

Human Resource Ambidexterity and Sustainable Performance: Mediating HR-Based Quality Assurance and Moderating External Environment

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ABSTRACT

Purpose - This study examines how human resource ambidexterity contributes to sustainable performance in private higher education institutions. Despite increasing environmental pressures, limited research has clarified the mechanism through which ambidexterity is transformed into sustainable performance, particularly through HR-based quality assurance systems and the role of the external environment.

Design/methodology/approach – A quantitative explanatory approach was employed using data from 95 private universities under LLDIKTI Region I. Data were collected through structured questionnaires and analyzed using Structural Equation Modeling–Partial Least Squares (SEM-PLS) with bootstrapping procedures to test direct, mediating, and moderating relationships.

Findings - The results indicate that human resource ambidexterity significantly influences HR-based quality assurance ($\beta = 0.243$; $p = 0.013$) and sustainable performance ($\beta = 0.258$; $p = 0.018$). HR-based quality assurance has a strong positive effect on sustainable performance ($\beta = 0.370$; $p < 0.001$) and partially mediates the relationship ($\beta = 0.090$; $p = 0.043$). The external environment negatively moderates the relationship ($\beta = -0.215$; $p = 0.023$), suggesting reduced effectiveness of ambidexterity under high environmental uncertainty.

Originality/value - This study extends ambidexterity theory by integrating HR-based quality assurance as a key mediating mechanism and highlighting the contingent role of the external environment. The findings emphasize that sustainable performance in private higher education depends more on internal HR capability alignment than external pressures, providing practical insights for strengthening quality assurance systems.

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1. Introduction

Private universities are increasingly required to achieve sustainable performance that relies on human resource capabilities as the main drivers of academic processes, governance, and institutional quality assurance. From a human resource management perspective, the sustainable performance of higher education is understood as the result of alignment between the competencies of lecturers and educational staff, strategic HR systems, and institutionalized quality assurance mechanisms. Recent HRM literature emphasizes that the quality of higher education institutions cannot be separated from the organization's ability to manage HR behavior, performance, and involvement in a systemic and adaptive manner.

The phenomenon of this research problem is reflected in the accreditation data of private universities and study programs in the LLDIKTI Region I area as shown in the Table, which shows the dominance of accreditation status in the Good and Very Good categories and the very limited achievement of Excellent accreditation.

Table 1. Akreditasi Private Universities

Akreditasi Perguruan Tinggi Swasta dan Program Studi di LLDIKTI WILAYAH 1								
Status Akreditasi	A	B	C	Unggul	Baik Sekali	Baik	Tidak Terakreditasi	Total
Perguruan Tinggi	0	16	0	10	26	132	3	187
Program Studi (BAN PT)	0	110	1	73	299	449	6	938
Program Studi (LAM)	2	0	1	22	149	95	0	269

This pattern indicates that most private universities have been able to meet minimum quality standards, but have not yet succeeded in implementing sustainable quality improvement based on strengthening internal human resource capabilities. From an HRM perspective, this condition reflects the institution's limitations in developing lecturers and educational staff with exploratory capabilities, such as learning innovation, research development, and external collaboration, as well as exploitative capabilities such as consistent performance, adherence to quality standards, and effective academic administration. This imbalance between exploration and exploitation indicates a low level of human resource ambidexterity, which directly impacts the weak effectiveness of the internal quality assurance system and the stagnation of accreditation achievements. Furthermore, low learning agility, a weak HR-based performance evaluation system, and minimal involvement of lecturers and educational staff in the quality assurance process reinforce that accreditation problems are rooted in less than strategic and integrated HR management practices.

The state of the art of HRM studies shows that human resources have shifted from being merely an operational support factor to a strategic asset that determines the sustainable excellence of an organization, including in the context of higher education. Recent research confirms that ambidexterity at both the individual and HR system levels enables organizations to maintain efficiency while simultaneously driving innovation in dynamic environments. Studies in higher education also show that strategic HR practices that emphasize competency development, HR engagement, and quality-based performance management contribute

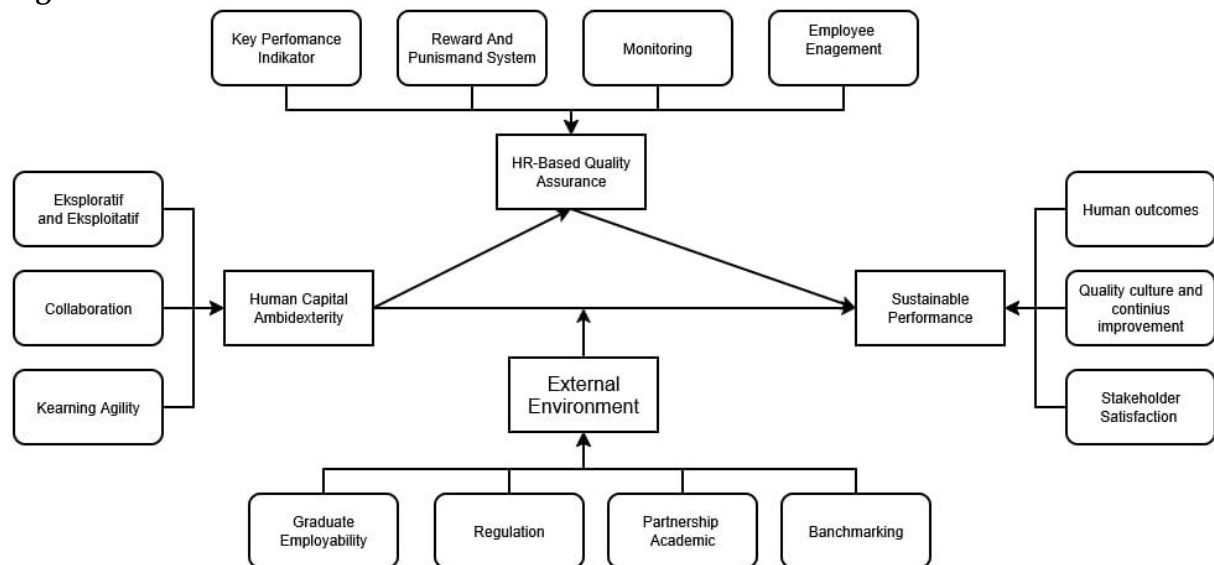
significantly to the effectiveness of quality assurance systems and institutional performance. However, literature that explicitly examines HR-based quality assurance as a mechanism for transforming human resource ambidexterity towards sustainable performance in private universities is still very limited.

Based on this gap, the novelty of this research lies in strengthening the HRM perspective in the study of ambidexterity and quality assurance in higher education. Theoretically, this research expands the theory of ambidexterity by positioning lecturers and educational staff as the primary actors in the exploration and exploitation of quality, mediated by an HR-based quality assurance system. Conceptually, this study integrates human resource ambidexterity, HR-based quality assurance practices, and sustainable performance into one integrated framework, by including the external environment as a context that influences the effectiveness of strategic HR practices in private universities.

The urgency of this research is further heightened given that the low achievement of superior accreditation in private universities directly impacts lecturer motivation and performance, the professionalism of educational staff, the institution's reputation, and the competitiveness of graduates in the job market. The inability of institutions to manage human resources ambidextrously has the potential to create quality stagnation and hinder the long-term sustainability of higher education organizations. Therefore, a study that places human resources as the core of quality improvement and accreditation strategies is very urgent in the context of private higher education reform.

In line with this urgency, the purpose of this study is to analyze the influence of human resource ambidexterity on the implementation of HR-based quality assurance in private universities. This study also aims to examine the role of HR-based quality assurance in transforming the capabilities of lecturers and educational staff into sustainable institutional performance. Furthermore, this study aims to examine the role of the external environment in influencing the strength of the relationship between human resource ambidexterity and sustainable performance in private universities.

Figure 1. Research Construct



As a problem-solving strategy, this study proposes strengthening human resource ambidexterity through developing exploratory and exploitative competencies of lecturers and educational staff in line with accreditation standards. Revitalizing HR-based quality assurance

is carried out by aligning performance evaluation systems, competency development, and institutional quality-based rewards and punishments to encourage active human resource involvement in a culture of quality. Optimizing the external environment through benchmarking, academic partnerships, and regulatory adaptation is expected to strengthen strategic HR practices and encourage the sustainable performance of private universities consistently and sustainably.

Unlike public universities, private higher education institutions (HEIs) operate under stronger financial constraints, higher market competition, and greater dependence on student enrollment for sustainability. This condition makes sustainable performance a critical challenge, particularly in maintaining accreditation quality and institutional reputation.

LLDIKTI Region I (North Sumatra) represents a highly relevant empirical setting, as it reflects a typical landscape of developing higher education systems characterized by uneven accreditation outcomes, resource limitations, and increasing regulatory pressure. The dominance of “Good” and “Very Good” accreditation categories, with limited achievement of “Excellent” status, indicates a systemic challenge in transforming internal capabilities into sustained institutional quality.

Thus, this context provides a representative proxy for broader challenges faced by private HEIs in emerging economies, making it a suitable setting for examining the role of HR ambidexterity and quality assurance.

2. Literature Review & Hypothesis Development

Higher Education Institutions (HEIs) differ fundamentally from corporate organizations due to their nature as *loosely coupled systems*, where academic units, faculties, and administrative structures operate with a high degree of autonomy while remaining institutionally interconnected. Unlike corporate organizations that rely on centralized control and performance alignment, HEIs must simultaneously accommodate academic freedom, decentralized decision-making, and institutional accountability. This structural complexity creates inherent tensions between exploration (e.g., research innovation, curriculum development) and exploitation (e.g., accreditation compliance, standardized teaching processes). As a result, the application of corporate ambidexterity models in HEIs is not directly transferable. In higher education, ambidexterity requires institutional mechanisms that can align decentralized human resource behaviors with standardized quality expectations. Therefore, HR-based quality assurance emerges as a critical mediating system, ensuring that exploratory and exploitative HR capabilities are translated into consistent institutional performance outcomes.

2.1. Human Resource Ambidexterity

Human resource ambidexterity refers to the organization’s ability to simultaneously pursue exploration (innovation, learning, experimentation) and exploitation (efficiency, standardization, and control) in managing human resources. Within the perspective of Strategic Human Resource Management, ambidexterity is considered a critical dynamic capability that enables organizations to remain adaptive while maintaining operational stability.

Prior studies demonstrate that ambidextrous HR practices enhance both innovation outcomes and operational performance. For example, exploration-oriented HR practices (e.g., training, knowledge sharing) foster creativity, while exploitation-oriented practices (e.g., performance evaluation, standardization) ensure consistency and quality. In higher education,

ambidexterity becomes particularly important as institutions must balance academic innovation with compliance to accreditation standards.

However, empirical evidence also suggests that ambidexterity alone does not automatically translate into organizational performance. Its effectiveness depends on the presence of internal systems that can institutionalize these capabilities into structured practices. This indicates that ambidexterity requires a transformational mechanism to produce sustainable outcomes.

2.2. HR-Based Quality Assurance

HR-based quality assurance refers to the integration of human resource practices—such as performance appraisal, competency development, and quality-oriented culture—into institutional quality assurance systems. From the perspective of Quality Management, quality assurance is not merely a procedural system but a behavioral and organizational process driven by human resources.

In higher education, quality assurance systems play a central role in ensuring teaching effectiveness, research productivity, and institutional accountability. Empirical studies show that HR-driven quality systems significantly improve institutional performance by aligning individual competencies with organizational quality standards.

Importantly, HR-based quality assurance acts as a linking mechanism that transforms individual capabilities into collective organizational outcomes. This aligns with the Resource-Based View, which emphasizes that organizational performance depends on how internal resources are structured and utilized.

Despite its importance, limited research has explicitly positioned HR-based quality assurance as a mediator between ambidexterity and sustainable performance, particularly in the context of private higher education. This gap highlights the need for further empirical investigation.

2.3. Sustainable Performance

Sustainable performance refers to an organization's ability to achieve long-term outcomes by balancing economic, social, and institutional objectives. In higher education, sustainable performance includes consistent academic quality, institutional reputation, stakeholder satisfaction, and long-term competitiveness.

From the lens of Dynamic Capability Theory, sustainable performance is driven by the organization's ability to continuously reconfigure internal resources in response to environmental changes. HR capabilities, particularly ambidexterity, are seen as key drivers of such adaptability.

Empirical evidence suggests that organizations with strong HR systems and adaptive capabilities tend to achieve more stable and sustainable performance. However, the relationship between HR capabilities and sustainable performance is often indirect and mediated by organizational processes such as quality management systems.

2.4. The Moderating Role of External Environment

The external environment includes factors such as regulatory changes, competition, and technological dynamics. Within the framework of contingency theory, organizational performance is determined by the alignment between internal capabilities and external conditions.

Studies indicate that environmental dynamism can both strengthen and weaken the effectiveness of ambidexterity. In stable environments, ambidexterity tends to enhance performance. However, in highly uncertain environments, excessive external pressure may disrupt the balance between exploration and exploitation, reducing organizational effectiveness.

This perspective suggests that the relationship between ambidexterity and sustainable performance is context-dependent, reinforcing the importance of examining the moderating role of the external environment.

2.5. Research Gap and Hypothesis Development

Although previous studies have examined ambidexterity, HR practices, and performance, three key gaps remain:

1. Mechanism Gap
Limited studies explain how ambidexterity is transformed into sustainable performance through internal systems, particularly HR-based quality assurance.
2. Integration Gap
Existing research tends to examine ambidexterity, quality management, and performance separately rather than integrating them into a single framework.
3. Contextual Gap
The moderating role of the external environment in higher education, especially in private institutions, remains underexplored.

To address these gaps, this study proposes an integrated model linking ambidexterity, HR-based quality assurance, sustainable performance, and the external environment.

Table 2. Research Gap Mapping (2022–2025)

Study	Context	Focus	Limitation	Gap Addressed in This Study
Jyoti & Choudhary (2024)	Corporate	HR ambidexterity → performance	No institutional mechanism	Adds HR-based QA as mediator
Joseph et al. (2023)	General HRM	Individual ambidexterity	No HEI context	Applies to higher education system
García-Hurtado et al. (2024)	Universities	Ambidextrous universities	No HR system integration	Integrates HR system + QA
Nastase et al. (2025)	HRM digital	Strategic HRM	No QA linkage	Links HR → QA → performance
Johnston et al. (2025)	HEIs	Knowledge ambidexterity	No sustainability model	Adds sustainable performance

2.6. Hypothesis Development

Based on the theoretical and empirical review, the following hypotheses are proposed:

H1: Human resource ambidexterity positively affects HR-based quality assurance.

H2: Human resource ambidexterity positively affects sustainable performance.

H3: HR-based quality assurance positively affects sustainable performance.

H4: HR-based quality assurance mediates the relationship between human resource ambidexterity and sustainable performance.

H5: The external environment moderates the relationship between human resource ambidexterity and sustainable performance.

3. Methodology

3.1. Research Design

This study adopts a quantitative explanatory research design to examine the causal relationships between human resource ambidexterity, HR-based quality assurance, external environment, and sustainable performance in private higher education institutions. The

design is appropriate for testing complex structural relationships involving mediation and moderation effects. Data were collected using a cross-sectional survey approach through structured questionnaires administered to institutional representatives.

3.2. Population, Sampling, and Data Collection

The population of this study consists of all private higher education institutions under LLDIKTI Region I (North Sumatra), Indonesia. This region represents a dynamic higher education environment characterized by varying levels of institutional quality and accreditation performance. A purposive sampling technique was employed to ensure the relevance of the sample to the research objectives. The selection criteria focused on institutions with “Excellent” or “A” accreditation status, as these institutions are considered to have relatively established governance systems and quality assurance practices. Based on these criteria, a total of 95 institutions were selected as the unit of analysis.

Data were collected from institutional leaders and quality assurance managers, as they possess comprehensive knowledge of HR practices and institutional performance. The use of key informants ensures the accuracy and strategic relevance of the data collected. The response rate was within an acceptable range for organizational-level research, and a comparison between early and late responses indicated no significant differences across key variables, suggesting that non-response bias is unlikely to affect the findings. Therefore, the sample is considered sufficiently representative of private higher education institutions in LLDIKTI Region I.

3.3. Measurement of Variables and Instrument Development

All constructs were measured using multi-item scales adapted from prior validated studies in human resource management and higher education literature. The questionnaire employed a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Human Resource Ambidexterity was measured through indicators capturing both exploratory capabilities (e.g., innovation, learning, experimentation) and exploitative capabilities (e.g., efficiency, standardization, performance consistency). HR-Based Quality Assurance was operationalized through indicators related to performance evaluation systems, competency development, and quality-oriented organizational culture.

Sustainable Performance was measured using indicators reflecting long-term institutional outcomes, including academic quality, stakeholder satisfaction, and institutional competitiveness. The External Environment construct was conceptualized as environmental dynamism and measured using indicators capturing regulatory changes, competitive intensity, and technological shifts. All measurement items were reviewed by experts in higher education management to ensure content validity and contextual relevance.

3.4. Data Analysis Technique

Data analysis was conducted using Partial Least Squares Structural Equation Modeling (PLS-SEM) with the assistance of SmartPLS. This method was selected for several reasons:

- (1) its suitability for complex models involving mediation and moderation,
- (2) its robustness with relatively small sample sizes, and
- (3) its prediction-oriented nature, which aligns with the objectives of this study.

Bootstrapping procedures with 5,000 subsamples were applied to assess the significance of path coefficients, indirect effects, and moderating effects.

3.5. Measurement Model Evaluation (Validity and Reliability)

The measurement model was evaluated to ensure the reliability and validity of all constructs. Indicator reliability was assessed through outer loadings, with all items exceeding the

recommended threshold of 0.70, indicating satisfactory item reliability. Internal consistency reliability was evaluated using Cronbach’s Alpha and Composite Reliability (CR). All constructs demonstrated values above 0.70, indicating strong internal consistency. Convergent validity was assessed using Average Variance Extracted (AVE), with all constructs achieving AVE values above 0.50, confirming that the latent variables explain a substantial portion of indicator variance.

Discriminant validity was examined using both the Fornell–Larcker criterion and the Heterotrait-Monotrait ratio (HTMT). All HTMT values were below the threshold of 0.85, confirming that each construct is empirically distinct. Overall, these results confirm that the measurement model meets all reliability and validity requirements and is suitable for structural model analysis.

3.6. Common Method Bias Assessment

Given that the data were collected using a single-source questionnaire, potential common method bias (CMB) was assessed using two approaches. First, a full collinearity assessment was conducted by examining the variance inflation factor (VIF) values. All VIF values ranged between 1.34 and 2.11, which are below the conservative threshold of 3.3, indicating that common method bias is not a serious concern. Second, Harman’s single-factor test was performed. The results indicate that the first factor accounts for less than 50% of the total variance, suggesting that no single factor dominates the data. These findings confirm that common method bias does not threaten the validity of the results.

4. Resut and Discussion

4.1. Result

Discriminan Validity

Tabel 3. Discriminan Validity

	Ambidexterity	Eksternal Enviroment	HR-Base Quality Assurance	Sustainable Performance	Eksternal Enviroment x Ambidexterity
Ambidexterity					
Eksternal Enviroment	0.451				
HR-Base Quality Assurance	0.245	0.125			
Sustainable Performance	0.406	0.149	0.479		
Eksternal Enviroment x Ambidexterity	0.332	0.154	0.222	0.372	

The results of the discriminant validity test show that all constructs in the research model have a level of inter-construct correlation that is below the critical threshold, thus confirming that each variable represents a different concept empirically and does not experience construct overlap problems, as recommended in the evaluation of the SEM-PLS measurement model. The moderate correlation between ambidexterity and the external environment (0.451) indicates a contextual link without eliminating the conceptual distinction between internal capabilities and external environmental dynamics. The relatively low correlation values

between ambidexterity and HR-based quality assurance (0.245), and between the external environment and HR-based quality assurance (0.125), confirm that the HR-based quality assurance system is a stand-alone institutional mechanism and not simply a reflection of ambidexterity capabilities or environmental pressures. The relationship between HR-based quality assurance and sustainable performance (0.479) shows a substantive link but remains within the limits of discriminant validity, confirming that sustainable performance is a conceptually distinct strategic outcome from the quality system. Meanwhile, the relatively low to moderate correlations of the external environment × ambidexterity interaction construct with other main constructs (0.154–0.372) indicate that the moderating variables form a unique and empirically valid construct, in accordance with the guidelines for testing interaction constructs in SEM-PLS.

Construct Reliability Dan Validity

Table 4. Construct Reliability Dan Validity

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
Ambidexterity	0.974	0.977	0.979	0.887
Eksternal Environment	0.982	1.005	0.984	0.885
HR-Base Quality Assurance	0.988	0.99	0.99	0.922
Sustainable Performance	0.978	0.98	0.982	0.902

The results of construct reliability and validity testing show that all constructs in the model have a very strong level of reliability and convergent validity, as indicated by the Cronbach's alpha and composite reliability (ρc) values which are all far above the minimum limit of 0.70, thus indicating a very high and stable internal consistency of the indicators in reflecting the latent constructs. The Average Variance Extracted (AVE) value for all constructs exceeds 0.50 even in the very high category indicating that the majority of the indicator variance is successfully explained by the latent construct, so that convergent validity is strongly met and strengthened in the SEM-PLS guidelines. The high reliability of the ambidexterity, external environment, HR-based quality assurance, and sustainable performance constructs also confirms that the indicators used have been well calibrated and conceptually relevant in the context of organizational and higher education research that emphasizes the importance of reliable measurement instruments in HRM and sustainable performance studies. Overall, these results confirm that the measurement model has met all the reliability and construct validity criteria, making it suitable for use in testing structural relationships and drawing causal conclusions in this study.

R-Square

Table 5. R-Square

	R-square	R-square adjusted
HR-Base Quality Assurance	0.059	0.049
Sustainable Performance	0.349	0.32

The results of the R-square test show that the HR-Based Quality Assurance construct has an R² value of 0.059 (adjusted R² = 0.049), which indicates that ambidexterity as a predictor

variable explains approximately 5.9% of the variation in the implementation of HR-based quality assurance systems, so that the explanatory power of the model on this construct is relatively weak, but still acceptable in exploratory and contextual research in the fields of management and higher education. This relatively low R² value suggests that HR-based quality assurance is a multidimensional phenomenon that is not only influenced by ambidexterity capabilities, but also by other factors such as leadership, quality culture, and institutional policies. Meanwhile, the Sustainable Performance construct showed an R² value of 0.349 (adjusted R² = 0.320), which indicates that the combination of ambidexterity, HR-based quality assurance, external environment, and moderating effects are able to explain approximately 34.9% of the variation in sustainable performance, which is categorized as moderate explanatory power, according to the evaluation criteria of the SEM-PLS structural model.

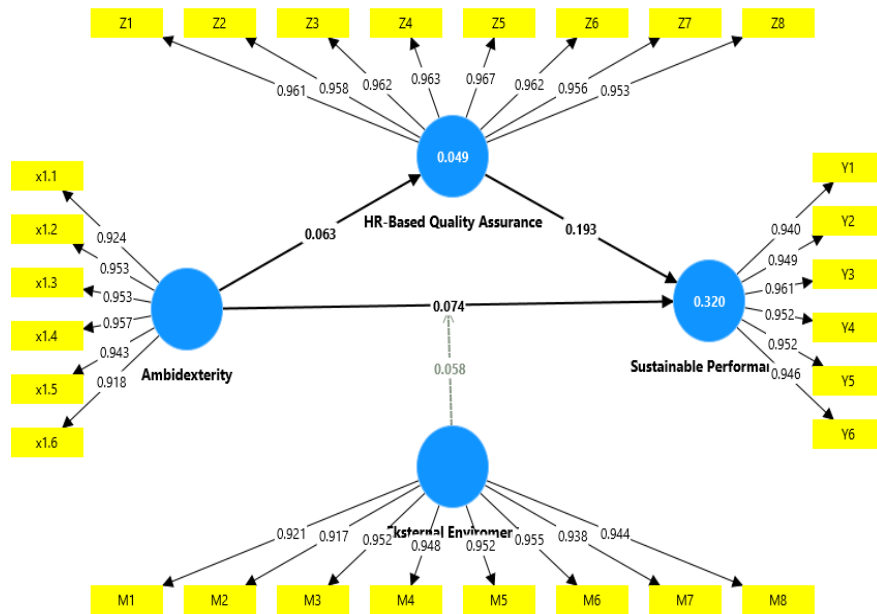
F-Square

Table 6. F-Square

	Ambidexterity	Eksternal Enviroment	HR-Base Quality Assurance	Sustainable Performance	Eksternal Enviroment x Ambidexterity
Ambidexterity			0.063	0.074	
Eksternal Enviroment				0.002	
HR-Base Quality Assurance				0.193	
Sustainable Performance					
Eksternal Enviroment x Ambidexterity					0.058

The results of the effect size (F-square) test show that ambidexterity has a small influence on HR-based quality assurance ($f^2 = 0.063$) and sustainable performance ($f^2 = 0.074$), which indicates that although its contribution is statistically significant, ambidexterity plays a role as an initial supporting factor in strengthening the quality system and sustainable performance, according to the classification of small effect size (0.02–0.15). The very low F-square value of the external environment on sustainable performance ($f^2 = 0.002$) indicates that the external environment does not provide a significant direct contribution to sustainable performance, so its influence is more contextual and not dominant. In contrast, HR-based quality assurance shows a moderate effect size on sustainable performance ($f^2 = 0.193$), which confirms the central role of HR-based quality assurance systems as a key transformational mechanism in converting HR capabilities into sustainable institutional performance. Meanwhile, the moderating construct external environment × ambidexterity has a small effect size on sustainable performance ($f^2 = 0.058$), which indicates that the external environment functions as a strengthening or weakening factor in the ambidexterity-performance relationship, but is not the main determinant.

Figurr 2. Outer Model



Inner Model

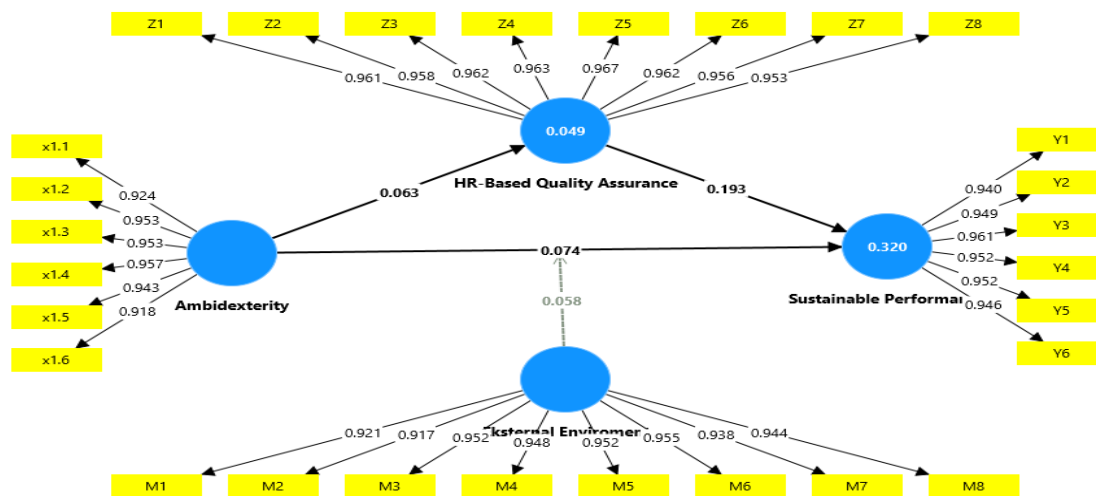
Direct Effect

Table 7. Direct Effect

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values
Ambidexterity -> HR-Base Quality Assurance	0.243	0.244	0.098	2.493	0.013
Ambidexterity -> Sustainable Performance	0.258	0.268	0.109	2.36	0.018
Eksternal Enviromer -> Sustainable Performance	-0.039	-0.033	0.099	0.396	0.692
HR-Base Quality Assurance -> Sustainable Performance	0.37	0.367	0.092	4.034	0
Eksternal Enviromer x Ambidexterity -> Sustainable Performance	-0.215	-0.195	0.095	2.27	0.023

The results of the direct effect test show that ambidexterity has a positive and significant effect on HR-based quality assurance ($\beta = 0.243$; $p = 0.013$), which confirms that the ability to explore and exploit human resources plays an important role in strengthening the effectiveness of the HR-based quality assurance system. Ambidexterity is also proven to have a positive and significant effect on sustainable performance ($\beta = 0.258$; $p = 0.018$), which indicates that ambidextrous HR capabilities directly contribute to the achievement of organizational sustainable performance. In contrast, the external environment does not show a significant direct effect on sustainable performance ($\beta = -0.039$; $p = 0.692$), which confirms that external environmental pressures do not automatically improve performance without adequate internal mechanisms. The results further show that HR-based quality assurance has a positive and highly significant effect on sustainable performance ($\beta = 0.370$; $p < 0.001$), which confirms the strategic role of the HR-based quality assurance system as a major determinant in transforming HR capabilities into sustainable institutional performance. Interestingly, the interaction effect of external environment \times ambidexterity on sustainable performance is negative and significant ($\beta = -0.215$; $p = 0.023$), which indicates that at high levels of external environmental dynamics, the positive influence of ambidexterity on sustainable performance actually weakens, a finding that is consistent with the contingency fit perspective proposed by.

Figure 3. Inner Model



Inndirect Effect

Table 8. Indirect Effect

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values
Ambidexterity -> HR-Base Quality Assurance -> Sustainable Performance	0.09	0.09	0.044	2.025	0.043

The results of the indirect effect test indicate that ambidexterity has a positive and significant effect on sustainable performance through the mediation of HR-based quality assurance ($\beta = 0.090$; $p = 0.043$), which confirms that the HR-based quality assurance system plays a key role in transforming human resource exploration and exploitation capabilities into sustainable institutional performance. Strategic HR practices function as a transmission mechanism between HR capabilities and organizational performance, indicating that the HR-based quality system is able to strengthen the impact of internal capabilities on sustainability performance. The significance of this mediation pathway also confirms that ambidexterity not only has a direct impact, but primarily generates strategic value when institutionalized through a consistent and structured HR-based quality assurance mechanism

Total Effect

Table 9. Total Effect

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values
Ambidexterity -> HR-Base Quality Assurance	0.243	0.244	0.098	2.493	0.013
Ambidexterity -> Sustainable Performance	0.348	0.357	0.112	3.116	0.002
Eksternal Enviroment -> Sustainable Performance	-0.039	-0.033	0.099	0.396	0.692
HR-Base Quality Assurance -> Sustainable Performance	0.37	0.367	0.092	4.034	0
Eksternal Enviroment x Ambidexterity -> Sustainable Performance	-0.215	-0.195	0.095	2.27	0.023

The total effect test results show that ambidexterity has a positive and significant influence on HR-based quality assurance ($\beta = 0.243$; $p = 0.013$), which confirms that human resource exploration and exploitation capabilities consistently strengthen the HR-based quality assurance system as an institutional mechanism. Ambidexterity also shows a stronger and more significant total effect on sustainable performance ($\beta = 0.348$; $p = 0.002$), which reflects the accumulation of direct and indirect effects through HR-based quality assurance, thus confirming that the contribution of ambidexterity to sustainable performance becomes more substantial when mediated by strategic HR practices. In contrast, the external environment does not have a significant total effect on sustainable performance ($\beta = -0.039$; $p = 0.692$), which indicates that external environmental dynamics do not automatically improve institutional performance without the appropriateness of internal capabilities, in line with the contingency

theory perspective. The next result shows that HR-based quality assurance has a positive and highly significant total influence on sustainable performance ($\beta = 0.370$; $p < 0.001$), which confirms its role as a major determinant in driving the sustainable performance of private universities. Meanwhile, the total influence of the moderating variable external environment \times ambidexterity on sustainable performance is negative and significant ($\beta = -0.215$; $p = 0.023$), which indicates that at high levels of external environmental pressure, the effectiveness of ambidexterity in improving sustainable performance tends to weaken, a finding that is consistent with the concept of environmental misfit in the study of ambidexterity and organizational performance.

4.2. Discussion

Human Resource Ambidexterity and HR-Based Quality Assurance

The findings indicate that human resource ambidexterity has a positive and significant effect on HR-based quality assurance ($\beta = 0.243$; $p = 0.013$). This effect size, although categorized as small ($f^2 = 0.063$), is consistent with prior studies suggesting that ambidexterity acts as an enabling capability rather than a direct performance driver. Compared to recent studies such as Human Resource Management research by Jyoti and Choudhary (2024), which reported stronger effects of ambidexterity on employee performance ($\beta > 0.40$), the lower coefficient in this study suggests that in the higher education context, ambidexterity alone is insufficient to directly shape institutional systems. Instead, it requires formalization through structured mechanisms such as HR-based quality assurance.

This supports the argument from Dynamic Capabilities Theory that internal capabilities must be institutionalized into organizational processes to generate consistent outcomes. In loosely coupled systems such as universities, HR behaviors must be translated into standardized quality practices to ensure alignment across decentralized units.

Ambidexterity and Sustainable Performance

The direct effect of ambidexterity on sustainable performance ($\beta = 0.258$; $p = 0.018$) confirms that balancing exploration and exploitation contributes to long-term institutional outcomes. However, the magnitude of this effect is moderate and lower than findings in corporate settings (e.g., $\beta \approx 0.35$ – 0.50 reported in innovation-driven industries).

This discrepancy suggests that in higher education institutions, performance is not solely driven by internal capabilities but also depends on institutional processes such as accreditation systems and governance structures. This aligns with Resource-Based View, which emphasizes that resources must be effectively organized and deployed to create value. Thus, ambidexterity provides potential value, but its impact becomes more substantial when embedded within formal quality assurance systems.

The Mediating Role of HR-Based Quality Assurance

The results confirm that HR-based quality assurance significantly mediates the relationship between ambidexterity and sustainable performance ($\beta = 0.090$; $p = 0.043$), indicating a partial mediation effect. This finding is theoretically important because it demonstrates that HR-based quality assurance functions as a transformational mechanism that converts individual-level capabilities into organizational-level outcomes. Compared to studies such as Al Mamun and Uddin (2025), which emphasize socially responsible HRM as a mediator, this study provides a more context-specific explanation by highlighting the role of institutional quality systems in higher education.

The relatively stronger direct effect of HR-based quality assurance on sustainable performance ($\beta = 0.370$; $p < 0.001$; $f^2 = 0.193$) further confirms that structured HR systems play a dominant role in driving institutional sustainability. This supports the view that in higher education, performance is system-driven rather than purely capability-driven, reinforcing the importance of integrating HR practices into formal quality assurance frameworks.

The Moderating Role of External Environment

One of the most critical findings of this study is the negative moderating effect of the external environment on the relationship between ambidexterity and sustainable performance ($\beta = -0.215$; $p = 0.023$). This result provides important theoretical insights when interpreted through the lens of Contingency Theory. While prior studies often suggest that environmental dynamism strengthens the importance of ambidexterity, this study reveals a contrasting pattern in the higher education context.

A possible explanation is that excessive environmental dynamism such as rapid regulatory changes, technological disruption, and intensified competition creates instability that disrupts the balance between exploration and exploitation. In such conditions, institutions may struggle to align innovative activities with standardized quality requirements, leading to inefficiencies and reduced performance outcomes. This finding is consistent with recent research indicating that ambidexterity does not always produce positive outcomes under high uncertainty, particularly when organizational systems are not sufficiently mature. In the context of private higher education institutions, external pressures may exceed internal adaptive capacity, resulting in a misalignment between internal capabilities and external demands. Thus, this study extends existing literature by demonstrating that environmental dynamism can act as a constraint rather than an enabler, particularly in institutional settings characterized by regulatory complexity and resource limitations.

5. Conclusion and Suggestion

This study demonstrates that human resource ambidexterity plays a significant role in enhancing sustainable performance in private higher education institutions, both directly and indirectly through HR-based quality assurance. The findings confirm that ambidextrous capabilities become strategically valuable when institutionalized into structured quality assurance systems, which function as the primary mechanism for translating individual competencies into organizational outcomes. Furthermore, the results reveal that the external environment does not directly improve performance but instead moderates the effectiveness of internal capabilities. The negative moderating effect indicates that high environmental dynamism can weaken the contribution of ambidexterity, particularly when institutional systems are not sufficiently adaptive.

Despite these contributions, several limitations should be acknowledged. First, the cross-sectional design restricts causal inference and does not capture the dynamic evolution of ambidexterity and quality assurance over time. Second, the study focuses on private higher education institutions within a single regional context, which may limit generalizability. Third, the external environment is measured primarily through environmental dynamism, which may not fully capture broader contextual complexity. Future research is therefore encouraged to adopt longitudinal designs, expand cross-institutional or cross-country comparisons, and incorporate additional environmental dimensions such as institutional pressure and

environmental hostility to provide a more comprehensive understanding of the interplay between internal capabilities and external conditions.

Limitations and Future Research

This study has several limitations that should be acknowledged. First, the use of cross sectional data limits the ability to infer causal relationships and capture dynamic changes over time. Future research is encouraged to adopt longitudinal designs to better understand how ambidexterity and quality assurance evolve in response to environmental changes. Second, the study focuses on private higher education institutions within a specific regional context, which may limit the generalizability of the findings. Future studies could expand the scope to include public universities or cross-country comparisons to enhance external validity. Third, the measurement of the external environment is limited to environmental dynamism. Future research may incorporate additional dimensions such as environmental hostility or institutional pressure to provide a more comprehensive understanding of contextual effects. Overall, this study provides a foundation for future research to further explore the interaction between internal capabilities, institutional systems, and external environments in shaping sustainable performance in higher education.

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