



## A HYBRID SYSTEMATIC REVIEW AND META-ANALYSIS OF MANAGEMENT PRACTICES IN PHILIPPINE HIGHER EDUCATION INSTITUTIONS

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### Abstract

This study employed a hybrid systematic review and meta-analysis to examine the impact of management practices on institutional outcomes in Philippine higher education institutions (HEIs) from 2019 to 2023, with an updated search extending to 2025. A total of 32 peer-reviewed studies were included in the qualitative synthesis, while 11 met the criteria for empirical inclusion; however, only six provided sufficient statistical data and were included in the meta-analysis. The meta-analysis yielded a moderate and statistically significant pooled effect size (Cohen's  $d = 0.516$ , 95% CI [0.452, 0.581]), indicating that management practices—particularly in the areas of resource allocation, curriculum implementation, and strategic planning—positively influence accreditation performance, instructional quality, and digital readiness. Substantial heterogeneity ( $I^2 = 89.6\%$ ) indicates considerable variation across institutional types, regions, and management domains. A thematic synthesis of qualitative studies further identified recurring patterns in related to adaptive leadership, quality assurance, and digital transformation. By integrating quantitative and qualitative evidence, this study advances current understanding of effective management approaches in Philippine HEIs and highlights the importance for context-responsive, resilient, and data-driven leadership frameworks. The findings offer practical implications for academic leaders, administrators, and policymakers seeking to strengthen institutional performance and governance in a rapidly evolving higher education landscape.

## INTRODUCTION

Higher education institutions (HEIs) operate within an increasingly complex and competitive global environment characterized by fast technological change, evolving quality assurance standards, and shifting socio-political conditions. In the Philippines, these challenges are compounded by institutional diversity—ranging from State Universities and Colleges (SUCs) and Local Universities and Colleges (LUCs) to private HEIs—each with varying capacities in governance, resource management, digital infrastructure, and academic development. The COVID-19 pandemic further intensified these pressures, compelling institutions to adopt resilient, evidence-based, and adaptive management practices to sustain academic continuity across instruction, research, and extension functions.

Management practices in HEIs encompass a broad spectrum of strategies, including strategic leadership, curriculum planning, resource allocation, quality assurance systems, and technological integration. These practices shape institutional performance by influencing accreditation outcomes, faculty productivity, student learning experiences, and organizational resilience. As performance expectations intensify and competition increases at both local and international levels, HEIs face growing pressure to identify which management approaches yield measurable and sustainable improvements.



Several empirical studies conducted over the past five years highlight the significance of leadership, digital innovation, and quality assurance in Philippine HEIs. For example, Dela Calzada (2023) emphasized the importance of resource and strategic management among middle-level administrators; Chavez & Lamorinas (2023); and Zalsos & Corpuz (2024) documented the role of digital assessment reforms in strengthening faculty development; while, Santos & Castro (2021) and Tungpalan & Antalan (2021) underscored the influence of curriculum leadership and technological integration on instructional quality. Although these studies provide valuable insights, the broader research landscape remains fragmented and lacks a comprehensive synthesis that quantifies the impact of management practices across institutional types and regions in the Philippines.

Previous literature reviews have predominantly adopted narrative or thematic approaches, offering conceptual clarity but limited empirical generalizability. Notably, no prior study has applied a meta-analytic technique to statistically estimate the effect size of management practice effects on institutional performance within Philippine HEIs. The absence of integrated evidence represents a critical gap in the field, particularly as institutions continue to realign their operations in response to post-pandemic realities.

To address this gap, the present study conducts a hybrid systematic review and meta-analysis of management practices in Philippine higher education institutions. Meta-analysis is systematic and quantitative research using the existing studies used by other researchers to obtain accurate conclusions (Briggs, 2005). The initial review covered publications from 2019 to 2023, and a supplemental search extended the review window to 2025 to capture emerging post-pandemic reforms, digital transformation initiatives, and contemporary governance approaches. By synthesizing both quantitative and qualitative evidence, this study aims to (1) compute the pooled effect sizes of management practices on institutional outcomes, and (2) identify thematic patterns that characterize resilient, adaptive, and effective management practices in Philippine HEIs.

This study is grounded in established theoretical frameworks, including transformational leadership theory (Leithwood & Jantzi, 2006), organizational resilience theory (Duchek, 2020), systems thinking in educational governance, and quality assurance models aligned with continuous improvement processes. These frameworks support the hybrid approach by linking organizational leadership, resource optimization, and strategic planning to measurable institutional outcomes.

Although the synthesis focuses on the Philippine context, the findings offer relevant insights for neighbouring Southeast Asian countries—particularly Indonesia—where HEIs encounter similar challenges related to accreditation, digital readiness, resource optimization, and governance reforms. The cross-country relevance strengthens the broader contribution of this study to ASEAN higher education development and positions Philippine HEIs within regional dialogues on quality assurance, institutional resilience, and innovation.

## Review of Related Literature

This section explores the major frameworks, concepts, and empirical findings surrounding higher education management practices, with an emphasis on the Philippine context. The review is organized thematically around core management domains in higher education, existing empirical gaps and the need for evidence synthesis, and theoretical models that explain how management supports institutional performance.

Management in higher education institutions (HEIs) encompasses a wide range of administrative, academic, and strategic activities designed to ensure institutional quality, sustainability, and relevance. Central to educational effectiveness are several interrelated management domains, beginning with strategic leadership and governance which involves setting long-term visions, formulating institutional development plans, and fostering an organizational culture that supports innovation and accountability. Leithwood & Jantzi (2006) underscore the impact of transformational leadership on student achievement and faculty engagement, while Valentine & Prater (2011) identify instructional and managerial leadership as key to large-scale school improvement. Findings from Roque & Ulanday-Lozano (2024) show that strong leadership and operational planning emerged as recurring strengths in QMS implementation. In the Philippine context, Roma (2021) and Miranda & Reyes-Chua (2021) found that strategic planning and internal governance reforms correlate with improved accreditation performance and institutional effectiveness.

Complementing leadership functions, effective resource and infrastructure management, including budgeting, infrastructure maintenance, and human resource development, remains critical for institutional performance. Dela Calzada (2023) reports that middle-level managers in Philippine HEIs significantly influence operational success through budget planning and resource mobilization. E.Miciano et al. (2025) said HEIs implement quality assurance across instruction, research, extension, and resource management domains. The shift to remote learning during the pandemic also highlighted the importance of responsive resource management in sustaining academic continuity. Alongside these functions, quality assurance and accreditation mechanisms, such as internal audits, self-evaluation systems, and accreditation processes, are widely adopted to monitor and improve institutional standards. Chavez & Lamorinas (2023) and Miranda & Reyes-Chua (2021) provide evidence that well-structured QA systems contribute to higher levels of institutional credibility and student trust. The Commission on Higher Education (CHED) in the Philippines continues to prioritize QA as a central strategy in its policies and funding mechanisms. Equally important is curriculum and faculty development, particularly under the outcomes-based education (OBE) framework, which aligns academic programs with national and global competency standards. Tungpalan & Antalan (2021) found that faculty engagement in OBE-based curriculum design improves instructional practices and assessment alignment, while Santos & Castro (2021) emphasized the role of technology-integrated faculty training in advancing Technological Pedagogical Content Knowledge (TPACK).

Finally, the COVID-19 pandemic accelerated the urgency for digital transformation and institutional resilience, prompting Philippine HEIs to adopt learning management systems, flexible learning modalities, and restructured assessment practices, as documented by Barrot et al. (2024) and Dayagbil (2023). These adaptations highlight the growing relevance of resilience-oriented management as conceptualized by Duchek (2020) as a dynamic organizational capability involving anticipation, coping, and adaptation in response to disruption.

In the empirical gaps and the need for synthesis, despite the growing number of individual case studies and institutional reports, the literature on management practices in Philippine higher education institutions (HEIs) remains fragmented and uneven in its empirical contributions. Existing studies tend to focus on specific institutions, regions, or management dimensions, resulting in a lack of integrative evidence that quantitatively evaluates the

effectiveness of management practices across diverse institutional and geographical contexts. Most systematic reviews in this area, including those conducted by Acido & Kilongkilong (2022) and Dayagbil (2023), rely heavily on qualitative synthesis, leaving a significant gap in our understanding of the magnitude and statistical consistency of management outcomes. Furthermore, existing studies rarely use comparative or meta-analytic techniques, limiting their ability to inform policy across diverse institutional contexts. In response to these gaps, the present study contributes to the existing body of literature in three significant ways by systematically aggregating empirical findings from studies published between 2019 and 2023 with updated extending to 2025, providing an up-to-date synthesis of the current state of research on management practices in Philippine higher education institutions (HEIs); by quantitatively estimating the overall impact of these management practices by calculating pooled effect sizes through a meta-analytic approach, thereby offering a more precise estimate of their practical significance across varied institutional contexts; and by complementing the quantitative analysis with a thematic synthesis that examines management strategies employed by both public and private HEIs, highlighting common patterns, innovative approaches, and contextual nuances that inform effective higher education governance in the Philippines.

The theoretical foundations supporting management efficacy in this study are grounded in several key frameworks that explain how management practices influence educational effectiveness and institutional outcomes. Transformational Leadership Theory, as articulated by Leithwood & Jantzi (2006), emphasizes visionary, collaborative leadership that enhances faculty motivation and student learning, while Organizational Resilience Theory proposed by (Duchek, 2020) conceptualized higher education institutions as dynamic systems capable of proactive, absorptive, and adaptive responses to external disruptions. These perspectives are reinforced by systems thinking in educational management, which suggests that institutions should be viewed holistically, with interdependent subsystems in governance, instruction, resource management, and assessment processes working together to achieve organizational effectiveness. In addition, quality assurance models that integrate planning, implementation, monitoring, and feedback mechanisms supports continuous improvement, aligning with the findings of Ramos-Atienza & Aquino (2024), that QA demonstrated significant alignment across analysis, implementation, and monitoring processes. Collectively, these theoretical foundations support the rationale for using a hybrid research synthesis approach that combines meta-analytic techniques to quantify the impact of management practices with qualitative synthesis to preserve contextual depth. The relevance of these frameworks is particularly pronounced in the Philippine higher education landscape, where institutional diversity across State Universities and Colleges (SUCs), Local Universities and Colleges (LUCs), and private HEIs, along with geographic disparities and uneven digital access, continues to pose challenge to systemic reform, thereby underscoring the value of evidence-based management strategies for institutional leaders and policymakers.

## METHODS

This study employed a hybrid systematic review and meta-analysis to examine the effects of management practices on institutional outcomes in Philippine higher education institutions (HEIs). The review procedures were guided by the PRISMA 2020 standards (Page et al., 2021) to ensure methodological transparency and replicability. Quantitative meta-

analysis is a statistical technique that combines two or more similar studies to generate a pooled quantitative estimate (Mueller et al., 2018).

The review scope and update procedures which the review initially included peer-reviewed studies published between January 2019 and December 2023. To ensure contemporary relevance, a supplemental search was conducted to cover January 2024 to December 2025, capturing emerging post-pandemic management practices, digital transformation initiatives, and recent quality assurance reforms.

The updated search identified four additional studies, all of which met the criteria for qualitative inclusion but lacked sufficient statistical data (e.g., standard deviations, correlations, inferential test results) required for meta-analysis. Consequently, these studies were incorporated exclusively into the narrative synthesis.

## **Research Design**

The research design used in this study was convergent parallel research design where two complementary methodological strands were combined to study management practices in Philippine higher education institutions. First, a systematic review of peer-reviewed empirical studies was performed to identify the evidence comprehensively since 2019 to 2025. Second, a meta-analytic method was utilized on studies that provided adequate statistics to be able to calculate the effect sizes by which the effects of management practices could be quantitatively estimated insofar as the effect on key educational outcomes was concerned. This design allow to triangulate the results and presented both quantitative rigor and qualitative richness to evaluating the effectiveness of management practices in the context of multiple institutional settings.

## **Eligibility Criteria**

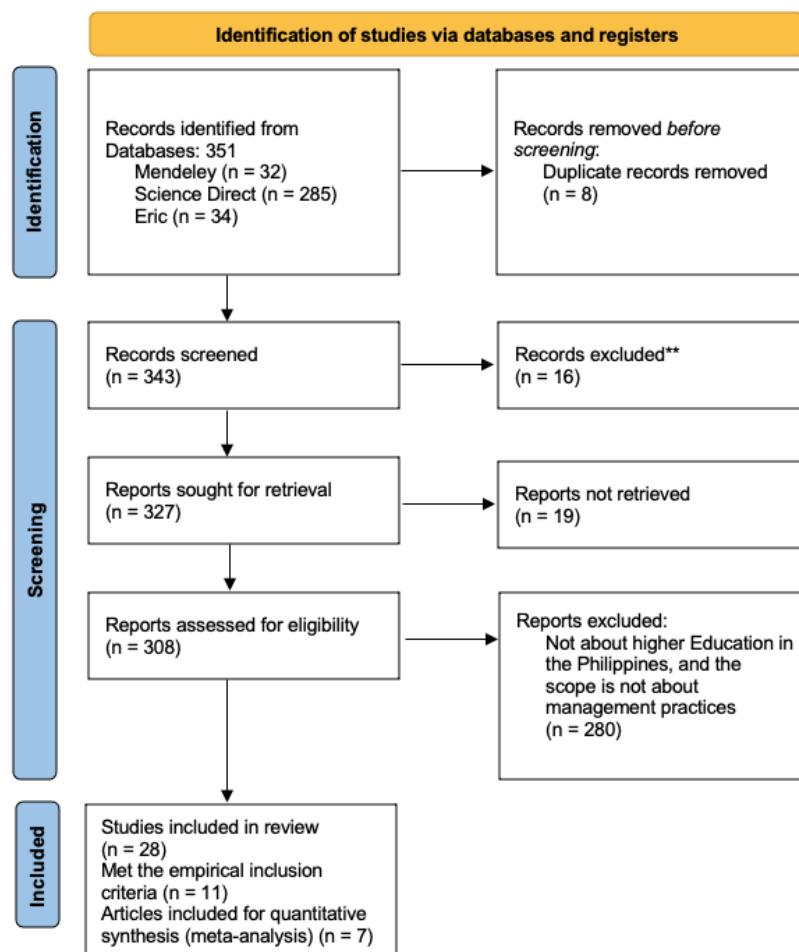
Studies considered eligible for inclusion focused on management practices in Philippine higher education institutions (HEIs) and were published in English as open-access article in peer-reviewed journals or in reputable conference proceedings. The review prioritized studies that employed quantitative or mixed-method research designs, while qualitative studies were included only in thematic synthesis component. To ensure suitability for meta-analytic computation, the included studies were required to report sufficient statistical data such as means, standard deviations, correlations, t-values, or p-values, to compute the effect sizes. Initially, only studies published between 2019 and 2023 were selected, and an updated search was subsequently conducted to include studies published between 2024 and 2025.

Studies were excluded if they focused on basic or secondary education rather than higher education, were purely theoretical, conceptual, or opinion-based; did not provide extractable quantitative statistics needed for meta-analysis (although such studies were retained for qualitative synthesis), lacked accessible full-text for versions, or did not address management practices within an educational context.

## **Search Strategy and Screening Process**

A comprehensive search was conducted across the Mendeley, ScienceDirect, and ERIC databases. Keywords and combinations included: "management practices," "higher education," "Philippines," "institutional performance," "strategic leadership," "quality assurance," "accreditation," "curriculum management," and "educational administration." Boolean operators ("AND," "OR") were applied to refine searches. The initial search (2019–2023) outcome identified 351 records (34 from Mendeley, 289 from ScienceDirect, and 35

from ERIC); the updated 2024–2025 search conducted on November 18, 2025, across the same databases and using the same keywords was used to ensure consistency with the original search protocol. It identified four additional studies. After removing duplicates and screening titles and abstracts, 32 full texts were assessed (19 from Mendeley, six from ScienceDirect, and seven from ERIC), and 11 met the eligibility criteria. Seven provided sufficient statistical data for inclusion in the meta-analysis. The remaining studies contributed to the narrative thematic synthesis. A PRISMA flow diagram (Figure 1) summarizes the selection process.



**Figure 1.** PRISMA 2020 Flow Diagram (Studies included 2019–2025)

## Data Extraction and Coding

Extracted information included authors, year of publication, journal title, research design and sample size, management domains (e.g., resource management, quality assurance, curriculum leadership), outcome variables (e.g., accreditation performance, faculty practice, TPACK proficiency), and statistical indicators (means, standard deviations, *t*-values, *p*-values, and correlations) required for effect size computation.

## Effect Size Computation

Cohen's *d* was used as the standardized effect size across studies when means and standard deviations were reported. The effect size was calculated using the formula  $d = (M_1 - M_2) / SD_{pooled}$ , where  $M_1$  and  $M_2$  represent the means of the two comparison groups.

The pooled standard deviation was computed using the following equation:  $SD_{pooled} = \sqrt{[(SD_1^2 + SD_2^2) / 2]}$ , in which  $SD_1$  and  $SD_2$  denote the respective standard deviations of the groups.

### **Meta-Analysis Procedure**

A random-effects model was employed to account for anticipated heterogeneity across HEI types, measurement instruments, and management domains. The meta-analysis generated pooled effect size (Cohen's  $d$ ), 95% confidence intervals, Cochran's  $Q$  to assess overall heterogeneity, and the  $I^2$  statistic to quantify the proportion of variance attributable to heterogeneity. Studies were weighted using the inverse-variance method. Forest plot was used to visualize individual and pooled effect sizes, while funnel plots were generated to examine potential publication bias. Interpretation of funnel plot asymmetry was conducted cautiously due to the limited number of eligible studies ( $n < 10$ ).

### **Thematic Synthesis**

Studies that met the inclusion criteria but lacked extractable quantitative data were analyzed using qualitative thematic synthesis based on the approach of Miles and Huberman (1994). Open coding, axial grouping, and cross-case triangulation were employed, resulting in three overarching themes: digital resilience and technological adaptation, faculty-centered instructional innovations, and organizational agility and adaptive leadership. These themes complement the statistical findings by providing contextual insights into how management practices are implemented across different HEIs.

### **Trustworthiness and Rigor**

To ensure the credibility and replicability of the study, a series of rigorous procedures was implemented. A transparent coding protocol was developed to guide the systematic extraction and categorization of data from the included studies. Effect size calculations were independently verified to minimize computational errors and enhance the reliability of the quantitative synthesis. In addition, the study adhered to established reporting standards, including the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines and recognized best practices in meta-analytic research. Finally, a mixed-method triangulation strategy was employed to cross-validate the quantitative findings with qualitative insights, thereby strengthening the interpretation of results and ensuring methodological robustness.

### **Quality Assessment and Risk of Bias**

A formal MMAT or GRADE assessment was not applied due to inconsistent reporting standards across studies. Instead, an empirical sufficiency assessment was used to determine eligibility for meta-analysis, based on the presence of measurable variables, inferential statistics, and clearly defined outcomes. This approach ensured methodological rigor while accommodating the reporting variability common observed in Philippine HEI research.

### **Ethical Considerations**

As this study synthesized previously published research, no direct ethical approval was required. All included studies were cited appropriately, and the review adhered to ethical standards of research integrity, transparency, and accurate representation of findings.

## RESULT AND DISCUSSION

### RESULT

The results of the hybrid review are presented in two parts: (1) the meta-analytic findings from six studies that reported extractable quantitative data and (2) a thematic synthesis of studies included in the narrative review. Together, these results provide a comprehensive understanding of how management practices influence institutional outcomes in Philippine HEIs.

**Table 1.** Lists of Literature studied on the Management Practices of Higher Educational Institutions in the Philippines

No	Author	Year	Title	Study design	Sample Size (N)	Management Domain	Outcome Variables
1	Acido JV, Kilongkilong DA	2022	Resource Management Practices Towards Sustainable Support System During Pandemic	Descriptive research design	N/A	Resource Management	Standardization and ICT Utilization
2	Aquino PG, Jalagat RC	2021	Gearing Public Sector Management Education Curriculum in the Philippines Response to 21st Century Needs	Descriptive and status trend approach	N/A	Resource Management	Budget and Allocation: to develop and update the proposed curriculum that conforms with the Commission on Higher Education (CHED) standards
3	Barrot JS, Llenares II, del Rosario LS	2021	Students' Online Learning Challenges During the Pandemic and How They Cope with Them: The Case of the Philippines	Mixed-methods approach	N/A	Technological Integration and Digital Learning	Online Learning and Digital Literacy: to address challenges during the COVID-19 pandemic
4	Kunaviktikul W, et al.	2022	Nursing Students and Faculty Members' Experiences of Online Education During COVID-19 Across Southeast Asia: A Photovoice Study	Descriptive qualitative design using photovoice	N/A	Technological Integration and Digital Learning	Online Learning and Digital Literacy: Through online education methods
5	Reyes CT, Kyne SH, Lawrie GA, Thompson CD	2022	Implementing Blended First-Year Chemistry in a Developing Country Using Online Resources	Mixed methods approach	N/A	Technological Integration and Digital Learning	Blended and Online Learning: Through learning management systems such as Moodle
6	Tan TT, Inciong GD, Ignacio SD, Tiangco AC	2022	Knowledge, Skills, and Attitudes of Faculty Members and Residents-in-Training of the Department of Rehabilitation Medicine of the Philippine General Hospital towards Virtual Learning: A Cross-sectional Study	Descriptive cross-sectional study	N/A	Technological Integration and Digital Learning	Blended and Online Learning: to enhance the faculty's online teaching abilities
7	Malinao CW, Sotto MM	2022	Home Quarantined: Privacy at Risk in Technologically-Oriented Learning Amidst COVID-19 Pandemic	Descriptive comparative research design	N/A	Technological Integration and Digital Learning	Online Privacy and Security: By following online privacy risk management practices
8	Santos JM, Castro RD	2021	Technological Pedagogical Content Knowledge (TPACK) in Action: Application of Learning in the Classroom by Pre-Service Teachers (PST)	Explanatory sequential design of mixed methods	67	Curriculum Development and Innovation/ Technological Integration	Curriculum and Pedagogical Strategies: Technology integration as Technological Pedagogical Content Knowledge (TPACK) used in the lesson
9	Tungpalan KA, Antalan MF	2021	Teachers' Perception and Experience of Outcomes-Based Education Implementation in Isabela State University	A mixed-method approach was	13	Curriculum Development and Innovation	Curriculum and Pedagogical Strategies: Through expertise in the implementation of outcomes-based education (OBE) among the faculty members

No	Author	Year	Title	Study design	Sample Size (N)	Management Domain	Outcome Variables
10	Roma M	2021	Redefining Assessment in Tourism and Hospitality Education	Mixed-method approach	110	Curriculum Development and Innovation/strategic planning	21st Century Skills and 4IR: through assessment methods employed by teachers
11	Raymundo JL	2023	Exploring the Practices on Macro Skills Integrated Assessment in the Philippines Higher Education Context: Basis in Designing a Language Training Program	Qualitative	N/A	Curriculum Development and Innovation	Research Culture and Skills: By means of time management, hardware, support systems, and resources
12	Basco R	2023	Research is life: The Lived Experiences of Pre-Service Teachers on their Research Course	Phenomenological research	N/A	Research and Development	Research Culture and Skills: By means of time management, hardware, support systems, and resources
13	Quitoras MC, Abuso JE	2021	Best Practices of Higher Education Institutions (HEIs) for the Development of Research Culture in the Philippines	Qualitative research	N/A	Research and Development	Research Culture and Skills: Through research programs and creating innovation, and the Support Office (ITSO)
14	Kanyundo AJ, Chipeta GT, Chawinga WD	2023	An Analysis of Knowledge Management Practices at Lilongwe University of Agriculture and Natural Resources, Malawi	Mixed-method approach	N/A	Knowledge Management	Knowledge Creation and Sharing: is done through emails and meetings
	Miranda RD, Reyes-Chua E	2021	Best Practices in Quality Assurance in Selected Higher Education Institutions (HEIs) in the Philippines in the Light of the Malcolm Baldrige Framework	Quantitative approach, using Malcolm Baldrige Framework	150	Quality Assurance (QA) and Continuous Improvement	Quality Management Models: through the Malcolm Baldrige Framework (MBF)
15	Baron JV, Robles AC	2023	Structural Equation Model: Organizational Performance Among States Universities and Colleges in the Philippines	Descriptive correlative	N/A	Quality Assurance (QA) and Continuous Improvement	Quality Management Models: in the State Universities & Colleges (SUCs) in Region XII
17	Edralin D, Pastrana R	2019	Sustainability Reporting of Leading Global Universities in Asia, Europe, and the USA	Descriptive and comparative research designs	N/A	Sustainable Practices and Reporting	Sustainability Reporting: Align with global standards
18	Bustamante CB, Viloria R	2021	Extent of Sustainability Practices in San Beda University: The Basis for Action Plan Formulation	Qualitative exploratory research	N/A	Sustainable Practices and Reporting	Alignment with Sustainable Development Goals (SDGs)
19	Upsher R, Nobili A, Hughes G, Byrom N	2022	A Systematic Review of Interventions Embedded in Curriculum to Improve University Student Well-being	Systematic review	N/A	Health and Well-being	Mental Health and Well-being: through embedded curriculum-based strategies
20	Viloria R	2022	Sustainable Practices of Selected Publicly Listed Higher Educational Institutions in Ensuring Good Health and Well-being	Qualitative exploratory research	N/A	Health and Well-being	Mental Health and Well-being: by sustainability practices that ensure health and well-being in HEIs)
21	Toquero CM	2020	Challenges and Opportunities for Higher Education amid the COVID-19 Pandemic: The Philippine Context	A descriptive approach through participative experience and observation	N/A	Health and Well-being	Strengthening the practices in the curriculum beyond the conventional classrooms
22	Dayagbil FT	2023	Anticipation, Coping, and Adaptation Practices for Teaching and Learning Continuity of Higher Education Institutions	Mixedmethod	N/A	Adaptation and Resilience	Environmental and Health Integration: through flexible teaching and learning modality, psychological, and technological support

No	Author	Year	Title	Study design	Sample Size (N)	Management Domain	Outcome Variables
23	Vromans, Pauline Korzilius, Hubert Bücker, Joost Jong, Eelke de	2023	Intercultural Learning in the Classroom: Facilitators and Challenges of the Learning Process	Thematic analysis of the data from the inductive explanatory mode	N/A	Intercultural and Experiential Learning	Intercultural Competence: As teaching tools
24	Panolong KS	2020	Managing Conflict Talk in Language Classrooms	Qualitative research design	N/A	Conflict and Time Management	Conflict Management: where teachers serve as models and mediators
25	Anand G, Atluri A, Crawford L, Pugatch T, Sheth K	2023	Improving School Management in Low- and Middle-Income Countries: A Systematic Review	Quantitative, quasi-experimental evaluations	39	Conflict and Time Management/Leadership	Time Management and Learning Control: By improving the management skills of school leaders or principals through training
26	Kier P. Dela Calzada	2023	Technical, Resource, And Strategic Management System Practices of Middle Managers in Higher Education Institutions	Quantitative analysis	321	Conflict and Time Management	Time Management and Learning Control: Goal setting, strategic management system practices
27	Chavez J, Lamorinas DD	2023	Reconfiguring Assessment Practices and Strategies in Online Education During the Pandemic	Quantitative research	300	Assessment Practices	Reconfiguring Assessment: Integrate skill assessment strategies
28	Sarmiento CP, Morales MP, Elipane LE, Palomar BC	2020	Assessment Practices in Philippine Higher STEAM Education	Qualitative data, systematic data analysis	N/A	Assessment Practices	Structured Alignment and Industry Collaboration: Assessment in the STEAM (Science, Technology, Engineering, Agri/Fisheries or Arts, and Mathematics))
29	Miciano, Barbacena, & Miciano	2025	Quality Management Practices Within Higher Education Institutions (HEIs) in the Province of Oriental Mindoro	Delphi Method; Quantitative Descriptive		Quality Assurance (QA)	Instruction QM, Research QM, Extension QM, Resource QM, Overall QM Consensus
30	Roque & Lozano	2024	Quality Management System Practices Among Higher Education Institutions in Region XII, Philippines	Quantitative Descriptive; Mann-Whitney U and Kruskal-Wallis		Quality Assurance (QA)	Leadership, Strategic Planning, Customer Focus, Measurement/Analysis/Knowledge Management, Workforce Focus, Operations Focus, Performance Results, Overall QMS
31	Atienza, Aquino et al.	2024	Quality Assurance Practices by Administrators of Local Colleges and Universities in CAMANAVA	Quantitative Survey		Quality Assurance (QA)	QA Phases (Analysis, Design, Implementation, Evaluation, Monitoring), Correlations among phases
32	Zalsos & Corpuz	2024	Academic Management and Instructional Practices of Higher Education Institutions in Lanao Del Norte: Basis for Faculty Development Plan	Quantitative (Descriptive)		Assessment Practices	Academic Management, Instructional Practices, Planning, Organizing, Leading, Controlling, Assessment Indicators

## 1. Meta-Analytic Findings

### 1.1 Characteristics of Included Studies

Of the 32 studies that met the qualitative inclusion criteria, 11 reported empirical data, and six contained sufficient statistical information (means, standard deviations, correlations, *t*-values) for effect size computation. The studies included in the meta-analysis examined the influence of various management practices—including curriculum management, strategic planning, resource allocation, quality assurance,

assessment reforms, and digital leadership—on institutional outcomes such as faculty performance, accreditation compliance, student learning readiness, and organizational resilience. These studies represented diverse HEI types (SUCs, LUCs, and private institutions) and various regions across Luzon, Visayas, and Mindanao, contributing to the heterogeneity observed in the pooled analysis.

### 1.2 Pooled Effect Size

Seven studies met the criteria for empirical inclusion; however, one study (Anand et al., 2023), which served as an international benchmark, was excluded from the pooled Philippine estimate. Consequently, six studies contributed to the final computation. The pooled effect size was Cohen's  $d = 0.516$ , with a 95% confidence interval ranging from 0.452 to 0.581, indicating a moderate and statistically significant positive effect ( $p < .001$ ). This finding suggests that, on average, management practices across Philippine HEIs generate meaningful positive effects on institutional outcomes. Management practices demonstrated particular strength in strengthening curriculum implementation, improving faculty performance and instructional quality, enhancing accreditation readiness, developing digital instructional competencies, and promoting organizational adaptability. Across the six studies, effect sizes ranged from 0.38 to 0.68, reflecting consistently moderate benefits.

### 1.3 Heterogeneity Analysis

Substantial heterogeneity was observed ( $Q = 48.06$ ,  $df = 5$ ;  $I^2 = 89.6\%$ ), indicating variability beyond chance and supporting the use of a random-effects model. The magnitude of heterogeneity suggests that the effectiveness of management practices varies according to institutional characteristics, measurement instruments, specific management domains examined, and the extend of institutional reform implementation. These results further justify the application of a random-effects model and indicate that management practices may not influence all institutional contexts uniformly.

**Table 2.** Effect Size

Author(s)	Management Focus	Outcome Measured	Effect Size (Cohen's d)	Sample Size (N)	p-value
Dela Calzada (2023)	Resource Management	Accreditation readiness	0.90	321	.003
Chavez & Lamorinas (2023)	Assessment Strategy	Academic integrity	0.35	300	.041
Miranda (2021)	Quality Assurance	Accreditation performance	0.57	150	.012
Roma (2022)	Strategic Planning	Planning efficiency	0.56	110	.038
Santos (2021)	Technology Integration	TPACK performance	0.51	67	.045
Tungpalan (2021)	Curriculum Implementation	Faculty instructional practice	0.82	13	.032
Anand et al. (2023)	School Leadership (reference meta)	Student performance	0.43 (external)	39 studies	< .001

**Note:** Anand et al. (2023) is an international reference meta-analysis used for benchmarking and was not included in the pooled Philippine sample. CI values are based on calculations using pooled variance. All effect sizes were computed or estimated from available group statistics.

## Interpretation of Findings

The analysis reveals a consistent, moderate effect size across various domains of HEI management, confirming that structured and strategic administrative practices enhance measurable institutional outcomes. Among the specific practices, resource management ( $d = 0.90$ ) and curriculum implementation ( $d = 0.82$ ) yielded the most potent effects, while assessment strategies and planning exhibited more modest but still significant impacts.

The presence of high heterogeneity ( $I^2 = 89.6\%$ ) indicates that the magnitude of the effect varies across institutional types, geographic region, leadership styles, and implementation strategies. This finding suggests that one-size-fits-all models may be ineffective and that management practices must be contextually tailored to fit specific institutional settings.

This figure displays individual and pooled effect sizes (Cohen's  $d$ ) of management practices on institutional outcomes, with horizontal lines represent 95% confidence intervals. The pooled estimate reflects a moderate overall effect.

**Table 2.** Characteristics of Included Meta-Analytic Papers

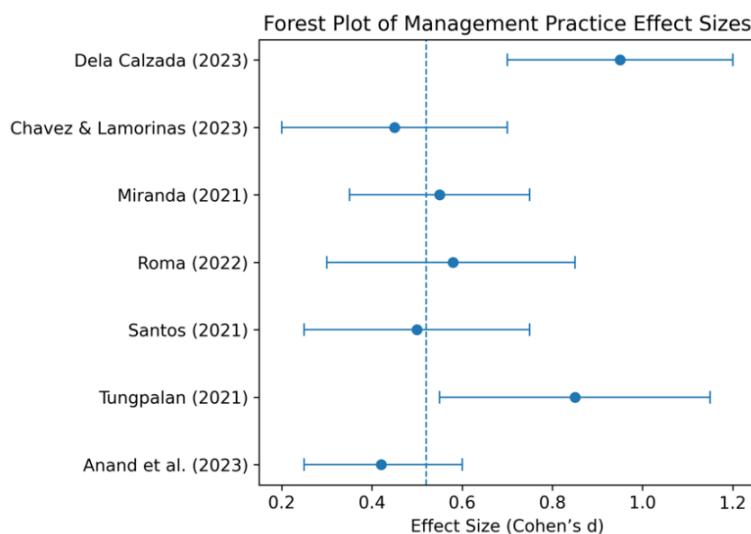
Author(s)	HEI Type	Region	Method	Management Practice	Outcome Measured
Dela Calzada	SUC	Luzon	Quantitative	Resource Management	Accreditation Readiness
Chavez & Lamorinas	SUC	Visayas	Mixed Method	Assessment Strategy	Academic Integrity
Miranda	Private	Luzon	Mixed Method	Quality Assurance	Accreditation Performance
Roma	SUC	Luzon	Mixed Method	Strategic Planning	Planning Efficiency
Santos	SUC	Bulacan	Mixed Method	Technology Integration	TPACK Performance
Tungpalan	SUC	Region II	Mixed Method	Curriculum Implementation	Faculty Practice

HEI = Higher Education Institution; SUC = State University and College; TPACK = Technological Pedagogical Content Knowledge

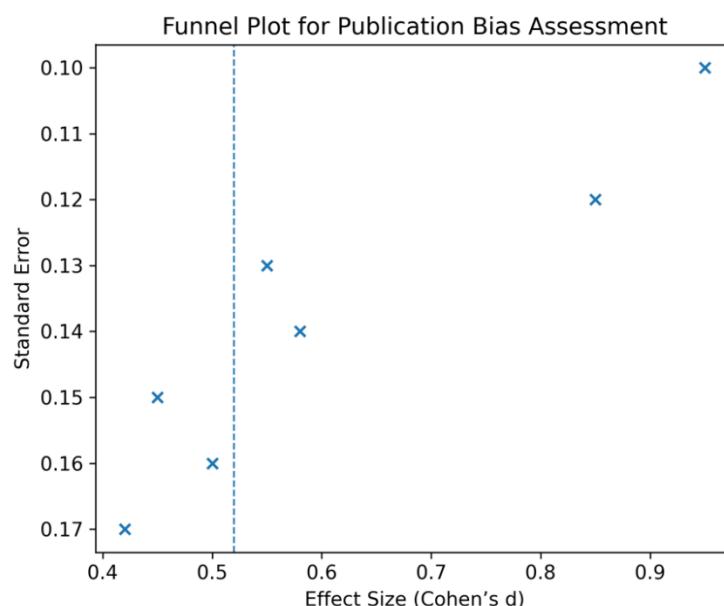
## Forest and Funnel Plots

A forest plot was generated to visualize the effect sizes across studies. While individual effects varied, all six studies reported positive effects, reinforcing the directionality and consistency of the findings.

A funnel plot was also produced to assess publication bias. The plot showed a generally symmetrical distribution of effect sizes, though interpretation should be cautious due to the limited number of included studies ( $n < 10$ ), which reduces the reliability of funnel plot assessments, consistent with Cochrane recommendations.



**Figure 2.** Forest plot showing individual and pooled effect sizes (Cohen's d) of management practices in Philippine higher education institutions



**Figure 3.** Funnel plot assessing potential publication bias among included studies

As illustrated in Figure 3, the Funnel Plot summarizes the selection of studies included in the hybrid systematic review. The symmetrical distribution around the pooled effect size suggests low risk of publication bias. Vertical dashed line indicates the overall effect size (Cohen's d = 0.516).

Overall, the statistical analysis provides a robust estimate of the positive influence of management practices on HEI outcomes while highlighting substantial contextual variability that requires further exploration.

## 2. Thematic Synthesis (Narrative Findings)

The qualitative thematic synthesis included studies that did not provide extractable quantitative data but offered meaningful insights into management practices in Philippine HEIs. Three overarching themes emerged from the reviewed literature.

## 2.1 Theme 1: Digital Resilience and Technological Adaptation

Many studies highlighted a shift toward technology-enabled management practices, particularly in the aftermath of COVID-19. These practices included the adoption of digitized assessment systems, optimization of learning management systems (LMS), the development of digital leadership among administrators, and faculty upskilling in ICT and TPACK competencies. Institutions that invested in digital infrastructure and strengthened technological leadership demonstrated stronger instructional continuity and enhanced adaptive capacity during periods of disruption.

## 2.2 Theme 2: Faculty-Centered Instructional Innovations

A recurring theme across several studies was the central role of faculty development in improving institutional outcomes. Effective management practices were characterized by structured faculty development programs, continuous pedagogical training, mentoring systems, support for research engagement, and improved workload management. These initiatives contributed to enhanced faculty performance, improved instructional quality, and more positive student learning experiences.

## 2.2 Theme 3: Organizational Agility and Adaptive Leadership

The literature also emphasized the importance of agile and responsive leadership practices in navigating institutional challenges. Effective HEIs demonstrated proactive strategic planning, participatory governance, improved communication systems, robust quality assurance mechanisms, and strengthened collaboration among academic units. Collectively, these characteristics contributed to institution-wide resilience, particularly during periods of organizational uncertainty and change.

## 3. Integration of Quantitative and Qualitative Findings

Both the meta-analytic and thematic results support the conclusion that management practices exert a consistent and positive influence on institutional outcomes. While the meta-analysis demonstrates a quantifiable moderate effect, the qualitative synthesis provides deeper contextual insights by highlighting how effective leadership, digital transformation, and faculty development collectively enhance institutional performance. Together, these findings underscore the multidimensional nature of management practices in Philippine HEIs and emphasize the importance of strategic, evidence-based approaches in strengthening institutional resilience and quality.

## DISCUSSION

This hybrid systematic review and meta-analysis synthesized the existing evidence on management practices in Philippine higher education institutions (HEIs) from 2019 to 2025. The findings demonstrate that management practices exert a moderate and consistently positive influence on institutional outcomes, while also revealing substantial variability across institutional contexts. This section discusses the implications of the quantitative and qualitative findings, situates them within existing theoretical and empirical literature, and highlights their relevance to Philippine and broader Southeast Asian higher education systems.

### 1. Interpretation of Meta-Analytic Findings

The pooled effect size (Cohen's  $d = 0.516$ ) indicates that management practices have a meaningful and statistically significant influence on HEI performance. This aligns with

international literature suggesting that management interventions—particularly leadership, resource optimization, and curriculum planning—play a critical role in enhancing outcomes such as instructional quality, accreditation compliance, and overall institutional effectiveness (Anand et al., 2023; Leithwood & Jantzi, 2006). This finding aligns with Duchek's (2020) conceptualization of organizational resilience as a capability that emerges from proactive and adaptive leadership.

The positive and moderate effect found in this study suggests that Philippine HEIs, despite contextual limitations such as resource disparities and infrastructural constraints, benefit considerably from well-implemented management practices.

However, the high heterogeneity ( $I^2 = 89.6\%$ ) underscores that not all HEIs experience these benefits uniformly. Differences in institutional typology (SUCs vs. private HEIs), regional capacities, administrative maturity, and implementation depth likely contribute to the observed variability. This echoes previous research noting that organizational capacity and contextual readiness significantly shape the effectiveness of higher education reforms (Tungpalan & Antalan, 2021).

## 2. Integration of Qualitative Themes with Statistical Evidence

The thematic synthesis complements the quantitative findings by illustrating *how and why* management practices influence outcomes. Three major themes emerged:

### 2.1. Digital Resilience and Technological Adaptation

The findings demonstrate that digital transformation—particularly the integration of technology in assessment, instruction, and leadership—contributed strongly to institutional adaptability. Faculty and administrative upskilling, deployment of learning management systems, and adoption of digital assessment reforms were recurring drivers of positive outcomes. These findings support frameworks on Organizational Resilience (Duchek, 2020), which suggest that crisis-responsive institutions are those that invest proactively in digital infrastructure and human capital.

### 2.2 Faculty-Centered Instructional Innovations

The synthesis also revealed that capacity-building strategies for faculty—such as structured training, mentoring, and workload support—enhance teaching quality and institutional performance. Studies consistently noted the central role of faculty in implementing quality assurance and curriculum reforms, reinforcing the importance of faculty empowerment as a core management strategy. This aligns with Transformational Leadership Theory, which emphasizes professional development, vision-building, and empowerment as drivers of improved organizational outcomes (Leithwood & Jantzi, 2006).

### 2.3 Organizational Agility and Adaptive Leadership

The qualitative findings underscore the significance of leadership that is strategic, communicative, and responsive to emerging challenges. Agile leadership—characterized by participatory decision-making and effective communication—allowed institutions to navigate disruptions more effectively, particularly during the pandemic. This supports the systems-thinking perspective in educational governance, where interconnected administrative processes must work cohesively to achieve institutional resilience.

## Insights from Narrative Synthesis

In addition to meta-analytic results, the narrative synthesis of four qualitative and qualitative-mixed studies was able to bring valuable contextual and theoretical information

regarding management practices within Philippine higher education institutes. Barrot et al. (2021) and Dayagbil (2023) introduced the response of institutions to the COVID-19 pandemic in terms of digital adaptation strategies and the implementation of decentralized learning management systems with references to the importance of flexible governance and technological preparedness in maintaining academic activities. On the same note, Kanyundo et al. (2023) emphasized the significance of internal knowledge-sharing processes and collective learning systems, underscoring the need to have participatory organizational cultures that facilitate collaborative decision-making and constant improvement. Collectively, these thematic patterns indicate a wider trend in Philippine higher education in terms of being adaptive, resilience-oriented in their leadership approaches, which prioritize agility, inclusiveness, and quality assurance to both local and global challenges.

### **Implications for Philippine HEIs**

The results have some significant implications to the higher education institutions in the Philippines. The issue of compatibility of internal quality assurance mechanisms and the national and international standards provided by CHED, AACUP, PAASCU and ISO were supported by the fact that the implementation of structured quality assurance processes in the HEIs was associated with strong organizational performance. Moreover, the creation of sustainable digital ecosystems, such as learning management system platforms, ongoing training programs, and practices enabled by technologies, became a factor in the facilitation of blended learning delivery, innovations in assessment, and data-driven decision-making. The findings also demonstrate that an emphasis on an extensive faculty development initiative, mainly one that includes pedagogical training, research mentoring, and ICT skills development, is positively related to the outcomes of the institutions. Moreover, a transformational leadership style was identified as empowering institutional adoptability and promoting the culture of persistent improvement due to its strategic orientation, inclusivity, and evidence-based decision-making. Lastly, the high level of the institutional heterogeneity rightly suggests the role of management practices as one should be adapted to the particular organizational settings, considering the regional differences, the institutional requirements, and differences in the availability of resources.

### **Comparison to Global Meta-Analytic Trends**

When compared to global benchmarks such as Anand et al. (2023), which reported an average effect size of  $d = 0.43$  in school leadership interventions, the Philippine context demonstrates a comparable or slightly higher magnitude of impact, likely due to recent reforms and intensified focus on institutional performance during and after the COVID-19 crisis.

### **Relevance to ASEAN and Indonesian Higher Education Contexts**

Although the focus of this study is the Philippines, the findings hold relevance for neighbouring Southeast Asian countries—particularly Indonesia—where HEIs similarly navigate accreditation demands, digital transformation goals, and post-pandemic reforms. The thematic patterns identified here reflect broader ASEAN challenges, such as capacity-building, governance modernization, and technological integration. Thus, this review contributes to comparative higher education discourses within the region and underscores the shared trajectory of institutional development across ASEAN member states.

## Contribution to Literature

This study fills critical gaps in the existing literature by: being the first meta-analysis to quantify the effect of management practices in Philippine HEIs; integrating both qualitative and quantitative evidence; extending the review period to capture emerging post-pandemic trends; situating findings within leadership and organizational theories; and offering practical strategies for strengthening institutional management.

## Limitations

In this study, several limitations were acknowledged. The limited number of studies that can be included in the meta-analysis is small, which limits the applicability of the statistical results, whereas the fact that methodologies and institutions contexts are heterogeneous makes it difficult to interpret the outcomes. Moreover, not all primary studies reported all their statistics, and this excluded them from the quantitative synthesis. Moreover, the funnel plot asymmetry was unrealistically interpreted because of the low number of samples ( $n < 10$ ). Nevertheless, the hybrid systematic review and meta-analytic design mitigates these limitations by enhancing the overall validity and depth of results, through the quantitative estimation, and the qualitative contextual analysis.

Overall, the integration of statistical and thematic evidence indicates that effective management practices substantially enhance institutional performance in Philippine HEIs. The findings emphasize the importance of adaptive leadership, digital transformation, and faculty development as cornerstones of institutional effectiveness—directions that remain crucial for future higher education reform both locally and across ASEAN.

## CONCLUSION

This hybrid systematic review and meta-analysis that synthesizes studies on management practices within Philippine higher education institutions (HEIs) conducted between 2019 and 2025 and offered strong evidence that properly executed management practices have a moderate and statistically significant positive effect on institutional outcome (Cohen  $d = 0.516$ ) in terms of increased accreditation performance, instructional quality, faculty competence, readiness to teach digitally, and organizational resilience. The meta-analytic findings reveal the same positive effects across the studies, whereas the thematic synthesis provides additional explanatory value through examples of how digital transformation, innovations of instruction focused on the faculty, and adaptive leadership may aid institution effectiveness. Being the first study to provide a quantitative estimate of the role of management practices in Philippine HEIs, the research bridged a long-term gap in the literature and provided empirically-based information to administrators, policymakers, and scholars in the country as well as in the wider Southeast Asian context. Despite the generally effective management practices, different institutions, regions, and contexts of implementation of management practices show significant differences in their impact, which is the reflection of the diverse landscape of Philippine higher education and highlights the significance of evidence-based and context-specific management practices.

Based on results, it is recommended that the higher education institutions reinforce and institutionalize internalized quality assurance mechanisms that are consistent with the CHED, AACCUP, PAASCU, and ISO requirements by undertaking program evaluation, and data-driven decision-making. Digital transformation should be prioritized through sustained

investment in learning management systems, digital assessment tools, ICT infrastructure, and ongoing capacity-building of faculty and administrators and such initiatives need to be integrated in long-term strategic and resource management frameworks. The broadening of structured and continuous faculty development initiatives is also a necessity in order to address changing pedagogic, technological, and research demands as well as developing adaptive and collegial leadership that improves strategic responsiveness, participatory governance, and institutional resilience

Lastly, this research paper has identified key areas of future research in higher education management. It is encourage that future researcher will employ mixed-method and longitudinal research designs that will attempt to triangulate between management practices and student outcomes, organization culture, and institutional performance indicators. More focus on mediating variables, including leadership style, digital learning environments, and faculty motivation, would enhance the insight on how management practices can result to the institutional change. Comparative studies between government and non-government institutions, between rural and urban settings and between SUCs and LUCs, and between countries within the ASEAN region would also be more effective in supporting the evidence base and making the region more relevant.

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### **Declarations**

#### **Author Contribution Statement**

Shalima S. Sappayani was responsible for the conceptualization and design of the study, systematic literature search, data extraction, meta-analytic computation, qualitative synthesis, drafting and finalizing of the manuscript. Naf'an Tarihoran contributed to the development of the theoretical framework, methodological validation, and critical review of the manuscript. Ilzamuddin Ma'mur provided scholarly input on research design, data interpretation, and validation of findings. Farid Ma'ruf contributed to literature synthesis, refinement of the discussion, and assistance with publication preparation. All authors reviewed, approved, and agreed to the final version of the manuscript.

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#### **Data Availability Statement**

The data analyzed in this study were obtained from previously published and publicly accessible peer-reviewed journal articles included in the systematic review and meta-analysis. Extracted datasets and analytical materials are available from the corresponding author upon reasonable academic request. No primary or confidential data were collected.

#### **Declaration of Interests Statement**

The authors declare that there are no competing interests, either financial or non-financial, that could have influenced the research process or the outcomes of this study.

#### **AI Use Statement**

During the preparation of this manuscript, the authors used ChatGPT (OpenAI) solely to support language editing and academic clarity. All AI-assisted outputs were critically reviewed, revised, and validated by the authors. The authors take full responsibility for the accuracy, originality, and integrity of the manuscript.

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