

Leadership, Innovation Strategy, and Strategic Flexibility Toward Sustainable Competitive Advantage: The Mediating Role of Organizational Agility in Private Universities in Aceh Province

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Abstract

This study examines the influence of leadership, innovation strategy, and strategic flexibility on sustainable competitive advantage through organizational agility in private universities in Aceh Province, Indonesia. The research is motivated by the increasing challenges faced by higher education institutions in responding to digital transformation, institutional competition, and rapidly changing environmental conditions. Drawing upon the Resource-Based View (RBV) and Dynamic Capability Theory, this study proposes that organizational agility plays a critical role in translating strategic organizational capabilities into long-term competitive advantage. A quantitative explanatory research design was employed using a cross-sectional survey approach. Data were collected from 300 managerial-level respondents representing private universities in Aceh Province, including rectors, deans, heads of study programs, and institutional managers. The data were analyzed using Structural Equation Modeling–Partial Least Squares (SEM-PLS) with SmartPLS 4. The findings reveal that leadership, innovation strategy, and strategic flexibility positively and significantly influence organizational agility. In addition, leadership, innovation strategy, strategic flexibility, and organizational agility significantly affect sustainable competitive advantage. Among the antecedent variables, strategic flexibility demonstrates the strongest influence on organizational agility, while organizational agility significantly contributes to institutional competitiveness and sustainability. These findings confirm that adaptive organizational capability is essential for maintaining competitiveness in higher education institutions operating in dynamic and digitally disrupted environments. This study contributes to the strategic management literature by integrating leadership, innovation strategy, strategic flexibility, and organizational agility into a unified framework within the higher education context. Practically, the findings provide important implications for private university leaders in strengthening institutional adaptability, innovation capability, and sustainable competitiveness.

Keywords: *Leadership; Innovation Strategy; Strategic Flexibility; Organizational Agility; Sustainable Competitive Advantage.*

Introduction

The higher education sector is currently experiencing profound transformation driven by digital disruption, global competition, and rapidly changing stakeholder expectations. Universities are no longer viewed merely as institutions for teaching and knowledge dissemination, but as strategic organizations expected to create innovation, develop adaptive human capital, and contribute to regional and national competitiveness [1,2]. In the digital economy era, higher education institutions are increasingly required to demonstrate sustainable competitive advantage (SCA) through organizational adaptability, innovation capability, strategic responsiveness, and effective technology integration [3]. These challenges are particularly significant for private universities operating in emerging regions, where institutional resources and competitive pressures coexist simultaneously.

Globally, the acceleration of digital transformation has reshaped the operational landscape of higher education. The emergence of artificial intelligence, big data analytics, cloud-based learning systems, and educational technology ecosystems has transformed how universities manage academic services, research activities, and institutional governance [4,5]. Universities that successfully integrate digital capabilities into strategic management tend to achieve stronger institutional performance, greater operational flexibility, and improved responsiveness to environmental change [6]. Consequently, sustainable competitive advantage in higher education can no longer be achieved solely through traditional indicators such as academic reputation or physical infrastructure, but increasingly depends on organizational agility and strategic adaptability.

In Indonesia, the strategic role of private higher education institutions has become increasingly important due to their dominant contribution to national educational access. According to the Higher Education Database (PDDikti) in 2025, Indonesia has approximately 4,416 higher education institutions, of which 2,813 institutions, or nearly 63.7 percent, are private universities. This indicates that private universities are not peripheral actors, but rather constitute the backbone of the national higher education system. However, despite their numerical dominance, institutional quality disparities remain substantial. National accreditation data reveal that only a small proportion of universities have achieved

“excellent” accreditation status, while most institutions remain categorized as “good” or “fairly good.”

The situation becomes more critical in the regional context of Aceh Province. Based on PDDikti data in 2025, Aceh has approximately 70 private universities distributed across several districts and municipalities. Although these institutions play a crucial role in expanding educational accessibility, most still struggle to achieve higher institutional competitiveness and academic quality. Only around 16 percent of private universities in Aceh possess “very good” accreditation status, while the majority remain within the standard “good” category. This phenomenon indicates that many private universities in Aceh continue to face challenges related to institutional adaptability, strategic innovation, governance quality, and digital transformation readiness.

From the strategic management perspective, sustainable competitive advantage is no longer determined merely by resource ownership, but by the organization’s ability to dynamically reconfigure strategic capabilities in response to environmental uncertainty. Resource-Based View (RBV) theory emphasizes that competitive advantage originates from valuable, rare, inimitable, and non-substitutable resources [7]. However, in highly dynamic environments, Dynamic Capability Theory extends this argument by highlighting the importance of organizational responsiveness, adaptability, and agility [8]. In this context, leadership, innovation strategy, and strategic flexibility emerge as critical organizational determinants influencing institutional competitiveness.

Leadership plays an essential role in shaping organizational direction, fostering institutional transformation, and encouraging proactive adaptation toward environmental change [9]. In higher education institutions, leadership capability significantly affects strategic alignment, innovation orientation, and organizational responsiveness. Meanwhile, innovation strategy reflects the institution’s ability to develop and implement new approaches in academic services, curriculum design, governance systems, and stakeholder engagement [10]. Universities capable of strategically managing innovation are generally more successful in sustaining long-term competitiveness. Additionally, strategic flexibility represents the institution’s capability to adjust strategic priorities, redistribute

organizational resources, and respond effectively to uncertainty and technological disruption [11].

Nevertheless, these strategic capabilities may not directly generate sustainable competitive advantage unless they are translated into adaptive organizational behavior. Therefore, organizational agility becomes a critical mediating mechanism. Organizational agility refers to the institution's ability to sense environmental changes, respond rapidly, and continuously adapt organizational processes and strategic actions [12]. Agile universities are more capable of responding to changing student expectations, technological evolution, regulatory shifts, and global educational competition. In the context of private universities in Aceh, organizational agility may represent a decisive capability for institutional survival and long-term sustainability.

Furthermore, technology utilization is increasingly recognized as an important enabler of organizational competitiveness. The effective use of digital technologies can strengthen communication systems, accelerate decision-making processes, improve institutional coordination, and support strategic innovation implementation [13]. However, technology alone does not automatically create sustainable competitive advantage. Instead, technology utilization may strengthen the effectiveness of organizational agility in translating strategic capabilities into superior institutional performance [14]. Therefore, technology utilization is conceptualized in this study as a moderating variable that enhances the relationship between organizational agility and sustainable competitive advantage.

Despite the growing literature on leadership, innovation strategy, strategic flexibility, and organizational agility, previous studies have several limitations. First, most studies examine these variables separately and focus primarily on direct relationships with organizational performance. Second, organizational agility is often positioned merely as an outcome variable rather than as a central mediating mechanism linking strategic capabilities to sustainable competitive advantage [12]. Third, technology utilization has predominantly been treated as a direct determinant of organizational performance rather than as a contextual factor that strengthens strategic effectiveness [3]. These gaps indicate the absence of an integrative framework capable of explaining how strategic capabilities are

transformed into sustainable competitive advantage through organizational agility in higher education institutions.

Accordingly, this study proposes an integrative model examining the influence of leadership, innovation strategy, and strategic flexibility on sustainable competitive advantage through organizational agility, with technology utilization serving as a moderating variable. The novelty of this research lies in positioning organizational agility as the core mediating capability and technology utilization as a strategic enhancer rather than a direct performance driver. Additionally, this study contributes empirically by focusing on private universities in Aceh, an underexplored regional context facing substantial institutional competitiveness challenges in the digital transformation era. Through this approach, the study is expected to enrich the literature on strategic management and dynamic capabilities while providing practical insights for strengthening the competitiveness of private higher education institutions in developing regions.

2.Literature Review and Hypotheses Development

2.1 Resource-Based View and Dynamic Capability Perspective

The concept of sustainable competitive advantage (SCA) has become one of the central discussions in strategic management literature. Resource-Based View (RBV) explains that organizations achieve superior performance when they possess valuable, rare, inimitable, and non-substitutable resources [16]. However, in increasingly dynamic and digitally disrupted environments, organizational success is not determined solely by resource ownership, but also by the capability to continuously reconfigure and adapt those resources to environmental changes. Consequently, Dynamic Capability Theory extends RBV by emphasizing the organization's ability to integrate, build, and reconfigure internal and external competencies to address rapidly changing environments [17].

In the context of higher education institutions, particularly private universities, sustainable competitive advantage is closely associated with the institution's ability to adapt strategically to technological disruption, changing student expectations, and increasing competition among universities. Therefore, leadership capability, innovation strategy,

strategic flexibility, and organizational agility become essential strategic capabilities that determine institutional sustainability and competitiveness.

Organizational agility represents the institution's capability to sense environmental changes, respond rapidly, and continuously adapt organizational processes and strategies [11]. Agile organizations tend to be more responsive, innovative, and capable of maintaining competitiveness under uncertain conditions. In higher education institutions, agility enables universities to adapt curriculum design, academic services, technological systems, and governance structures more effectively.

Based on RBV and Dynamic Capability perspectives, this study proposes that leadership, innovation strategy, and strategic flexibility function as antecedents of organizational agility and sustainable competitive advantage.

2.2 Leadership and Organizational Agility

Leadership plays a critical role in shaping organizational direction, encouraging strategic adaptation, and fostering institutional transformation. Effective leaders are capable of creating organizational vision, mobilizing resources, and encouraging proactive responses toward environmental uncertainty [18]. In dynamic environments, leadership capability becomes increasingly important because organizations require rapid decision-making, strategic responsiveness, and adaptive behavior.

Dynamic managerial capability theory explains that managerial competencies significantly influence organizational strategic renewal and adaptability [18]. Leaders who possess strategic orientation and transformational capability tend to encourage experimentation, collaboration, and organizational learning, all of which contribute to agility development.

Previous studies have shown that leadership positively influences organizational agility. AlNuaimi et al. [10] found that leadership capability significantly enhances organizational responsiveness and adaptability during digital transformation processes. Similarly, Kane et al. [16] argued that agile organizations require leaders capable of fostering innovation culture and adaptive organizational behavior.

In private universities, leadership becomes highly important because institutional leaders determine how universities respond to educational disruption, digital transformation, and increasing academic competition. Universities led by adaptive and visionary leaders are more likely to develop agile organizational structures and faster strategic responses.

Therefore, the following hypothesis is proposed:

H1: Leadership positively affects organizational agility in private universities in Aceh Province.

2.3 Innovation Strategy and Organizational Agility

Innovation strategy refers to the organization's capability to design and implement new ideas, processes, services, and strategic approaches to create value and maintain competitiveness [17]. In higher education institutions, innovation strategy includes curriculum innovation, digital learning systems, academic service innovation, and governance transformation. Innovation-oriented organizations are generally more adaptive because innovation requires flexibility, responsiveness, and continuous organizational learning [18]. Organizations emphasizing innovation strategies tend to develop structures and processes that facilitate rapid adaptation and experimentation, which ultimately strengthens organizational agility.

Nambisan et al. [18] explained that digital innovation significantly changes organizational management processes and increases adaptive capability. Similarly, Zhang et al. [19] found that innovation capability contributes significantly to organizational agility in digitally transforming organizations. Within higher education institutions, innovation strategy enables universities to respond more effectively to technological changes, evolving student needs, and competitive educational environments. Universities capable of continuously innovating in academic and administrative processes are more likely to develop stronger organizational agility.

Thus, the following hypothesis is proposed:

H2: Innovation strategy positively affects organizational agility in private universities in Aceh Province.

2.4 Strategic Flexibility and Organizational Agility

Strategic flexibility refers to the organization's capability to respond and adapt to environmental uncertainty by reallocating resources, modifying strategies, and adjusting organizational priorities [11]. Flexible organizations are generally more capable of managing environmental turbulence because they can rapidly respond to external changes without experiencing excessive structural rigidity. Strategic flexibility is considered an important component of dynamic capability because it enables organizations to maintain adaptability under uncertain conditions [10]. Organizations possessing high strategic flexibility are better prepared to address market changes, technological disruption, and competitive pressures.

Previous studies have consistently demonstrated that strategic flexibility contributes positively to organizational adaptability and responsiveness. Warner and Wäger [17] argued that strategic flexibility facilitates continuous strategic renewal during digital transformation processes. Similarly, Roberts and Grover [20] found that flexibility in organizational resources and processes enhances agility capability. In the context of private universities, strategic flexibility allows institutions to rapidly adjust curriculum structures, governance systems, resource allocation, and technological adoption according to changing educational demands. Universities with greater strategic flexibility are therefore more capable of developing organizational agility.

Accordingly, the following hypothesis is proposed:

H3: Strategic flexibility positively affects organizational agility in private universities in Aceh Province.

2.5 Leadership and Sustainable Competitive Advantage

Leadership capability is widely recognized as a critical determinant of organizational competitiveness and long-term sustainability. Strategic leaders influence organizational vision, strategic alignment, resource mobilization, and institutional transformation [18]. Effective leadership contributes to the organization's ability to maintain relevance and competitiveness in dynamic environments. RBV suggests that leadership capability may become a strategic resource when it contributes to organizational uniqueness and superior performance [16]. Leaders who encourage innovation, organizational learning, and strategic responsiveness are more likely to create sustainable competitive advantage.

Helfat and Martin [18] emphasized that managerial capabilities strongly affect organizational strategic change and long-term competitiveness. Similarly, AlNuaimi et al. [10] found that leadership capability positively influences organizational performance and competitive sustainability in digitally transforming organizations. In private universities, leadership quality influences institutional reputation, academic innovation, stakeholder trust, and strategic positioning. Universities with strong leadership are generally more capable of sustaining competitive advantage under increasing educational competition. Therefore, the following hypothesis is proposed:

H4: Leadership positively affects sustainable competitive advantage in private universities in Aceh Province.

2.6 Innovation Strategy and Sustainable Competitive Advantage

Innovation strategy is considered one of the primary drivers of sustainable competitive advantage because innovation enables organizations to create differentiation and continuously generate value [17]. Organizations capable of implementing effective innovation strategies are more likely to maintain competitiveness in dynamic markets.

Teece [10] argued that innovation capability supports long-term competitiveness through continuous strategic renewal. Similarly, Porter [17] explained that competitive advantage is largely determined by the organization's ability to innovate more effectively than competitors.

In higher education institutions, innovation strategy may enhance institutional competitiveness through improved academic quality, digital learning systems, student services, and governance efficiency. Universities capable of continuously innovating are generally more successful in maintaining institutional relevance and attractiveness.

Hence, the following hypothesis is proposed:

H5: Innovation strategy positively affects sustainable competitive advantage in private universities in Aceh Province.

2.7 Strategic Flexibility and Sustainable Competitive Advantage

Strategic flexibility enables organizations to maintain competitiveness by rapidly adapting to environmental changes and uncertainties [11]. Flexible organizations are generally more resilient and capable of sustaining long-term performance under turbulent conditions. Strategic management literature suggests that strategic flexibility contributes positively to organizational sustainability because it facilitates adaptive strategic responses [10]. Flexible organizations can reconfigure resources, modify operational priorities, and respond effectively to market disruption. In higher education institutions, strategic flexibility allows universities to adapt academic programs, organizational structures, and digital systems according to evolving educational demands. Consequently, strategic flexibility may strengthen institutional competitiveness and sustainability.

Therefore, the following hypothesis is proposed:

H6: Strategic flexibility positively affects sustainable competitive advantage in private universities in Aceh Province.

2.8 Organizational Agility and Sustainable Competitive Advantage

Organizational agility is increasingly recognized as a critical capability for sustaining competitiveness in rapidly changing environments. Agile organizations possess the ability to sense opportunities, respond rapidly, and continuously adapt organizational processes and strategies [11].

Dynamic capability theory suggests that agility enables organizations to maintain competitiveness by continuously aligning organizational capabilities with environmental demands [17]. Tallon et al. [11] found that organizational agility significantly enhances organizational performance and competitive capability. Similarly, Zhang et al. [19] demonstrated that agile organizations tend to achieve superior adaptability and long-term competitiveness.

In the higher education sector, organizational agility enables universities to respond effectively to technological disruption, changing student preferences, and increasing educational competition. Agile universities are therefore more capable of maintaining institutional sustainability and competitive positioning.

Accordingly, the following hypothesis is proposed:

H7: Organizational agility positively affects sustainable competitive advantage in private universities in Aceh Province.

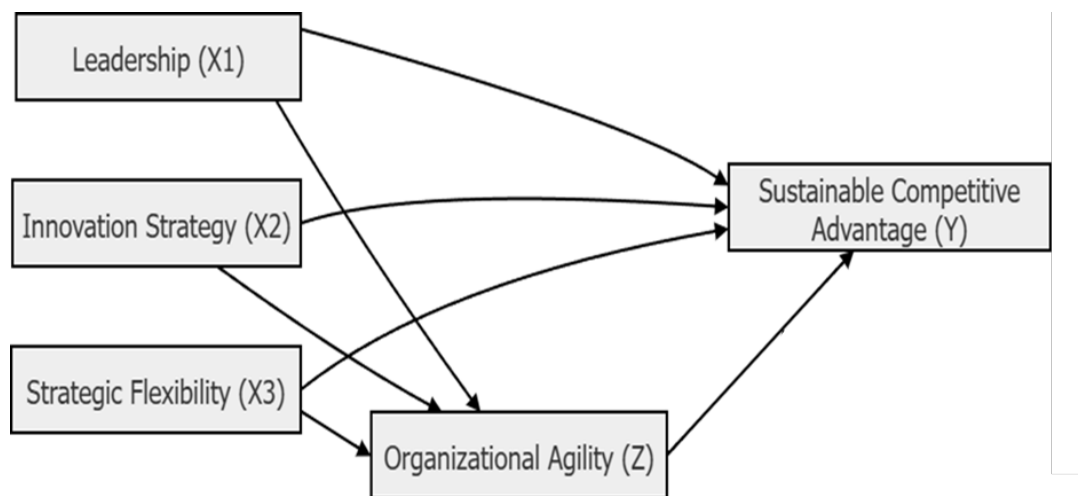


Figure 1. Research Framework.

Research Methods

3.1 Research Design

This study employs a quantitative explanatory research design aimed at examining the influence of leadership, innovation strategy, and strategic flexibility on sustainable competitive advantage through organizational agility in private universities in Aceh

Province. The research focuses on understanding the causal relationships among strategic management variables within the context of higher education institutions facing digital transformation and increasing competitive pressures.

A cross-sectional survey approach is utilized, where data are collected at a single point in time from respondents representing private higher education institutions in Aceh. This approach is considered appropriate because the study seeks to empirically test the proposed conceptual framework and evaluate the relationships among latent constructs simultaneously. The study applies Structural Equation Modeling–Partial Least Squares (SEM-PLS) using SmartPLS 4 as the primary analytical technique. SEM-PLS is selected because it is suitable for predictive and exploratory models involving multiple latent constructs, complex relationships, and relatively moderate sample sizes [1,2].

Furthermore, PLS-SEM is appropriate for this study because it allows simultaneous assessment of both the measurement model (outer model) and the structural model (inner model). The method is also considered robust for examining strategic management and organizational behavior models involving mediating relationships and multidimensional constructs [22].

3.2 Variable Operationalization and Indicators

All constructs and indicators used in this study are adapted from previously validated instruments in the strategic management, organizational agility, and higher education literature to ensure content validity and theoretical consistency. Each construct is measured using a five-point Likert scale ranging from 1 (“strongly disagree”) to 5 (“strongly agree”).

The leadership construct is adapted from the dynamic managerial capability perspective developed by Helfat and Martin [19] and supported by AlNuaimi et al. [15]. The construct reflects leadership capability in directing organizational transformation, encouraging innovation, facilitating strategic adaptation, and responding proactively to environmental change.

The innovation strategy construct is adapted from the strategic innovation framework proposed by Porter [17], Teece [8], and Nambisan et al. [18]. The indicators capture the university’s capability to develop innovative academic services, implement digital transformation initiatives, encourage institutional innovation, and continuously improve organizational processes.

Strategic flexibility is adapted from Sanchez [19] and Warner and Wäger [8], emphasizing the institution’s ability to rapidly adjust strategies, reallocate organizational resources, and respond effectively to uncertainty and environmental turbulence.

The organizational agility construct is adapted from Tallon et al. [19] and Zhang et al. [19]. The construct measures the institution’s ability to sense environmental change,

respond rapidly to external challenges, adapt organizational processes, and maintain strategic responsiveness.

Meanwhile, the sustainable competitive advantage construct is adapted from Barney [7] and Teece [8], focusing on the institution's capability to maintain long-term competitiveness, institutional differentiation, academic sustainability, and superior organizational performance compared to competitors.

The operationalization of variables and indicators is summarized in Table 3.1.

Table 1. Variable Operationalization

Variable	Dimensions/Indicators	Sources
Leadership	Strategic vision, transformational capability, adaptive decision-making, organizational direction, innovation encouragement	Helfat & Martin (2015); AlNuaimi et al. (2022)
Innovation Strategy	Academic innovation, digital innovation, service improvement, process innovation, strategic renewal	Porter (1985); Teece (2018); Nambisan et al. (2017)
Strategic Flexibility	Resource reallocation, strategic adaptation, environmental responsiveness, policy adjustment, operational flexibility	Sanchez (1995); Warner & Wäger (2019)
Organizational Agility	Responsiveness, adaptability, rapid decision-making, environmental sensing, operational agility	Tallon et al. (2019); Zhang et al. (2022)
Sustainable Competitive Advantage	Institutional competitiveness, long-term sustainability, organizational uniqueness, academic superiority, strategic performance	Barney (1991); Teece (2018)

3.3 Data Collection and Analysis

Data for this study will be collected through an online questionnaire distributed to leaders and managerial representatives of private universities in Aceh Province, including rectors, vice rectors, deans, department heads, and administrative managers. These respondents are selected because they are considered to possess adequate knowledge regarding institutional strategy, organizational capability, and competitive positioning. The study employs purposive sampling, where respondents are selected based on specific criteria, namely individuals who have managerial involvement in strategic decision-making and institutional development processes. The targeted sample size is a minimum of 150 respondents, which is considered adequate for PLS-SEM analysis and consistent with the recommendations of Hair et al. [21].

The collected data e analyzed using SmartPLS 4 software. The analysis consists of two major stages: evaluation of the measurement model (outer model) and evaluation of the structural model (inner model). The outer model assessment aims to evaluate the validity and reliability of the constructs. Convergent validity will be examined using factor loadings and Average Variance Extracted (AVE). Indicator loading values above 0.70 are considered acceptable, while AVE values should exceed 0.50 to confirm adequate convergent validity [22]. Reliability will be assessed using Composite Reliability (CR) and Cronbach's Alpha (CA), where values above 0.70 indicate satisfactory internal consistency [23]. The structural model evaluation will examine the relationships among latent variables using path coefficients, t-statistics, and p-values generated through bootstrapping procedures. The coefficient of determination (R^2) will also be assessed to determine the explanatory power of the model. Predictive relevance (Q^2) and effect size (f^2) will additionally be examined to evaluate model robustness and predictive capability [24].

Results and Discussion

4.1 Respondent Profiles

Respondent profiles are presented to provide an overview of the demographic and institutional characteristics of participants involved in this study. This information is important to understand the empirical context of the research and evaluate the representativeness of respondents in explaining the phenomenon of sustainable competitive advantage in private universities in Aceh Province.

Table 2. Respondent Profiles

Profile	Frequency	Percent
1. Your Position		
Dean / Director	19	6.3
Head of Unit / Head of Institution	106	35.3
Head of Internal Quality Audit	12	4
Head of SPMI	19	6.3
Head of BPM	22	7.3
Head of Study Program	36	12
Rector / Chair	22	7.3
Secretary	18	6
Vice Dean / Deputy Director	22	7.3
Vice Rector / Deputy Chair	24	8
Total	300	100
2. Length of Service at This Institution	Frequency	Percent
< 3 years	58	19.3

> 15 years	32	10.7
11 – 15 years	59	19.7
11 – 15 years, > 15 years	21	7
3 – 5 years	64	21.3
6 – 10 years	66	22
Total	300	100
3. Type of Higher Education	Frequency	Percent
Academy	69	23
Polytechnic	37	12.3
College	120	40
University	74	24.7
Total	300	100
4. Institutional Accreditation Status	Frequency	Percent
Good	134	44.7
Very Good	107	35.7
Accredited (A/B/C)	59	19.7
Total	300	100
5. Number of Active Students	Frequency	Percent
< 1,000 students	175	58.3
1,000 – 3,000 students	52	17.3
3,001 – 5,000 students	49	16.3
5,001 – 10,000 students	24	8
Total	300	100
6. Level of Digital System Implementation in Institutions	Frequency	Percent
Low	59	19.7
Very low (manual)	28	9.3
Very high	25	8.3
Medium	137	45.7
High	51	17
Total	300	100
7. Experience in Strategic Decision-Making	Frequency	Percent
Somewhat involved	92	30.7
Rarely involved	33	11
Very actively involved	53	17.7
Frequently involved	103	34.3
Not involved	19	6.3
Total	300	100

The respondent profile indicates that the majority of participants occupy strategic managerial positions within their institutions, particularly as heads of units or institutional leaders. This suggests that respondents possess sufficient understanding regarding institutional strategic management and organizational competitiveness. Most respondents also have more than five years of working experience, indicating adequate organizational familiarity and decision-making exposure.

In terms of institutional characteristics, colleges and universities dominate the sample distribution. Most institutions possess “Good” and “Very Good” accreditation status, indicating moderate institutional competitiveness among private universities in Aceh. Additionally, the majority of institutions have fewer than 1,000 active students, reflecting the relatively small institutional scale of private universities in the region. Regarding digital implementation, most respondents reported a moderate level of digital system adoption, indicating that many private universities are still in the transitional stage of digital transformation. This finding aligns with previous studies emphasizing that higher education institutions in developing regions often experience uneven digital transformation readiness [1,2].

4.2 Validity and Reliability Testing

The measurement model evaluation was conducted to examine the validity and reliability of the constructs used in this study. The assessment includes Cronbach’s Alpha, Composite Reliability (ρ_a and ρ_c), and Average Variance Extracted (AVE). According to Hair et al. [22], Cronbach’s Alpha and Composite Reliability values above 0.70 indicate satisfactory reliability, while AVE values above 0.50 confirm adequate convergent validity.

Table 3. Validity and Reliability Test

Variable	Cronbach's Alpha	Composite Reliability (rho_a)	Composite Reliability (rho_c)	AVE
Innovation Strategy	0.733	0.755	0.835	0.563
Leadership	0.840	0.849	0.893	0.677
Organizational Agility	0.727	0.745	0.847	0.651
Strategic Flexibility	0.800	0.844	0.870	0.631
Sustainable Competitive Advantage	0.874	0.876	0.914	0.726

Source: Primary Data Processed, 2026.

The results indicate that all variables satisfy the recommended thresholds for reliability and validity. Leadership and Sustainable Competitive Advantage demonstrate particularly strong reliability values, suggesting high internal consistency among indicators. Furthermore, all AVE values exceed 0.50, confirming that each construct adequately explains the variance of its indicators. These findings indicate that the measurement model is statistically robust and suitable for structural model analysis [3,4].

4.3 Hypothesis Testing

The structural model analysis was conducted using SmartPLS 4 to examine the direct relationships among leadership, innovation strategy, strategic flexibility, organizational agility, and sustainable competitive advantage. Bootstrapping procedures were applied to evaluate the significance of path coefficients.

Table 4. Hypothesis Testing Results

Relationship	Original Sample (O)	T Statistics	P Values	Result
Innovation Strategy → Organizational Agility	0.332	3.825	0.000	Supported
Innovation Strategy → Sustainable Competitive Advantage	0.301	3.745	0.000	Supported
Leadership → Organizational Agility	0.199	2.137	0.033	Supported
Leadership → Sustainable Competitive Advantage	0.206	2.896	0.004	Supported

Organizational Agility → Sustainable Competitive Advantage	0.311	4.628	0.000	Supported
Strategic Flexibility → Organizational Agility	0.339	4.553	0.000	Supported
Strategic Flexibility → Sustainable Competitive Advantage	0.117	1.990	0.047	Supported

Source: Primary Data Processed, 2026.

The findings reveal that innovation strategy significantly influences organizational agility ($\beta = 0.332$, $p < 0.001$). This suggests that universities capable of implementing innovative academic and managerial strategies tend to develop stronger organizational responsiveness and adaptability. This finding supports the argument of Nambisan et al. [18] that innovation capability strengthens organizational adaptability in digitally transforming environments. Leadership also demonstrates a positive and significant effect on organizational agility ($\beta = 0.199$, $p = 0.033$). This finding indicates that institutional leaders play an important role in fostering adaptive organizational behavior and strategic responsiveness. The result is consistent with the dynamic managerial capability perspective proposed by Helfat and Martin [12].

Similarly, strategic flexibility shows the strongest effect on organizational agility ($\beta = 0.339$, $p < 0.001$). This indicates that universities capable of rapidly adjusting strategies and reallocating organizational resources are more likely to become agile institutions. The finding supports previous research emphasizing flexibility as a key component of dynamic capability [8].

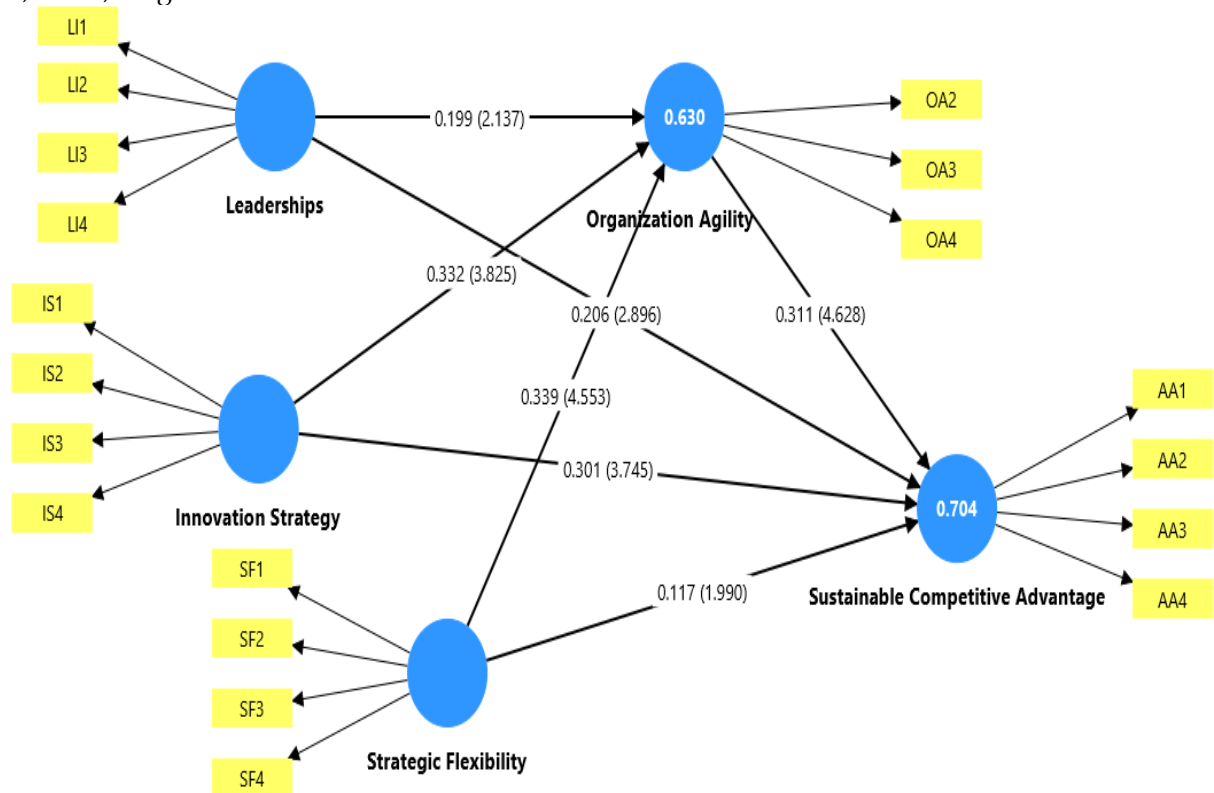


Figure 2. Structural Model

Regarding sustainable competitive advantage, innovation strategy significantly influences institutional competitiveness ($\beta = 0.301$, $p < 0.001$). Universities that continuously innovate in academic services and governance systems tend to maintain stronger institutional competitiveness [7]. Leadership also positively affects sustainable competitive advantage ($\beta = 0.206$, $p = 0.004$). This finding suggests that effective institutional leadership contributes to long-term organizational sustainability and strategic positioning [12]. Organizational agility demonstrates a strong positive effect on sustainable competitive advantage ($\beta = 0.311$, $p < 0.001$), indicating that agile universities are more capable of maintaining competitiveness under rapidly changing environmental conditions. This result aligns with Tallon et al. [12], who argued that agility enhances organizational adaptability and superior performance.

Lastly, strategic flexibility positively affects sustainable competitive advantage ($\beta = 0.117$, $p = 0.047$), although the relationship is relatively weaker compared to other variables.

Nevertheless, the finding confirms that strategic adaptability contributes to institutional sustainability and competitiveness [8].

Conclusion

This study aimed to examine the influence of leadership, innovation strategy, and strategic flexibility on sustainable competitive advantage through organizational agility among private universities in Aceh Province. The findings demonstrate that all proposed direct hypotheses are statistically supported. First, leadership positively influences both organizational agility and sustainable competitive advantage. This indicates that institutional leaders play an important role in shaping adaptive organizational behavior and strengthening institutional competitiveness. Second, innovation strategy significantly enhances organizational agility and sustainable competitive advantage, suggesting that innovation capability is essential for maintaining institutional relevance in the digital transformation era. Third, strategic flexibility significantly influences organizational agility and sustainable competitive advantage. Universities capable of rapidly adjusting strategic priorities and organizational resources are more adaptable and competitive under uncertain environmental conditions. Finally, organizational agility significantly contributes to sustainable competitive advantage, confirming that agility represents a critical dynamic capability for higher education institutions facing increasing competition and technological disruption.

The findings support the Resource-Based View and Dynamic Capability perspectives, emphasizing that organizational competitiveness depends not only on resource ownership but also on the institution's ability to adapt, innovate, and respond strategically to environmental change [10,11]. The findings of this study provide several important managerial implications for leaders of private universities in Aceh Province. First, institutional leaders should strengthen adaptive and transformational leadership practices to encourage organizational responsiveness and strategic renewal. Leadership development programs should therefore focus on strategic thinking, innovation orientation, and digital transformation capability.

Second, universities should prioritize innovation strategies by continuously improving academic services, digital learning systems, and institutional governance. Innovation should not be limited to technological adoption but should also include organizational processes and stakeholder engagement mechanisms. Third, institutions need to improve strategic flexibility by developing adaptive governance systems, flexible resource allocation mechanisms, and responsive decision-making structures. Flexible institutions are more capable of responding to educational disruption and competitive pressures. Lastly, universities should strengthen organizational agility as a core strategic capability. Agile institutions are more capable of responding rapidly to environmental change, technological development, and evolving stakeholder expectations, thereby improving long-term institutional sustainability and competitiveness.

Several limitations should be acknowledged in this study. First, the research applies a cross-sectional design, which limits the ability to examine causal relationships over time. Future studies may employ longitudinal approaches to observe how organizational agility and competitive advantage evolve dynamically. Second, the study focuses exclusively on private universities in Aceh Province, which may limit the generalizability of findings to other regions or educational contexts. Future research should consider broader geographical coverage and comparative institutional analysis. Third, this study only examines direct relationships among variables. Future research may extend the model by incorporating mediating and moderating variables such as technology utilization, digital capability, organizational culture, or environmental uncertainty to provide a more comprehensive understanding of sustainable competitive advantage in higher education institutions.

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