

Private University Performance: Leadership Commitment, Intellectual Capital, Collaborative Capability, and Competitive Advantage

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Abstract

Purpose: This study explains how leadership commitment and intellectual capital are converted into private university performance through collaborative capability and competitive advantage.

Research Methodology: A quantitative, explanatory, cross-sectional survey was conducted among private higher education institutions supervised by LLDikti Region II in Southern Sumatra, Indonesia. Proportionate stratified random sampling selected 39 institutions from a population of 160. Data from 395 leaders and managerial personnel were collected using five-point Likert scales and analyzed with structural equation modeling in LISREL 8.80.

Results: The model explained 80% of the variance in collaborative capability, 84% in competitive advantage, and 88% in institutional performance. Leadership commitment did not significantly predict collaborative capability or competitive advantage, although it had a positive direct effect on performance. Intellectual capital significantly predicted all three outcomes. Collaborative capability strengthened competitive advantage but had no significant direct effect on performance, while competitive advantage was the strongest predictor of performance.

Conclusions: Strategic resources generate institutional outcomes when they are structured to create advantages valued by stakeholders.

Limitations: The cross-sectional, single-source design and regional setting limit causal and broader generalization.

Contributions: The study extends resource-based and dynamic-capability reasoning by identifying collaborative capability as a resource-conversion mechanism and offers practical priorities for capability building in private higher education.

Keywords: *Collaborative Capability, Competitive Advantage, Intellectual Capital, Leadership Commitment, Private Higher Education*

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1. Introduction

Private Higher Education Institutions (PHEIs) perform a critical access, workforce-development, and regional-development function in Indonesia. Their contribution is especially important outside the country's major metropolitan centers, where public capacity is limited and local institutions often become the principal providers of professional education. At the same time, private universities operate in an environment marked by intensified competition for students, qualified academics, research partners, and financial resources. They are expected to demonstrate credible outcomes in teaching, research, community engagement, graduate employability, and institutional governance while remaining financially viable. These simultaneous pressures make institutional performance a strategic management problem rather than merely an administrative or accreditation concern ([Gunarto et al., 2018](#); [Tjahjadi et al., 2019](#)). Recent evidence from Indonesian PHEIs likewise shows that performance-management systems, compensation, and staff competence are important operational foundations of university employee performance ([Wijaya, 2025](#)).

The performance challenge is particularly demanding for institutions with modest resource bases. Unlike organizations that can rely on scale, protected markets, or large public appropriations, many PHEIs must create value from intangible assets: the expertise and commitment of their people, institutional routines, stakeholder relationships, reputation, and their ability to coordinate with external partners. Studies of intellectual capital in higher education consequently emphasize that human, structural, and relational resources are central to quality, accountability, innovation, and sustainable institutional development ([Bisogno et al., 2018](#); de Matos Pedro et al., 2022; [Nicolò et al., 2020](#); [Secundo et al., 2018a](#)). Yet possessing knowledge resources does not guarantee superior outcomes. Resources must be mobilized, combined, and directed toward results that students, employers, regulators, and communities perceive as valuable.

Leadership commitment is often expected to supply this direction. Senior leaders establish priorities, allocate attention and budgets, create incentives, and signal which activities are legitimate. In higher education, committed leadership can strengthen strategic alignment, knowledge sharing, service quality, and innovation by connecting academic and administrative work to institutional goals ([Al-Husseini & Elbeltagi, 2016](#); [Al-Husseini et al., 2021](#); [Alonderiene & Majauskaite, 2016](#)). However, commitment may remain rhetorical when it is not translated into governance routines, cross-unit coordination, and sustained resource support. This distinction matters because universities are professional organizations in which formal authority alone may be insufficient to generate collaboration or differentiation. Collaborative capability provides a plausible conversion mechanism. Universities increasingly depend on joint research, curriculum co-development, industry engagement, resource sharing, alumni networks, government programs, and inter-institutional alliances.

Successful collaboration requires more than the existence of contacts. It involves routines for selecting partners, aligning objectives, sharing knowledge, resolving conflict, monitoring reciprocal commitments, and turning joint activity into outcomes that stakeholders value. Research on university–industry and interorganizational relationships shows that trust, social capital, absorptive capacity, governance, and continuity influence whether partnerships produce learning and innovation ([Al-Tabbaa & Ankrah, 2016](#); [Bruneel et al., 2010](#); [Mascarenhas et al., 2018](#); [Perkmann et al., 2021](#); [Rybnicek & Königsguber, 2019](#)).

Collaborative capability should therefore be understood as an organizational capacity, not merely a count of agreements or events. Competitive advantage is the next link in the proposed performance pathway. In a higher education context, advantage is reflected in a university's ability to offer a value proposition that relevant stakeholders perceive as superior or distinctive. Sources of such advantage can include program relevance, service responsiveness, teaching quality, specialist expertise, graduate outcomes, research visibility, reputation, digital accessibility, and trusted stakeholder relationships. Reputation and legitimacy are particularly consequential because students and partners frequently make decisions under information asymmetry ([Miotto, Del-Castillo-Feito, & Blanco-González, 2020](#)).

A university can therefore be active in collaboration without improving performance if those partnerships do not create recognizable differentiation, efficiency, or stakeholder value. Existing research provides important evidence about leadership, intellectual capital, collaboration, competitive advantage, and performance, but these constructs are commonly examined in separate models. Intellectual capital studies tend to focus on disclosure, measurement, innovation, or direct performance effects ([Asiaei & Jusoh, 2017](#); [Bayraktaroglu et al., 2019](#); [Buenechea-Elberdin, 2017](#)). Collaboration studies frequently examine antecedents of partnership success without integrating collaboration into a complete institutional-performance mechanism ([Sjöo & Hellström, 2019](#)). Leadership research, meanwhile, tends to assume that commitment or style will directly improve outcomes, even though the effect may depend on the organizational capabilities through which strategic intentions are enacted. This fragmentation leaves a central question unanswered: how are leadership commitment and intellectual capital converted into sustained institutional performance in resource-constrained private universities? No prior study has simultaneously modeled this full conversion pathway, including the mediating roles of collaborative capability and competitive advantage, within the specific context of PHEIs operating under resource constraints outside major metropolitan centers.

This study addresses that question by testing an integrated model in PHEIs located in Southern Sumatra, Indonesia. Leadership commitment and intellectual capital are treated as strategic antecedents; collaborative capability and competitive advantage are positioned as resource-conversion mechanisms; and private university performance is the ultimate outcome. The study makes three contributions. First, it connects the Resource-Based View (RBV) with the dynamic-capabilities perspective by distinguishing strategic resource possession from the processes through which resources are reconfigured and exploited, an integration that prior studies examining intellectual capital or leadership in isolation have addressed only partially. Second, unlike previous research that tested these constructs in separate models, this study explicitly models the full conversion pathway and clarifies that collaboration is not inherently performance-enhancing unless it produces a competitive advantage. Third, it provides regionally grounded evidence from PHEIs outside Java, a setting in which capability development and partnership access are especially salient.

The study therefore investigates nine relationships: the effects of leadership commitment on collaborative capability, competitive advantage, and performance; the effects of intellectual capital on the same three outcomes; the effect of collaborative capability on competitive advantage and performance; and the effect of competitive advantage on performance. By examining these relationships simultaneously through Structural Equation Modeling (SEM), the study seeks to explain not only whether strategic resources matter, but also how they become institutionally productive.

2. Literature Review and Hypotheses Development

2.1 Theoretical Foundations

The RBV explains performance heterogeneity through resources that are valuable, rare, difficult to imitate, and effectively organized ([Barney, 1991](#)). In knowledge-intensive organizations, many strategically relevant resources are intangible and embedded in people, routines, relationships, and institutional histories. Higher education institutions exemplify this condition because their principal outputs learning, knowledge creation, professional formation, and public value depend on expertise and coordinated intellectual work. Intellectual capital is therefore compatible with the RBV as a multidimensional stock of knowledge-based resources that may support superior services and stakeholder relationships.

A static resource explanation is incomplete, however, when environments and stakeholder expectations change. The dynamic-capabilities perspective focuses on the organizational processes that enable resources to be sensed, seized, recombined, and transformed ([Teece, 2007, 2018](#); [Teece et al., 1997](#)). Meta-analytic and review evidence indicates that dynamic capabilities contribute to performance by enabling organizations to renew their resource configurations rather than merely exploit existing assets ([Fainshmidt et al., 2016](#); [Schilke et al., 2018](#)). In this study, collaborative capability represents such a transforming capacity because it allows a university to combine internal

knowledge with complementary external resources. Competitive advantage represents the proximal strategic outcome of that conversion, while institutional performance captures the realized results.

The integrated logic can be expressed as a sequence. Leadership commitment provides strategic intent, legitimacy, and resource support. Intellectual capital supplies knowledge, systems, and relationships. Collaborative capability organizes these inputs into coordinated action across organizational boundaries. Competitive advantage emerges when that action creates distinctive value, and performance improves when stakeholders recognize and respond to the advantage. The model also allows direct effects because leadership and intellectual capital can influence internal operations without always passing through collaboration. This process-oriented interpretation is consistent with calls to move intellectual-capital research beyond resource inventories toward explanations of how intangible assets are mobilized ([Secundo et al., 2016](#); [Secundo et al., 2018b](#)).

2.2 Leadership Commitment

Leadership commitment is the sustained willingness of senior leaders to support strategic priorities through communication, personal involvement, resource allocation, monitoring, and accountability. It differs from a favorable attitude because it is observable in decisions and follow-through. Within PHEIs, leadership commitment is especially consequential because academic units possess substantial autonomy and institutional priorities can easily fragment. Leaders can reduce this fragmentation by clarifying common objectives, protecting resources for long-term capability development, and aligning performance systems with strategic goals.

Committed leaders can facilitate collaborative capability in several ways. They can legitimize external engagement, remove bureaucratic barriers, appoint boundary-spanning teams, create partnership criteria, and reward knowledge sharing. However, the translation of leadership commitment into collaborative capability is not automatic in higher education settings. Universities are characterized by distributed governance, strong disciplinary identities, and collegial decision-making norms that can attenuate the direct influence of senior leadership on faculty behavior and external engagement routines. In this context, leadership commitment may need to be sustained over extended periods and institutionalized through formal structures before it meaningfully shapes collaborative practice. Transformational leadership studies in higher education suggest that leadership can promote innovation partly through knowledge-sharing processes, indicating that leadership effects are frequently mediated by organizational behavior rather than produced by directives alone ([Al-Husseini & Moizer, 2021](#)). Trust also mediates the relationship between leadership and knowledge sharing, reinforcing the need for leaders to create relational and procedural conditions for cooperation ([Le & Lei, 2018](#)). Therefore, stronger leadership commitment should increase a university's capacity to coordinate collaborative activity, though the strength of this effect may depend on how deeply leadership intentions are embedded in institutional routines.

Leadership commitment may also enhance competitive advantage, yet this relationship warrants careful contextual reasoning in the higher education setting. Unlike commercial firms where strategic leaders can reallocate resources and reposition offerings relatively quickly, university leaders operate within accreditation requirements, government regulations, academic traditions, and shared governance structures that constrain strategic maneuverability. Competitive advantage in higher education is therefore built incrementally through reputation, program quality, and stakeholder trust rather than through rapid strategic pivots. Leaders shape choices about market positioning, service quality, academic specialization, digital transformation, and stakeholder engagement, and a coherent strategic focus can help an institution concentrate scarce resources on a distinctive value proposition. Evidence linking leadership to innovation and satisfaction in higher education supports the premise that leadership practices influence stakeholder-relevant outcomes ([Al-Husseini & Elbeltagi, 2016](#); [Alonderiene & Majauskaite, 2016](#)). Nevertheless, because advantage is embedded in systems and capabilities that accumulate over time, the effect of leadership commitment on competitive advantage is expected to be conditional on whether leadership intentions are consistently institutionalized across administrative and academic units rather than remaining at the level of individual managerial initiative.

A direct relationship with performance is also plausible. Leaders influence target setting, performance review, budget discipline, coordination, and the pace of corrective action. Even when collaborative capability or competitive positioning is underdeveloped, committed leaders may improve operational consistency and accountability. The direct path is therefore included alongside the capability-mediated paths. Related evidence from Indonesian universities also links leadership style and organizational culture to publication performance through motivation ([Hiswara, Ali, Sawitri, & Rony, 2025](#)).

H₁: Leadership commitment has a positive effect on collaborative capability in private universities

H₂: Leadership commitment has a positive effect on competitive advantage in private universities

H₃: Leadership commitment has a positive effect on private university performance

2.3 Intellectual Capital

Intellectual capital comprises knowledge-based resources that can be grouped into human, structural, and relational capital. Human capital includes employees' education, expertise, experience, creativity, and problem-solving capacity. Structural capital includes databases, digital systems, policies, organizational routines, curricula, knowledge repositories, and institutional culture. Relational capital includes reputation, trust, alumni relationships, government links, employer networks, and partnerships. These dimensions are mutually reinforcing: knowledgeable employees require supportive systems, while organizational knowledge becomes more valuable when it is connected to external stakeholders (de Matos Pedro et al., 2022; [Secundo et al., 2018a](#)).

Empirical studies generally associate intellectual capital with innovation, market value, and organizational performance. Knowledge-based human-resource practices can strengthen intellectual capital and innovation ([Kianto, Sáenz, & Aramburu, 2017](#)), while robust performance-measurement systems can make intangible resources more visible and actionable ([Asiaei & Jusoh, 2017](#)). Evidence from different organizational contexts also indicates that intellectual capital supports innovation and financial or market outcomes ([Agostini et al., 2017](#); [Bayraktaroglu et al., 2019](#); [Cabrilo & Dahms, 2018](#); [Sardo & Serrasqueiro, 2017](#); [Xu & Li, 2019](#)). In higher education, intellectual-capital management is linked to accountability, quality, and institutional performance, although the mechanisms remain context dependent ([Nicolò et al., 2020](#); [Tjahjadi et al., 2019](#)). Complementary evidence from knowledge-based organizations identifies human-resource development, knowledge orientation, knowledge evaluation and transfer, and information-system infrastructure as core conditions for effective knowledge management ([Ghorbani & Khanachah, 2020](#)).

Intellectual capital should enhance collaborative capability because collaboration requires absorptive capacity, codified processes, and relational readiness. Human capital enables partners to understand and combine specialized knowledge; structural capital provides systems for documentation, coordination, and continuity; and relational capital lowers search and trust costs. Research shows that intellectual capital can support supply-chain collaboration, collaborative knowledge creation, and network competitiveness ([Al-Omouh et al., 2022](#); [Shou et al., 2020](#); [Vătămănescu et al., 2016](#)). In a university, these resources should facilitate joint research, curriculum partnerships, staff exchange, and shared services.

Intellectual capital should also influence competitive advantage. Expertise, effective systems, and trusted relationships enable universities to deliver higher quality, respond more quickly, and develop programs that competitors find difficult to reproduce. Studies report positive links between intellectual capital and competitive advantage, sometimes through innovation as an intermediate mechanism ([Marulanda-Grisales & Vera-Acevedo, 2022](#); [Obeidat et al., 2021](#); [Yaseen et al., 2016](#)). The advantage is likely to be more sustainable when multiple dimensions of intellectual capital operate as an interconnected system rather than as isolated assets.

Finally, intellectual capital can affect performance directly. Faculty expertise can improve teaching and research; structural capital can reduce process errors and improve service efficiency; and relational capital can support enrollment, employability, funding, and legitimacy. Research on academic spinoffs, university intellectual-capital management, and student-oriented sustainability demonstrates the diverse pathways through which intangible resources contribute to institutional

outcomes ([Mariani et al., 2018](#); [Pedro et al., 2025](#); [Secundo et al., 2016](#)).

H₄: Intellectual capital has a positive effect on collaborative capability in private universities

H₅: Intellectual capital has a positive effect on competitive advantage in private universities

H₆: Intellectual capital has a positive effect on private university performance

2.4 Collaborative Capability, Competitive Advantage, and Performance

Collaborative capability is the institutionalized capacity to identify appropriate partners, establish shared goals, coordinate interdependent activities, exchange knowledge, manage conflict, and evaluate joint outcomes. This definition distinguishes capability from episodic cooperation. A memorandum of understanding, for example, is only an administrative artifact unless it is supported by routines that generate reciprocal action and learning. Systematic reviews of university–industry collaboration show that successful partnerships depend on partner complementarity, prior relationships, trust, communication, incentives, boundary-spanning roles, and governance arrangements ([Mascarenhas et al., 2018](#); [Rybnicek & Königgruber, 2019](#); [Sjöo & Hellström, 2019](#)).

Collaborative capability can produce competitive advantage by increasing access to complementary expertise, technology, facilities, labor-market intelligence, and legitimacy. It can also accelerate organizational learning and enable universities to co-create distinctive programs or services. Social capital and governance mechanisms are particularly relevant because they reduce transaction costs and help partners manage divergent institutional logics ([Al-Tabbaa & Ankras, 2016](#); [Bruneel et al., 2010](#); [Guerrero et al., 2021](#)). Academic-engagement research likewise shows that relationship quality and organizational support shape the value created through external interaction ([Perkmann, Salandra, Tartari, McKelvey, & Hughes, 2021](#)). A university that repeatedly converts partnerships into relevant curricula, research solutions, internships, or community outcomes should be better positioned than competitors that collaborate only symbolically.

Competitive advantage is conceptualized as a stakeholder-perceived superiority in quality, differentiation, responsiveness, innovation, reputation, or efficiency. This relational definition is appropriate for higher education because advantage is not meaningful in isolation; it exists relative to alternatives and to the criteria stakeholders use when choosing institutions. Reputation and legitimacy can sustain advantage by reducing uncertainty and signaling institutional quality ([Miotto, Del-Castillo-Feito, & Blanco-González, 2020](#)). Intellectual-capital networks can also strengthen competitiveness when universities use their relationships strategically rather than treating them as peripheral activities ([Vătămănescu, Andrei, Dumitriu, & Leovaridis, 2016](#)).

A strong competitive advantage should improve institutional performance through student demand, partner preference, staff attraction, resource mobilization, service quality, and the capacity to maintain strategic investments. The relationship is expected to be positive because advantage captures the value-creation position that precedes measurable results. Nevertheless, collaboration may not directly improve performance. Partnerships can impose negotiation, monitoring, and coordination costs, and their outputs may take time to become visible. A direct path is retained in the model to test whether collaboration creates immediate performance benefits beyond its contribution to competitive advantage.

H₇: Collaborative capability has a positive effect on competitive advantage in private universities

H₈: Competitive advantage has a positive effect on private university performance

H₉: Collaborative capability has a positive direct effect on private university performance

3. Research Methodology

3.1 Research Design and Setting

The study used a quantitative, explanatory, cross-sectional design. This design was appropriate because the objective was to test a theoretically specified network of relationships among latent constructs at a defined point in time. SEM was selected because it permits simultaneous assessment of the measurement model and the structural relationships, thereby accounting for measurement error while estimating direct effects among the constructs.

The research setting comprised PHEIs supervised by LLDikti Region II, which covers South Sumatra, Lampung, Bengkulu, and the Bangka Belitung Islands. The institutional population consisted of 160 private universities and colleges. The unit of analysis was the institution, while the observation units were leaders and managerial personnel who possessed knowledge of strategic priorities, collaboration, intellectual resources, competitive positioning, and performance.

3.2 Population, Sampling, and Respondents

A proportionate stratified random-sampling procedure was used to preserve the provincial distribution of the population. Thirty-nine institutions were selected: 19 in South Sumatra, 10 in Lampung, five in Bengkulu, and five in the Bangka Belitung Islands. Within the sampled institutions, questionnaires were distributed to leaders and managerial staff. After screening for completeness and usability, 395 responses were retained for analysis. The sample included different institutional forms, genders, educational qualifications, and institutional ages, thereby providing variation in organizational experience and managerial perspectives.

Participation was voluntary, responses were analyzed in aggregate, and anonymity was emphasized to reduce evaluation apprehension. The survey instrument separated the construct blocks where feasible and used neutral wording to reduce common-method inflation. Because all variables were collected from the same respondents, the analysis also examined the factor structure and overall measurement quality as post-hoc diagnostics.

The distribution of the institutional population and the selected sample across the four provinces is presented in Table 1.

Table 1. Distribution of the institutional population and sample

Provinces	Population of PHEIs	Sampled PHEIs
South Sumatra	81	19
Lampung	54	10
Bengkulu	14	5
Bangka Belitung Islands	11	5
Total	160	39

The respondent and institutional characteristics of the 395 valid observations are summarized in Table 2.

Table 2. Respondent and institutional characteristics

Characteristic	Category	Frequency	Percentage (%)
Institutional type	Academy	3	0.8
	Polytechnic	38	9.6
	College (Sekolah Tinggi)	94	23.8
	Institute	33	8.4
	University	227	57.5
Gender	Male	149	37.7
	Female	246	62.3
Education	Master degree	223	56.4
	Doctoral degree	172	43.5
Institutional age	< 5 years	235	59.5
	5–10 years	42	10.6
	> 10 years	118	29.9
Total		395	100.0

3.3 Measurement

All constructs were operationalized with multi-item scales using a five-point Likert response format ranging from 1 (strongly disagree) to 5 (strongly agree). Leadership commitment was measured with five items capturing strategic support, resource commitment, communication, monitoring, and involvement. Intellectual capital was measured with ten items representing human, structural, and relational resources. Collaborative capability was measured with five items addressing coordination, knowledge exchange, partner alignment, resource sharing, and joint problem solving. Competitive advantage was measured with five items reflecting stakeholder-valued quality, differentiation, responsiveness, innovation, and reputation. Private university performance was assessed with seven items covering major institutional outcomes.

The items were adapted to the private higher education context and reviewed for clarity. Confirmatory factor analysis (CFA) assessed the relationship between each item and its intended latent construct. Standardized loadings, construct reliability (CR), and average variance extracted (AVE) were used to evaluate reliability and convergent validity. A loading of at least .50, CR above .70, and AVE above .50 were treated as acceptable. Discriminant validity was evaluated by comparing the square root of each construct's AVE with its correlations with other constructs.

3.4 Data Analysis

The analysis was conducted in LISREL 8.80 using a two-step SEM procedure. The measurement model was estimated first to assess factor structure, reliability, convergent validity, and discriminant validity. The structural model was then estimated to test the nine hypotheses. Model adequacy was evaluated through multiple indices rather than a single statistic, including chi-square, the Root Mean Square Error Of Approximation (RMSEA), Normed Fit Index (NFI), Non-Normed Fit Index (NNFI), Comparative Fit Index (CFI), Incremental Fit Index (IFI), Relative Fit Index (RFI), Goodness-of-Fit Index (GFI), and Adjusted Goodness-of-Fit Index (AGFI).

Structural paths were interpreted using standardized estimates and t-values. A two-tailed critical value of $|1.96|$ at the .05 level was used to distinguish statistically significant from non-significant paths. Coefficients of determination (R^2) were reported for collaborative capability, competitive advantage, and performance to indicate the model's explanatory power. Because the original analysis did not provide bootstrapped confidence intervals for specific indirect effects, mediation is discussed as an indicated structural pathway rather than claimed as a formally tested causal effect.

4. Results and Discussions

4.1 Measurement Model

The retained indicators loaded adequately on their intended constructs, with standardized factor loadings exceeding .50. CR values ranged from .91 to .96, demonstrating strong internal consistency. AVE values ranged from .67 to .73, indicating that each construct explained substantially more than half of the variance in its indicators. The square root of each AVE exceeded the corresponding inter-construct correlations, supporting discriminant validity. Across the construct models, RMSEA values ranged from .00 to .02 and incremental fit indices were generally above .98, indicating acceptable to very good measurement fit.

These results show that leadership commitment, intellectual capital, collaborative capability, competitive advantage, and private university performance were empirically distinguishable despite their conceptual relationships. This distinction is important because the model assumes that strategic intent, resource stocks, transforming capability, strategic position, and realized performance represent different stages of the value-creation process.

The construct reliability and convergent validity results are reported in Table 3.

Table 3. Construct reliability and convergent validity

Construct	CR	AVE
Leadership commitment (LC)	0.93	0.73

Construct	CR	AVE
Intellectual capital (IC)	0.96	0.73
Collaborative capability (CC)	0.91	0.67
Competitive advantage (CA)	0.91	0.68
Private university performance (PUP)	0.95	0.71

4.2 Structural Model and Hypothesis Testing

The structural model demonstrated strong explanatory power. Leadership commitment and intellectual capital jointly explained 80% of the variance in collaborative capability. Leadership commitment, intellectual capital, and collaborative capability explained 84% of the variance in competitive advantage. Competitive advantage, leadership commitment, intellectual capital, and collaborative capability explained 88% of the variance in private university performance. The high R² values indicate that the proposed strategic-resource and capability variables account for a substantial proportion of differences in the endogenous constructs.

Five of the nine hypothesized direct relationships were statistically significant. Leadership commitment did not significantly predict collaborative capability ($\beta = .12$, $t = 1.77$) or competitive advantage ($\beta = .09$, $t = 1.41$), so H1 and H2 were not supported. Leadership commitment did have a positive direct effect on performance ($\beta = .13$, $t = 2.26$), supporting H3. Intellectual capital significantly predicted collaborative capability ($\beta = .79$, $t = 10.39$), competitive advantage ($\beta = .26$, $t = 2.68$), and performance ($\beta = .22$, $t = 2.34$), supporting H4, H5, and H6. Collaborative capability significantly predicted competitive advantage ($\beta = .60$, $t = 6.77$), supporting H7, but it did not directly predict performance ($\beta = -.05$, $t = -.51$), so H9 was not supported. Competitive advantage had the strongest positive direct effect on performance ($\beta = .68$, $t = 7.40$), supporting H8.

The standardized structural path estimates and hypothesis decisions are presented in Table 4.

Table 4. Structural path estimates and hypothesis decisions

Hyp.	Path	Outcome	Estimate	S.E.	t-value	Decision	R ²
H ₁	LC → CC	Collaborative capability	0.12	0.07	1.77	Not supported	0.80
H ₄	IC → CC	Collaborative capability	0.79	0.08	10.39	Supported	
H ₂	LC → CA	Competitive advantage	0.09	0.06	1.41	Not supported	0.84
H ₅	IC → CA	Competitive advantage	0.26	0.09	2.68	Supported	
H ₇	CC → CA	Competitive advantage	0.60	0.09	6.77	Supported	
H ₈	CA → PUP	Performance	0.68	0.09	7.40	Supported	0.88
H ₃	LC → PUP	Performance	0.13	0.06	2.26	Supported	
H ₆	IC → PUP	Performance	0.22	0.09	2.34	Supported	
H ₉	CC → PUP	Performance	-0.05	0.09	-0.51	Not supported	

4.3 Indicated Indirect Pathways

The pattern of coefficients indicates that collaborative capability contributes to performance primarily through competitive advantage. The direct CC → PUP path was close to zero and non-significant, whereas CC → CA and CA → PUP were both large and significant. This pattern suggests that collaboration becomes performance relevant when it creates a stakeholder-valued advantage, such as distinctive program quality, superior responsiveness, innovation, or reputation. It also cautions against evaluating collaboration only by the number of agreements, meetings, or joint activities.

Intellectual capital showed both direct and indicated indirect routes to performance. Its large association with collaborative capability, together with the subsequent CC → CA and CA → PUP paths, is consistent with a resource-conversion sequence. At the same time, the significant IC → PUP path indicates that knowledge resources can improve internal operations without necessarily passing through collaboration. Because the study did not estimate bootstrapped indirect-effect confidence

intervals, these patterns should be interpreted as theoretically coherent pathways that require formal mediation testing in future research.

4.4 Discussion

4.4.1 Leadership commitment: direct operational value but limited capability conversion

The non-significant effects of leadership commitment on collaborative capability and competitive advantage show that managerial commitment is not automatically transformed into organizational capability or strategic differentiation. In professional organizations, leaders may communicate priorities while implementation remains dispersed across faculties, units, and individual academics. Collaboration requires partner-management routines, incentives, information systems, and boundary-spanning roles; competitive advantage requires a coherent value proposition and cumulative reputation. Without these complementary arrangements, leadership support may be perceived as symbolic or episodic.

This result refines the generally positive expectations in higher education leadership research. Prior studies show that leadership can foster innovation and knowledge sharing ([Al-Husseini & Elbeltagi, 2016](#); [Al-Husseini et al., 2021](#)), but the present findings imply that the effect depends on institutionalization. Leadership commitment was nonetheless positively related to performance. Committed leaders may improve goal clarity, budget discipline, monitoring, service recovery, and internal accountability even before deeper collaborative or competitive capabilities mature. The finding therefore distinguishes the immediate operational contribution of leadership from its more demanding role in capability development.

4.4.2 Intellectual capital as the principal strategic antecedent

Intellectual capital was the most consistent antecedent in the model. Its strong effect on collaborative capability supports the view that partnerships depend on knowledge, systems, and relational readiness. Human capital gives an institution the expertise needed to contribute meaningfully to a partnership. Structural capital preserves knowledge, coordinates work, and reduces dependence on individual actors. Relational capital provides trust, access, and legitimacy. This result aligns with research showing that intellectual capital facilitates collaborative knowledge creation and network-based competitiveness ([Al-Omouh et al., 2022](#); [Shou et al., 2020](#); [Vătămănescu et al., 2016](#)).

The positive IC → CA relationship confirms that intangible assets contribute to differentiation. Universities with stronger academic expertise, more reliable processes, and better stakeholder networks can create value that is difficult to imitate. The result is compatible with studies linking intellectual capital to innovation and competitive advantage ([Agostini et al., 2017](#); [Obeidat et al., 2021](#); [Yaseen et al., 2016](#)). It also supports the argument that higher education intellectual-capital research should focus not only on disclosure but on strategic deployment ([Bisogno et al., 2018](#); [Secundo et al., 2018b](#)).

The significant direct relationship between intellectual capital and performance suggests that intangible resources also strengthen routine institutional delivery. Faculty capabilities can improve learning and research; digital and administrative systems can improve consistency and speed; and relational resources can improve student recruitment, employer engagement, and public trust. This broad effect is consistent with evidence that intellectual capital contributes to organizational performance across higher education and other knowledge-intensive settings ([Gogan et al., 2016](#); [Tjahjadi et al., 2019](#)).

4.4.3 Collaborative capability creates value through competitive advantage

Collaborative capability had a substantial positive effect on competitive advantage but no direct effect on performance. The result is theoretically meaningful because collaboration is an input and process, whereas performance is a realized outcome. Joint projects can consume managerial time and produce coordination costs before benefits emerge. They may also generate outputs that are academically interesting but not visible or valuable to students, employers, or regulators. The absence of a direct effect therefore does not mean that collaboration is unimportant; rather, it indicates that the quality

and strategic conversion of collaboration matter more than activity volume. The finding is consistent with university–industry research emphasizing partner fit, governance, communication, and continuity ([Bruneel et al., 2010](#); [Mascarenhas et al., 2018](#); [Rybnicek & Königgruber, 2019](#)). Partnerships are more likely to contribute when they improve curriculum relevance, research applicability, internships, technology access, service quality, or reputation. These are precisely the outcomes through which collaborative capability can become competitive advantage. The result also supports a dynamic-capability interpretation: collaboration recombines resources, while advantage reflects the successful market and stakeholder deployment of the new configuration.

Competitive advantage was the strongest predictor of performance. This indicates that PHEIs improve their outcomes when their resources and collaborations produce a clear, credible, and stakeholder-recognized superiority. The result is compatible with the role of reputation and legitimacy in sustaining higher education advantage ([Miotto, Del-Castillo-Feito, & Blanco-González, 2020](#)). It also complements prior evidence that student loyalty and competitiveness are connected to institutional activities that create perceived value ([Gunarto, Hurriyati, Disman, & Wibowo, 2018](#)). For managers, the implication is that every strategic initiative should specify the advantage it is expected to create and the performance indicator through which that advantage will be observed.

4.5 Theoretical Implications

The study contributes to RBV and dynamic-capabilities scholarship in four ways. First, it separates strategic inputs from resource-conversion processes. Leadership commitment and intellectual capital are not treated as interchangeable predictors; leadership represents managerial intent and support, while intellectual capital represents knowledge-based resource stocks. Their different empirical patterns show why resource and leadership variables should not be collapsed into a generic notion of organizational strength.

Second, collaborative capability is positioned as an intermediate transforming capability rather than as an automatic performance driver. This resolves an overly linear assumption in some collaboration research. The findings suggest that the performance relevance of collaboration is contingent on whether it generates competitive advantage. Such a sequence is consistent with dynamic-capability theory, in which reconfiguration matters because it changes the organization's strategic position ([Teece, 2018](#); [Schilke et al., 2018](#)).

Third, competitive advantage emerges as the proximal mechanism most closely connected to performance. This emphasizes that institutional resources create results only when translated into value recognized by relevant stakeholders. Fourth, the model extends intellectual-capital research in higher education by showing that intellectual capital functions both directly and through relational capability. It is not only a stock to be disclosed or measured but also an enabler of coordinated action and strategic positioning.

4.6 Practical Implications

The first managerial priority is to treat intellectual-capital development as an integrated institutional strategy. Human capital initiatives should include targeted recruitment, doctoral and professional development, mentoring, interdisciplinary teamwork, and retention pathways for scarce expertise. Structural capital initiatives should include documented processes, interoperable information systems, curriculum and research repositories, data governance, succession mechanisms, and routines for organizational learning. Relational capital should be managed through stakeholder maps, alumni engagement, employer advisory structures, government relations, and long-term partner portfolios rather than one-off contacts.

The second priority is to professionalize collaboration. PHEIs should establish clear criteria for partner selection, define reciprocal objectives, assign accountable coordinators, create milestones and joint indicators, and specify arrangements for data, intellectual property, resource sharing, and conflict resolution. Partnership performance should be reviewed not only for activity completion but also for learning, stakeholder value, and strategic relevance. Recognition systems should reward academics and staff for meaningful collaborative contributions, while workload allocation should provide the

time required to sustain partnerships. Regular communication mechanisms and periodic evaluation meetings should be implemented to strengthen coordination and ensure that collaborative activities remain aligned with institutional priorities. In addition, digital collaboration platforms can facilitate knowledge sharing, improve transparency, and enhance the efficiency of joint initiatives across partner organizations. Continuous capacity-building programs should also be provided to strengthen collaboration management, negotiation skills, and cross-institutional communication among academic and administrative staff. These initiatives collectively contribute to building trust, reinforcing long-term partnerships, and maximizing the strategic impact of collaborative activities on institutional performance.

Third, leaders should require an explicit line of sight from collaboration to competitive advantage and performance. Before approving a partnership, managers should ask which stakeholder problem it will solve, which capability it will strengthen, how it will differentiate the institution, and which outcome indicators will demonstrate value. A curriculum partnership, for example, should be connected to graduate employability or program distinctiveness; a research partnership should be connected to visibility, applied impact, or resource access; and a digital-service partnership should be connected to responsiveness, reach, or cost efficiency.

Finally, leadership commitment must be made tangible. Senior leaders should align budgets, policies, incentives, and monitoring with announced priorities. They should also model cross-unit collaboration, remove procedural bottlenecks, and follow up on partnership outcomes. The non-significant $LC \rightarrow CC$ and $LC \rightarrow CA$ paths imply that speeches and formal endorsements are insufficient unless they alter the routines through which people work and resources are deployed.

5. Conclusions

5.1 Conclusion

This study developed and tested an integrated performance model for private higher education institutions in Southern Sumatra, demonstrating that institutional resources become productive not through mere possession but through a staged conversion process involving collaborative capability and competitive advantage. Intellectual capital emerged as the most consistent and consequential antecedent in the model, exerting significant effects on collaborative capability, competitive advantage, and institutional performance simultaneously, which confirms that knowledge-based resources spanning human expertise, structural systems, and relational networks constitute the foundational layer upon which all subsequent strategic outcomes depend. Competitive advantage proved to be the strongest direct predictor of performance, reinforcing the argument that collaboration only translates into institutional gains when it produces differentiation that stakeholders can recognize and act upon rather than remaining at the level of formal agreements without measurable outputs. Leadership commitment, while contributing a significant direct effect on performance, did not automatically generate collaborative capability or competitive advantage, suggesting that its institutional influence is primarily channeled through internal operational coherence, accountability structures, and governance consistency rather than through direct strategic repositioning. Taken together, these results answer the study's central question by showing that the pathway from strategic resources to sustained performance in private universities runs through capability conversion and stakeholder-perceived value creation, not through resource accumulation alone.

The practical implications of these findings are most credible when anchored to the pathways that the data actually supported. For PHEIs operating under resource constraints outside major metropolitan centers, the sequencing logic that emerges from the model is strategically significant: strengthening intellectual capital across its human, structural, and relational dimensions creates the capability base without which neither productive collaboration nor meaningful differentiation is achievable; governing collaborative activity as a formally managed organizational competence rather than a collection of symbolic agreements converts that base into external value; and tracking competitive advantage through concrete stakeholder-referenced indicators ensures that strategic investments produce the recognition and institutional preference that drive long-term performance gains. Leadership attention is most productively directed toward building the governance infrastructure that

embeds strategic priorities into unit-level accountability systems and cross-functional coordination rather than toward partnership formation or positioning decisions that require deeper capability support to become effective. Institutions that pursue these priorities in deliberate sequence, rather than spreading limited resources across undifferentiated improvement efforts, are substantially better positioned to achieve durable performance outcomes in the increasingly competitive Indonesian private higher education landscape.

5.2 Research Limitations

Several limitations should guide interpretation. First, the cross-sectional design limits causal inference and cannot capture the time required for intellectual-capital investments and partnerships to influence performance. Second, the study relied on self-reported perceptions from leaders and managerial personnel. Although procedural safeguards and measurement diagnostics were used, common-method variance and socially desirable responses cannot be ruled out. Third, the sample was confined to PHEIs in LLDikti Region II, so the findings may not generalize to public universities, other Indonesian regions, or different national systems. Fourth, the available analysis reported direct structural paths but did not provide bootstrapped confidence intervals for specific indirect effects. Consequently, the proposed mediation patterns should be regarded as indicated rather than conclusively established. Finally, the model did not include environmental or institutional contingencies that may alter the strength of the relationships.

5.3 Suggestions and Directions for Future Research

Future studies should use longitudinal or panel designs to examine how leadership decisions, intellectual-capital development, collaboration, and advantage evolve over time. Multi-source data should combine managerial perceptions with faculty, student, employer, and partner assessments, as well as objective indicators such as accreditation outcomes, research productivity, graduate employment, student persistence, partnership revenue, and financial sustainability. Formal mediation analysis with bootstrapped indirect effects is needed to test the proposed resource-conversion sequence.

Comparative studies could examine whether the model differs across public and private institutions, regions, institutional sizes, accreditation levels, or countries. Environmental dynamism, digital maturity, governance quality, organizational culture, absorptive capacity, and partnership portfolio diversity are promising moderators. Future research should also disaggregate collaborative capability into partner selection, coordination, knowledge integration, and relational governance to identify which routines most strongly generate competitive advantage. Such extensions would deepen understanding of when intangible resources and collaboration produce sustainable higher education performance.

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Author Contributions

I.A.: conceptualization, methodology, investigation, data curation, formal analysis, and writing—original draft. I.A.A.: methodology, validation, supervision, and writing—review and editing. D.: formal analysis, validation, visualization, and writing—review and editing. A.R.P.B.: conceptualization, supervision, project administration, and writing—review and editing. F.N.: investigation, data curation, validation, and writing—review and editing. All authors read and approved the final manuscript.

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