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Educational Transformation Strategies for University Performance Excellence

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This research aimed to develop and validate a structural model of educational transformation strategies that drive university performance excellence in Thai higher education. The objectives were to investigate the relationships between external factors and educational transformation strategies, internal factors and transformation strategies, and transformation strategies and university performance excellence. Additionally, the study sought to construct a practical model for guiding higher education institutions toward sustainable success. The sample consisted of 217 participants, purposively selected from public and private universities in Thailand. These individuals included university executives and quality assurance personnel with significant experience in strategic management. Data were collected using an online questionnaire designed in alignment with the conceptual framework. Data analysis employed descriptive statistics (frequency, percentage, mean, and standard deviation), Exploratory Factor Analysis (EFA), Confirmatory Factor Analysis (CFA), and Structural Equation Modeling (SEM). The results indicated that both external and internal factors significantly influence educational transformation strategies, which in turn have a strong and direct impact on university performance excellence. Furthermore, transformation strategies were found to mediate the relationships between the influencing factors and performance outcomes. The validated model provides higher education leaders with a strategic framework to respond effectively to digital disruption, policy shifts, and labor market demands. It emphasizes the importance of leadership, faculty development, curriculum redesign, and student support as key enablers of institutional excellence.

คำสำคัญ: educational transformation strategies, university performance excellence, higher education management

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บทนำ

In the 21st century, higher education institutions are under increasing pressure to transform in response to global challenges, including technological disruption, demographic shifts, and policy reforms. Universities are no longer solely knowledge repositories but play a critical role in preparing a future-ready workforce for dynamic labor markets shaped by the Fourth Industrial Revolution (Industry 4.0). The World Economic Forum (Zahidi et al., 2020) projected that by 2025, automation would displace 85 million jobs while creating 97 million new roles requiring competencies such as digital literacy, critical thinking, and problem-solving emphasizing the urgent need for universities to adapt curricula, pedagogy, and organizational structures accordingly. In Thailand, these global trends are compounded by the Thailand 4.0 policy, which calls for universities to serve as innovation hubs driving national competitiveness, inclusivity, and sustainability. The country's demographic transition, characterized by declining birth rates and an aging population, further compels universities to diversify their offerings, providing flexible and lifelong learning pathways (Sae-Lim, 2021). To respond effectively, the NXPO (2021) has proposed a paradigm shift in Thai higher education—transitioning from content-based to competency-based education, from degree-centric to employability-oriented models, and from isolated institutions to interconnected ecosystems.

Literature emphasizes that educational transformation is not merely technical but adaptive, requiring systemic change in curricula, research, governance, and digital infrastructure (Parker, 2020; Menéndez, 2021). Eckel and Kezar (2003) assert that successful transformation demands visionary leadership, stakeholder engagement, and long-term, iterative change processes. These transformations are particularly urgent in the context of digital disruption, where universities must embrace hybrid learning, data-driven decision-making, and personalized education models to meet student expectations (Lundy et al., 2020). Costa et al. (2022) further highlight that Industry 4.0 is reshaping workforce skills, requiring universities to equip graduates with interdisciplinary problem-solving abilities. Deloitte (2021) and Weligamage (2009) emphasize the need for flexible credentialing and curricula aligned with high-demand skills. While several Thai studies have explored components of transformation such as innovation-driven curricula (Ruchiwit et al., 2019), entrepreneurial universities (Buasuwan, 2018), and lifelong learning (Charungkaittikul

& Henschke, 2014), they tend to focus on isolated aspects rather than presenting an integrated model linking external drivers, internal capacities, and transformation strategies to university performance outcomes. Few studies in Thailand have employed empirical, theory-driven methods, such as Structural Equation Modeling (SEM), to validate these relationships.

Therefore, this research seeks to address this gap by developing and empirically testing a comprehensive model of educational transformation strategies tailored to the Thai higher education context, integrating both external and internal factors to examine their impact on university performance excellence.

Objectives

1. To study the relationship between external factors for future higher education and educational transformation strategies
2. To study the relationship between internal factors for future higher education and educational transformation strategies
3. To study the relationship between educational transformation strategies and university performance excellence
4. To develop an educational transformation strategy model for higher educational institutions

Hypothesis

1. External factors for future higher education positively associate with educational transformation strategies.
2. Internal factors for future higher education positively associate with educational transformation strategies.
3. Educational transformation strategies positively associate with university performance excellence.
4. Educational Transformation Strategies mediate the relationship between external factors and university performance excellence.
5. Educational Transformation Strategies mediate the relationship between internal factors and university performance excellence.

Research Methodology

1. Population and Sample

The population of this study comprised higher education institutions in Thailand, which served as the unit of analysis. These institutions were categorized into six types according to their governance structures and admission systems: (1) public universities with restricted admission quotas (8 universities); (2) public universities with open admission (2 universities); (3) autonomous public universities (26 universities); (4) Rajabhat universities (38 universities); (5) Rajamangala University of Technology (9 universities); and (6) private universities (43 universities). This classification aimed to reflect the diversity and complexity of Thailand's higher education system, enabling the study to gain a comprehensive understanding of the strategic educational transformation across varied institutional types with different missions and governance models.

The unit of measurement in this study consisted of academic and support staff from these universities, who were directly involved in institutional planning, quality assurance, and policy implementation. These staff members were selected because of their key roles in driving and sustaining the quality of education within their respective institutions. Their direct engagement in educational quality assurance processes positioned them as suitable informants capable of providing practical and insightful information relevant to the objectives of this study.

A purposive sampling technique was applied to select the sample group. The participants included academic and support staff from the six categories of universities, who possessed significant experience and knowledge in educational quality assurance and were actively responsible for institutional quality management systems. This sampling method ensured that the selected participants were highly qualified to provide informed perspectives necessary for the study's aims.

The determination of the sample size was guided by the recommendations of Loehlin (1992) and Hoyle (1995), who suggested that for structural equation modeling (SEM), an appropriate sample size should range from 100 to 200 cases to ensure reliable goodness-of-fit testing and stability of parameter estimates. Following these guidelines, this study collected data from 217 respondents, which exceeded the recommended

minimum thresholds for SEM analysis. Thus, the sample size was considered sufficient to support the robustness and validity of the analytical results.

2. Instrument and measurement development

The data collection instrument for this quantitative research was a structured questionnaire developed to align with the research conceptual framework and variables. The questionnaire was designed based on an extensive review of relevant theories, concepts, and empirical studies, ensuring consistency with the research objectives. Validated scales from previous research were carefully adapted to fit the context of strategic educational transformation and performance excellence in higher education institutions.

For external factors, measurement items were adapted from studies on future skills (Sheikh et al., 2023), lifelong learning (Zhou, 2018), personalized learning (Cox et al., 2014), AUN-QA standards (Bui, 2021), university holding companies (Ekholm & Salomonsson, 2022), and multi-institutional cooperation (Huisman et al., 2015), reflecting the key environmental drivers influencing universities' strategic directions. Regarding internal factors, the questionnaire incorporated scales adapted from Arnold et al. (2000) and Osiyemi (2006) to assess leadership and governance, Oladejo et al. (2019) for faculty and staff engagement, Munge et al. (2016) for financial management, Karimi et al. (2012) for academic program and curriculum design, Musa and Ahmad (2012) for infrastructure and facilities, and Basarmak and Hamutoglu (2020) for technology integration. These constructs evaluated the internal capabilities enabling universities to implement and sustain strategic changes.

To assess the outcomes of strategic educational transformation toward institutional excellence, scales were adapted from Kanji and Moura (2001) for leadership and vision, Delbari et al. (2021) for faculty and staff development, Gouëdard et al. (2020) for curriculum design and pedagogy, Juikumjorn (2018) for quality assurance, and Lee et al. (2022) for student support services. The dimensions of performance excellence were further operationalized across four key management processes, including systematic operation based on Delbari et al. (2021), deployment and implementation following Gouëdard et al. (2020), monitoring and evaluation adapted from Juikumjorn (2018), and results-oriented improvement following Lee et al. (2022).

Each section of the questionnaire corresponded directly to the study's key variables, namely external factors, internal factors, educational transformation strategies, and performance excellence indicators, ensuring that the data collected would provide valid and reliable information to address all research objectives.

Exploratory Factor Analysis (EFA) was initially conducted to explore the underlying structure of the observed variables and ensure data suitability for further analysis. Following the EFA, Confirmatory Factor Analysis (CFA) was performed. Convergent validity was evaluated through composite reliability (CR) and average variance extracted (AVE). Structural Equation Modeling (SEM) was applied to test the proposed hypotheses and assess the overall model fit.

3. Data Collection

Data were collected using an online questionnaire distributed to academic and support staff involved in quality assurance activities in both public and private universities in Thailand. The questionnaire, developed based on relevant literature, was validated through expert review and a pretest with 30 participants to ensure clarity and relevance. The internal consistency of each construct was assessed using Cronbach's Alpha, with the results indicating high reliability: 0.949 for External Factors, 0.965 for Internal Factors, 0.968 for Educational Transformation Strategies, and 0.853 for University Performance Excellence. The finalized questionnaire was disseminated via email and online survey platforms. All items were measured using a five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). Participants were informed of the study's confidentiality and their voluntary participation.

4. Data Analysis

The quantitative data were analyzed using statistical methods consistent with the study objectives and research design. Descriptive statistics, including frequency, percentage, mean, and standard deviation, were used to describe the characteristics of respondents and the levels of key variables. Inferential statistics, such as Exploratory Factor Analysis (EFA), Confirmatory Factor Analysis (CFA), and Structural Equation Modeling (SEM), were applied to test the validity of the measurement model and examine the hypothesized relationships among variables.

Conclusion and Discussion

1. Descriptive Statistics

The majority of respondents were female (64.52%), followed by male (34.56%) and other genders (0.92%). In terms of age, most participants were between 40–49 years (51.61%), followed by 30–39 years (27.19%), and 50 years or above (17.05%). Regarding educational qualifications, the largest group held a Master's degree (48.85%), followed by Doctorate (43.78%) and Bachelor's degree (7.37%). Most respondents were academic staff (59.45%), while support staff accounted for 40.55%. Concerning professional experience in educational quality assurance, the largest group reported 11–15 years of experience (35.02%), followed by 5–10 years (31.34%) and less than 5 years (24.42%).

2. Exploratory Factor Analysis (EFA)

Exploratory Factor Analysis (EFA) was conducted to examine the underlying factor structure of the measurement model. The results showed that the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy for all constructs exceeded the recommended threshold of 0.60 (Hair et al., 2010), indicating that the data were appropriate for factor analysis. Specifically, the KMO values were 0.918 for External Factors, 0.950 for Internal Factors, 0.949 for Educational Transformation Strategies, and 0.766 for University Performance Excellence. Additionally, Bartlett's Test of Sphericity was statistically significant at $p < 0.001$ for all constructs, confirming that the correlation matrices were suitable for factor extraction. These results demonstrated that the data were adequate for further factor analysis procedures.

3. Confirmatory Factor Analysis (CFA)

Confirmatory Factor Analysis (CFA) was subsequently performed using maximum likelihood estimation to validate the measurement model. Internal consistency reliability was confirmed as all constructs reported Cronbach's alpha and composite reliability (CR) values above 0.70 (Litwin, 1995; Cohen, 1988). The Cronbach's alpha values ranged from 0.840 for University Performance Excellence to 0.967 for Internal Factors, while CR values also exceeded 0.70 for all constructs. Although the Average Variance Extracted (AVE) values were lower than the conventional threshold of 0.50, the constructs still met the criteria for convergent validity based on Fornell and Larcker's (1981) guideline that CR values exceeding 0.60 compensate for lower AVE values. Discriminant validity

was also established, as the square roots of AVE for each construct were higher than the correlations with other constructs, indicating that each construct was empirically distinct.

4. Structural Model Fit

The structural equation modeling (SEM) results demonstrated that the hypothesized model of educational transformation strategies for operational excellence exhibited an excellent fit with the empirical data after model adjustments. The model fit indices confirmed that all criteria met the recommended thresholds (Hair et al., 2010; Browne & Cudeck, 1992). Specifically, the Chi-square (χ^2) value was 86.25 with 173 degrees of freedom (p = 1.00), indicating no significant difference between the theoretical model and the observed data. The relative Chi-square (χ^2/df) was 0.49, which is well below the threshold of 2.00, signifying an excellent model fit (Chadcham, 2004). The Comparative Fit Index (CFI) was 1.00, and the Goodness of Fit Index (GFI) was 0.96, both exceeding the 0.95 benchmark, while the Adjusted Goodness of Fit Index (AGFI) was 0.95. Additionally, the Root Mean Square Error of Approximation (RMSEA) was 0.000, indicating a perfect fit. These results confirm that the model was highly consistent with the empirical data, supporting its adequacy for hypothesis testing. Based on these findings, the model was considered valid and suitable for testing the proposed hypotheses regarding the relationships among external factors, internal factors, educational transformation strategies, and university performance excellence.

5. Hypothesis Testing and Mediation Analysis Results

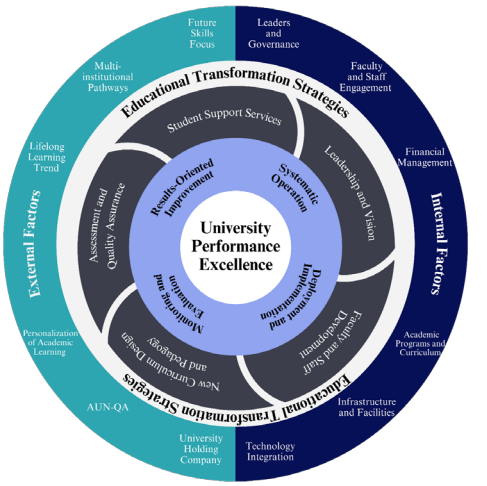
The hypothesis testing results confirmed that all hypothesized relationships in the structural model were supported. Internal Factors had a strong and significant direct effect on Educational Transformation Strategy (β = 0.90), while External Factors also showed a statistically significant but relatively weak direct effect (β = 0.04). This suggests that Internal Factors play a more influential role in shaping strategic educational transformation initiatives. Educational Transformation Strategy demonstrated a substantial direct effect on University Performance Excellence (β = 0.96), indicating that strategic transformation efforts are central to enhancing institutional performance.

The mediation analysis revealed significant indirect effects. External Factors and Internal Factors both influenced University Performance Excellence through Educational Transformation Strategy, with indirect effects of β = 0.487 and β = 0.737, respectively.

These results were statistically significant based on bootstrapping techniques recommended by Preacher and Hayes (2007), where the confidence intervals did not include zero. The findings indicate partial mediation in both cases, meaning that while External and Internal Factors directly affect University Performance Excellence, their influence is also transmitted indirectly through Educational Transformation Strategy.

When total effects were considered, Educational Transformation Strategy emerged as the most influential variable affecting University Performance Excellence, with a total effect of 0.96. Internal Factors followed with a total effect of 0.86, while External Factors contributed a smaller but positive total effect of 0.487. These findings reinforce the pivotal role of transformation strategy as both a direct driver and a mediator in the pathway to institutional excellence.

6. A proposed educational transformation strategy model



This figure presents the Educational Transformation Strategy Model, which illustrates the dynamic interplay between external factors, internal factors, and educational transformation strategies in driving University Performance Excellence. At the core of the model is University Performance Excellence, representing the ultimate objective of all transformation efforts. Surrounding this core, educational transformation strategies serve as the critical mechanism connecting external and internal forces. These strategies encompass key components, including leadership and vision, systematic operations, assessment and quality assurance, stakeholder engagement, curriculum innovation, and result-oriented improvement, ensuring that transformation is both structured and

outcome-driven. The external factors such as future skills demands, lifelong learning, multi-institutional pathways, AUN-QA accreditation, and personalized learning trends, highlight the global pressures compelling universities to innovate, collaborate, and continuously update their educational practices. Simultaneously, internal factors including leadership and governance, faculty engagement, financial management, infrastructure, technology integration, and curriculum development represent the institutional capabilities necessary to implement and sustain transformation strategies effectively. Together, these interconnected elements demonstrate that educational transformation strategies function as a bridge and mechanism, translating both external drivers and internal capacities into measurable improvements in academic quality, research output, student outcomes, and institutional sustainability.

Discussion

This study confirmed the significant influence of both external and internal factors on the formulation and implementation of educational transformation strategies, which, in turn, directly enhance university performance excellence. Firstly, external factors such as the demand for future-ready skills, lifelong learning imperatives, multi-institutional collaborations, accreditation frameworks like AUN-QA, and the rise of personalized learning have emerged as key drivers pushing universities toward strategic transformation. The growing skills gap resulting from digital disruption necessitates universities to embed 21st century competencies, including critical thinking, problem-solving, and adaptability, into their curricula (Bonfield et al., 2020; Sheikh et al., 2023). Additionally, the rise of lifelong learning, fueled by global economic uncertainties, compels institutions to offer flexible, accessible educational opportunities, such as micro-credentials and online learning (Akour & Alenezi, 2022). Cross-institutional collaborations and accreditation standards further ensure that universities meet global quality benchmarks while fostering continuous improvement (Huynh et al., 2024). Personalized learning, enabled by digital technologies, also fosters student engagement, improving both academic outcomes and satisfaction (Ren & Wu, 2025; Waldrip et al., 2014). Secondly, internal factors such as transformational leadership, faculty and staff engagement, financial management, and curriculum development critically support educational transformation. Effective

leadership fosters a shared vision, aligns resources, and promotes a culture of innovation and collaboration (Mader et al., 2013; Tawonpan, 2013). Engaged faculty are more likely to embrace pedagogical reforms and interdisciplinary collaboration (Shuck & Reio, 2014). Moreover, robust financial management underpins infrastructure investments necessary for transformation initiatives (Holloway, 2006), while dynamic curriculum reform ensures graduates are equipped with both disciplinary knowledge and future-ready skills (Sheikh et al., 2023; Ramdass & Mokgohloa, 2023).

Educational transformation strategies were also found to be pivotal in driving university performance excellence. By integrating active learning, technology-enhanced education, interdisciplinary curricula, and student-centered approaches, universities can significantly enhance teaching quality, research output, student engagement, and governance effectiveness (McCarthy et al., 2023; Bonfield et al., 2020). Furthermore, these strategies support the development of international collaborations, enhance institutional reputation, and ensure alignment with global labor market needs, thereby contributing to sustainable institutional success (Frank, 2019; Zahidi et al., 2020).

Importantly, the study demonstrated that educational transformation strategies mediate the relationships between both external and internal factors and university performance excellence. External demands do not automatically translate into improved outcomes without structured, institution-wide reforms (Tahrawi & Shawabkeh, 2024; Mbithi et al., 2016). Similarly, internal capabilities require alignment through strategic transformation processes to drive organizational excellence (Meepung et al., 2021; Zhang & Mohammad, 2025). In both cases, transformation strategies act as a critical mechanism, operationalizing macro-level changes and internal strengths into tangible improvements in teaching, research, and stakeholder satisfaction.

In conclusion, the study underscores that universities need to proactively adopt and implement educational transformation strategies that bridge both external pressures and internal capacities. Such strategies are essential for ensuring institutional relevance, competitiveness, and excellence in the evolving global higher education landscape.

Recommendations for Future Research

1. Qualitative studies should be conducted to obtain in-depth information about the opinions, attitudes, and experiences of higher education personnel regarding educational transformation strategies for pursuing excellence in various contexts.

2. Comparative studies should be conducted between higher education institutions that differ in size, location, type, and context to obtain more diverse and comprehensive data.

3. Follow-up studies should be conducted on the changes in higher education institutions after implementing educational transformation strategies for pursuing excellence to evaluate the effectiveness and efficiency of the strategies.

4. Additional studies should be conducted on factors affecting the success or failure of implementing educational transformation strategies for pursuing excellence, such as leadership, organizational culture, and personnel engagement, to provide beneficial recommendations for developing educational quality in higher education institutions in Thailand.

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