. Jawed & Siddiqui, (2020) emphasize that the greater the tangible assets of an entity, the greater its potential to generate future income. Moreover, Floștoiu & Milandru, (2020) state that tangible assets are one of the main pillars in the formation and operation of businesses, including in the context of higher education. Without significant contributions from tangible assets, an entity cannot operate its economic activities optimally.

Good physical facilities also contribute to enhancing the reputation and competitiveness of institutions. Modern and adequate campus infrastructure creates a better learning experience for students, thereby increasing the institution's attractiveness. With the increasing number of students, revenue from tuition fees can rise significantly. Furthermore, efficiently managed tangible assets open opportunities for collaboration with external parties, such as the government or industry partners, which can ultimately expand the institution's revenue sources. Overall, the findings of this study underscore the importance of tangible assets in supporting the financial performance of private higher education in Indonesia within the context of this research. Therefore, effective management of tangible assets becomes a key strategy for higher education institutions to remain competitive in the face of dynamic economic challenges.

Intangible Asset and Financial Performance

This study also found that intangible assets have a significant impact on the financial performance of private higher education in Indonesia. These findings are in line with the results of various previous studies, such as those conducted by Akinyi, (2010); Egorov, (2023); Ferdaous & Rahman, (2019); Kraja, (2018); Moeller, (2009); Rajchelt-Zublewicz et al., (2019); Zelalem et al., (2022). These studies emphasize that intangible assets, such as reputation, institutional networks, intellectual capital, and innovation, are strategic elements that support organizational performance success.

The Resource-Based View (RBV) theory explains that intangible assets are strategic resources that are difficult for competitors to imitate and serve as the foundation for a company's success (Barney, 2001). In the context of private higher education, intangible assets play a key role in creating sustainable competitive advantages. The optimal management of intangible assets can create added value, as explained by Widnyana et al., (2020), who mention that strategic management of intangible resources can significantly improve financial performance. Additionally, Musa et al., (2022) emphasize that the utilization of intangible resources is a key factor in achieving sustainable performance.

From an RBV perspective, the development of strategic resources—both tangible and intangible—within an organization is essential to supporting business performance improvement (Safari & Saleh, 2020; Valaei et al., 2022). Private higher education that successfully manages intangible assets, such as faculty expertise and competence, innovation in curriculum development, and external relationships, will be able to enhance the quality of education services provided while also strengthening the financial position of the institution. The results of this study further emphasize that intangible assets are a key driver of financial performance in private universities. Therefore, strategic management of intangible assets

should be a priority for university administrators, particularly in the face of the increasingly competitive dynamics in the higher education sector.

Conclusion

The results of this study emphasize that both tangible assets and intangible assets have a significant impact on the financial performance of private higher education in Higher Education Service Institutions in Region X, Indonesia. Tangible assets, such as campus facilities, infrastructure, laboratories, and equipment, have been shown to make an important contribution to supporting institutional operations and ensuring the efficient use of resources. Meanwhile, intangible assets, such as institutional reputation, the quality of human resources, and the utilization of information technology, play a strategic role in driving innovation, enhancing competitiveness, and creating long-term added value.

This study provides significant contributions both in academic and practical contexts within the higher education sector. For private higher education institutions, the findings highlight the importance of an integrated asset management strategy to enhance operational efficiency and institutional competitiveness. The optimization of tangible and intangible assets plays a crucial role in supporting financial performance improvement. Furthermore, the findings of this study can serve as a reference for private higher education institutions in determining investment priorities, whether in the development of physical facilities or the enhancement of intangible assets, such as improving teaching quality and fostering academic innovation.

Moreover, this study has policy implications for the government as the regulator of higher education, particularly in designing funding policies based on asset optimization to enhance the efficiency and financial sustainability of higher education institutions. Furthermore, the findings underscore the importance of digital transformation in improving operational effectiveness and institutional competitiveness. Therefore, higher education institutions are encouraged to adopt technology-based solutions in academic and financial management to ensure more efficient resource utilization and adaptability to the dynamic higher education environment.

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