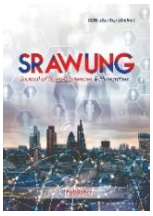

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Institutional Sustainability and Quality Enhancement in Cambodian Higher Education: A Mixed-Methods Inquiry

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ABSTRACT

This study examined how Cambodian higher education institutions (HEI) enhance their educational development in terms of quality improvement and institutional sustainability. A mixed-method was employed in the study. First, a quantitative survey with 385 participants using questionnaires was done, followed by an in-dept interview was conducted with 24 participants who are leaders and managers from 12 HEIs in Phnom Penh. The descriptive statistics and thematic analysis were used to analyse quantitative and qualitative data respectively. Findings from the study show that the strongest factor contributing to HEI sustainability is "sustainability-related quality practices" with (48.8%) agreed, followed by "teaching methods" (57.4%), "digital capabilities" (44.9%), "quality assurance" (46.5%), governance and management" (51.8%). The findings also show the main constraints faced by the HEIs currently that "Financial and infrastructural" was the major obstacles agreed by 45.5% respondents followed by "shortage of digital systems" (55.1%). Moreover, participants expressed their views in the interview that there was a concern on the "workload of staff", "environment pressures", "ICT/infrastructure expenses", and "autonomy" which contribute to the quality improvement of the HEI and as a result affects the HEI sustainability. The study also discusses some controversies issues for instance: (i) senior leadership commitment versus faculty/department implementation, (ii) professional development versus regular and limitation of access." Findings from the study contribute to the HEI policy development.

Keywords: *Cambodia Higher Education, Institutional Sustainability, Professional Development, Quality Assurance, Quality Enhancement*

INTRODUCTION

Higher education institutions (HEIs) have long been regarded as foundational pillars of national development, responsible not only for producing skilled graduates but also for advancing knowledge, fostering innovation, and contributing to the broader goals of societal transformation (Chheng, 2024; In, 2025). In the contemporary global context, the role of HEIs has expanded considerably beyond conventional academic functions. Institutions are now expected to actively integrate sustainability principles into their governance, curriculum design, research agendas, and community engagement practices (Žalėnienė & Pereira, 2021). This expectation is anchored in the United Nations 2030 Agenda for Sustainable Development and its associated Sustainable Development Goals (SDGs), particularly SDG 4, which calls for inclusive and quality education, and SDG 8, which promotes decent work and economic growth. In this landscape, quality enhancement in higher education has emerged as both an institutional imperative and a policy priority, especially in developing nations where the capacity of HEIs to fulfill these expanded roles remains constrained by structural, financial, and human resource limitations (Menon & Suresh, 2020).

Cambodia presents a particularly instructive case in this regard. Since the late 1990s, the country has experienced rapid expansion in its higher education sector, with the number of HEIs growing from eight institutions in 1997 to more than 125 by the early 2020s, accompanied by a substantial increase in student enrolment (Heng et al., 2023). However, this quantitative expansion has not been matched by proportional improvements in educational quality, institutional governance, or research capacity. As a result, Cambodian HEIs face persistent challenges related to graduate employability, curriculum relevance, limited institutional autonomy, and inadequate public funding. The Ministry of Education, Youth and Sport (MoEYS) has introduced a series of reform initiatives, including the Higher Education Quality and Capacity Improvement Project (HEQCIP) and the Higher Education Improvement Project (HEIP), to address these shortcomings (Mollah, 2021). Nevertheless, the implementation of these reforms has been uneven, and significant gaps remain between stated policy goals and actual institutional practice.

A growing body of scholarly literature has examined the intersections between quality assurance, sustainability, and higher education governance in diverse national contexts. Filho et al. (2020) argued that sustainability leadership within HEIs is frequently impeded by institutional inertia, inadequate resource allocation, and the absence of coherent strategic frameworks that bridge academic aspirations with operational realities. Their study, drawing on a cross-national sample, concluded that HEIs in both developed and developing contexts tend to treat sustainability as a secondary rather than a core institutional mandate, often reducing it to isolated curriculum modules rather than embedding it across all institutional functions. This finding has particular resonance for countries like

Cambodia, where the structural preconditions for sustained quality improvement remain fragile. Similarly, Trevisan et al. (2023) established that digital transformation within HEIs has become increasingly central to sustainability efforts but that progress in this domain is highly uneven across institutional and national contexts, with developing countries exhibiting considerably greater barriers to meaningful digital integration.

Further empirical grounding is provided by research specifically addressing the Cambodian higher education context. Heng et al. (2022) found that Cambodian academics held fragmented conceptions of research and its relationship to teaching quality, a condition they attributed to systemic underfunding, absence of clear academic career pathways, and heavy teaching loads that precluded sustained engagement with scholarly inquiry. These conditions directly undermine the institutional capacity of Cambodian HEIs to pursue quality enhancement in any meaningful sense. Heng and Doeur (2024) further observed that Cambodia's aspiration to transition toward a knowledge-based society remains constrained by low higher education enrollment rates, a shortage of doctoral-qualified faculty, and weak innovation infrastructure. These studies collectively illustrate a structural paradox confronting Cambodian HEIs: institutions are expected to function as agents of sustainable development while lacking the foundational capacities to do so.

Despite this growing body of literature, a number of critical gaps remain inadequately addressed. Most existing studies on sustainability in HEIs have been conducted in Western or high-income contexts, rendering their findings only partially transferable to the specific institutional realities of Southeast Asian developing countries such as Cambodia. While sector-level analyses have documented the broad challenges facing Cambodian higher education, there is a relative scarcity of empirical studies that investigate, from multiple stakeholder perspectives, the practical mechanisms through which Cambodian HEIs attempt to enhance quality in pursuit of institutional sustainability. The intersection between quality assurance mechanisms, digital capability development, and sustainable governance practices within the Cambodian context has also not been examined through a convergent mixed-methods design capable of capturing both statistical patterns and contextual narratives. Accordingly, this study seeks to address these gaps by pursuing three interrelated objectives: first, to identify the key challenges facing quality enhancement efforts within Cambodian HEIs; second, to examine how globally recognized quality improvement practices can be adapted to the Cambodian institutional context; and third, to identify strategic approaches that support the long-term sustainability of HEIs operating within Cambodia's particular socioeconomic and governance environment.

The novelty of this study lies in its convergent mixed-methods design, which combines quantitative data from 361 student and staff participants across twelve HEIs in Phnom Penh with in-depth qualitative interviews with 24 senior leaders and

institutional managers. This methodological approach enables a more nuanced understanding of quality enhancement dynamics than is achievable through either quantitative surveys or qualitative inquiry alone. By centering the analysis on an understudied national context within Southeast Asia, this study also contributes directly to filling the geographical gap in the international literature on HEI sustainability. The findings are intended to inform evidence-based policy development at both institutional and national levels, offering practical recommendations grounded in the lived realities of Cambodian higher education stakeholders.

LITERATURE REVIEW

Theoretical Foundations: Human Capital Theory and Educational Quality

The relationship between higher education and sustainable national development has long been theorized through the lens of Human Capital Theory (HCT), which posits that investment in education enhances the productive capacity of individuals, thereby generating broader economic and social returns (Mamuli, 2020; Mbithi et al., 2021). Originally grounded in the classical economic tradition and formalized in the 1960s, HCT continues to inform contemporary higher education policy, particularly in developing countries where the productivity gains from educational investment are considered critical to poverty reduction and economic transformation (Hanushek & Woessmann, 2020). In the context of Cambodian HEIs, this theoretical framework is especially pertinent, as national development strategies have consistently positioned higher education as a primary vehicle for building the skilled human capital required to support the country's transition toward a knowledge-based economy. However, recent scholarship has argued that a narrow application of HCT, one focused solely on graduate productivity and labor market outcomes, risks neglecting the broader civic, cultural, and environmental dimensions of education that are equally essential to sustainable development (Fomba et al., 2023).

The concept of educational quality, as it applies to HEIs, extends well beyond the production of employable graduates. Drawing on foundational multidimensional framework, scholars have continued to develop more nuanced conceptions of quality that encompass fitness for purpose, value for money, and transformative capacity (Harvey, 2024; Harvey & Green, 1993). In recent empirical work, Herlambang et al. (2021) conducted across Indonesian HEIs, demonstrated that educational processes, practical activities, and research engagement are the three most significant predictors of both graduate competencies and employability, with physical facilities serving as a key enabling condition. These findings reinforce the view that quality in higher education is a systemic property that cannot be reduced to any single institutional input, and they suggest that resource constraints in facilities and research infrastructure may have particularly severe consequences for institutional quality in contexts such as Cambodia.

Quality Assurance and Institutional Sustainability in Higher Education

Quality assurance (QA) has become a central mechanism through which governments and institutions attempt to operationalize quality enhancement in higher education. In developing country contexts, QA systems often function as both regulatory instruments and capacity-building tools, tasked with bridging the gap between institutional aspirations and actual educational outcomes (Asamoah et al., 2025). Filho et al. (2020) demonstrated in a cross-national study that the effectiveness of sustainability leadership within HEIs is closely tied to the presence of coherent internal QA frameworks, noting that institutions lacking systematic quality monitoring tend to treat sustainability as an optional add-on rather than a core institutional commitment. This finding is consistent with the Cambodian situation, where MoEYS-mandated QA requirements have been adopted at a formal level by many HEIs without being consistently embedded into curriculum design, research planning, or governance practice. Nugraha et al. (2023) similarly found that meaningful institutional sustainability requires aligning QA processes with student competency outcomes and graduate employability, rather than treating accreditation as a standalone compliance exercise.

The governance dimension of institutional sustainability is equally critical. Research consistently shows that sustainable HEIs require not only formal QA systems but also leadership structures capable of translating policy commitments into operational practice. Fomba et al. (2023) analyzing data from 82 developing countries, found that deterioration in institutional governance, including poor resource management and weak policy implementation, significantly reduces the effectiveness of public spending on education and undermines teaching quality. In Cambodia's predominantly centralized governance model, this dynamic is particularly pronounced, as institutional leaders often lack the autonomy required to implement sustainability-oriented reforms in response to local conditions (Lord & Prior, 2024). These structural constraints, compounded by chronic underfunding, create conditions in which even well-designed QA frameworks may fail to produce meaningful improvements in educational quality at the institutional level.

Digital Capability and Sustainability Practices in Southeast Asian HEIs

The integration of digital technologies into higher education has emerged as a strategic priority for institutions seeking to enhance educational quality and advance sustainability goals simultaneously. Trevisan et al. (2023) identified digital governance, sustainable campus infrastructure, and technology-enhanced pedagogies as the three most significant research themes connecting digital transformation with sustainability in HEIs. Their analysis also highlighted that progress in digital integration is markedly uneven across institutional and national contexts, with developing countries facing substantially greater barriers related to infrastructure costs, staff digital competency, and access to reliable connectivity. These barriers are well documented in the Southeast Asian context, where only a

small fraction of higher education research on digital transformation has focused on Cambodia, reflecting both the limited scale of the country's digital infrastructure and the nascent state of its higher education research culture.

Despite these constraints, digital capability development has been identified as a key lever for improving both teaching quality and institutional resilience in the region. Institutions that have successfully integrated digital systems report gains in administrative efficiency, expanded learning resource access, and improved responsiveness to student and labor market needs. However, scholars caution that digitalization alone does not guarantee quality improvement. The absence of institutional support structures, including adequate staff training, technology maintenance budgets, and embedded digital pedagogical frameworks, often renders digital investments ineffective or unsustainable over time (Deacon et al., 2023). In the Cambodian context, this dynamic is visible in the uneven adoption of digital learning platforms across HEIs, where some institutions benefit from internationally supported digital infrastructure while others rely on informal, under-resourced arrangements. Addressing this disparity requires not only capital investment but also sustained governance commitment to digital capacity building as a component of broader quality enhancement strategy.

RESEARCH METHODOLOGY

This study employed a convergent parallel mixed-methods research design, integrating both quantitative and qualitative approaches to comprehensively evaluate quality enhancement practices within Cambodian higher education institutions (HEIs) and their relationship to institutional sustainability. This design was selected because it allows simultaneous data collection from multiple sources, enabling triangulation across findings and improving both the validity and interpretive depth of results (Creswell & Poth, 2024). The quantitative component utilized structured Likert-scale questionnaires distributed to students and academic staff, measuring constructs related to institutional factors, current sustainability practices, challenges in maintaining sustainability, and alignment with national and international quality standards. Concurrently, the qualitative component employed semi-structured interviews with senior institutional leaders and managers, supported by observational checklists and document analysis, to capture contextual insights into strategic priorities, governance constraints, and sustainability-oriented institutional behaviors. This convergence of quantitative patterns and qualitative narratives permitted a more nuanced and institution-sensitive analysis than either method could produce independently.

To determine a statistically valid sample size from an estimated population of 10,000 bachelor's, master's, and doctoral degree students across twelve HEIs in Phnom Penh, Slovin's formula was applied as follows:

$$n = \frac{10{,}000}{1 + 1{,}000(0.05)^2} = \frac{10{,}000}{1 + 25} = \frac{10{,}000}{26} = 385$$

Accounting for potential non-responses and incomplete submissions, 361 usable responses were retained for quantitative analysis. Stratified random sampling and simple random sampling were applied to ensure proportional and unbiased representation across institutions and academic levels. For the qualitative component, purposive sampling combined with quota sampling was used to select 24 participants — two from each of the twelve institutions — with preference given to individuals with the longest employment history, ensuring the deepest institutional knowledge. Participants included Presidents, Vice Rectors, Deans, Vice Deans, Department Directors, and Deputy Department Directors. Table 1 summarizes the sampling framework applied across both components of the study.

Table 1 Summary of Sampling Techniques and Participant Selection

Component	Sampling Technique	Target Group	Selection Criteria	Purpose
Qualitative	Purposive & Quota Sampling	Senior and middle managers	2 per institution (n = 24); longest employment history prioritized	In-depth institutional insights on sustainability and quality practices
Quantitative	Stratified & Simple Random Sampling	Bachelor's, Master's, and PhD students across 12 HEIs	Randomly selected from enrollment lists; n = 361 via Slovin's formula	Representative measurement of student perceptions on institutional quality

Source: Author's Analysis (2025)

To ensure the reliability and validity of the research instruments, pilot testing and methodological triangulation were conducted prior to full-scale data collection. Internal consistency was assessed using Cronbach's alpha, calculated as:

$$\propto = \frac{kr}{1 + (k-1)r}$$

Where *k* represents the number of items and *r* represents the mean inter-item correlation. As presented in Table 2, an alpha coefficient of 0.842 was obtained across the five sustainability practice items (CP1–CP5), exceeding the accepted threshold of 0.70 and confirming good internal consistency (George & Mallery, 2019). Quantitative data were subsequently analyzed using IBM SPSS Statistics Version 26, employing descriptive statistics, frequency distributions, ANOVA, t-tests, correlation, and linear regression. Qualitative interview transcripts were analyzed through inductive thematic analysis, with emerging themes coded around

quality assurance, institutional governance, digital integration, and sustainability challenges. Triangulation was applied throughout the analysis to cross-validate quantitative patterns against qualitative narratives and documentary evidence, thereby strengthening the overall credibility and transferability of the findings.

Table 2 Cronbach's Alpha Reliability Interpretation and Study Result

Cronbach's Alpha (∝)	Interpretation
≥ 0.90	Excellent
0.80 – 0.89	Good
0.70 – 0.79	Acceptable
0.60 – 0.69	Questionable
0.50 – 0.59	Poor
< 0.50	Unacceptable

Source: George and Mallery (2019)

Note: The present study obtained α = 0.842 (N = 361, 5 items), indicating good internal consistency

RESULTS AND DISCUSSION

Quantitative Findings: Demographic Profile of Respondents

The quantitative phase of the study involved 361 valid respondents drawn from twelve higher education institutions (HEIs) in Phnom Penh. Demographic data were collected in Part 1 of the questionnaire, covering age, gender, university affiliation, academic degree, institutional position, and years of experience in higher education. Descriptive statistics including frequencies and percentages were generated using IBM SPSS Statistics Version 26. The participant profile represented a range of academic levels and institutional roles across both public and private HEIs, ensuring that the quantitative findings reflected diverse stakeholder perspectives on quality enhancement and institutional sustainability.

Institutional Factors Contributing to Sustainability (FS1–FS5)

The first research question asked what key challenges face quality enhancement in Cambodian HEIs. To address this, respondents were asked in Part 2A of the questionnaire to rate five institutional factors in terms of their contribution to sustainability on a five-point Likert scale. Table 3 presents the descriptive statistics, while Table 4 provides a ranked summary of these factors. Agreement levels were interpreted as Low (1.00–2.49), Moderate (2.50–3.49), and High (3.50–5.00).

Table 3 Descriptive Statistics of Institutional Factors Contributing to Sustainability (n = 361)

Code	Institutional Factor	Mean	SD	Agreement Level
FS1	Institutional leadership supports sustainability initiatives	3.19	0.96	Moderate
FS2	Governance and management systems are effective	3.70	0.89	High
FS3	Adequate learning facilities and infrastructure are provided	3.40	0.87	Moderate
FS4	Academic programs are relevant to national development needs	3.81	0.80	High
FS5	The institution promotes innovation and digital transformation	3.58	0.87	High

Source: Author's Analysis (2025)
Note: Agreement levels were interpreted as Low (1.00–2.49), Moderate (2.50–3.49), and High (3.50–5.00).

Table 3 reveals that respondents showed moderate to high agreement across all five institutional sustainability factors. The highest mean was recorded for the relevance of academic programs to national development needs (FS4: M = 3.81, SD = 0.80), followed by governance and management effectiveness (FS2: M = 3.70, SD = 0.89) and promotion of innovation and digital transformation (FS5: M = 3.58, SD = 0.87), all achieving high agreement levels. In contrast, the adequacy of learning facilities and infrastructure (FS3: M = 3.40, SD = 0.87) and leadership support for sustainability initiatives (FS1: M = 3.19, SD = 0.96) registered only moderate agreement, indicating that physical infrastructure conditions and active leadership commitment remain underdeveloped areas across many institutions. Table 2 presents the ranking of these factors to allow clearer comparison.

Table 4 Ranking of Institutional Factors Contributing to Sustainability

Rank	Institutional Factor	Mean	SD
1	Academic program relevance (FS4)	3.81	0.80
2	Governance and management effectiveness (FS2)	3.70	0.89
3	Innovation and digital transformation (FS5)	3.58	0.87
4	Facilities and infrastructure adequacy (FS3)	3.40	0.87
5	Leadership support for sustainability (FS1)	3.19	0.96

Source: Author's Analysis (2025)

The ranking in Table 4 confirms that curriculum responsiveness and governance are the most positively perceived institutional enablers of sustainability among Cambodian HEIs, whereas physical infrastructure and senior leadership commitment are comparatively weaker. The moderate score on leadership support (FS1) is particularly noteworthy, as it suggests a gap between institutional

awareness of sustainability priorities and the active, strategic commitment of leadership to drive them operationally. This finding aligns with the broader challenge identified in the Cambodian higher education literature that governance fragmentation and leadership constraints consistently impede reform progress (Heng, 2024).

Current Sustainability Practices in Higher Education Institutions (CP1–CP5)

Part 2B of the questionnaire examined the degree to which sustainability practices are currently embedded across five institutional domains, namely sustainability-related teaching quality, teaching methods, research activities, digital systems, and quality assurance mechanisms. Table 5 presents the full frequency distributions for each item, providing a detailed picture of how respondents are distributed across the scale.

Table 5 Frequency Distribution of Current Sustainability Practices (CP1–CP5, n = 361)

Item	Description	Scale	Frequency	Percent %	Cumulative %
CP1	Sustainability-related quality practices in teaching	2.00	21	5.8	5.8
		3.00	133	36.8	42.7
		4.00	176	48.8	91.4
		5.00	31	8.6	100.0
CP2	Teaching methods integrating sustainability	2.00	20	5.5	5.5
		3.00	134	37.1	42.7
		4.00	115	31.9	74.5
		5.00	92	25.5	100.0
CP3	Research activities incorporating sustainability	2.00	8	2.2	2.2
		3.00	155	42.9	45.2
		4.00	98	27.1	72.3
		5.00	100	27.7	100.0
CP4	Digital systems supporting sustainability	2.00	48	13.3	13.3
		3.00	151	41.8	55.1
		4.00	113	31.3	86.4
		5.00	49	13.6	100.0
CP5	Quality assurance mechanisms embedding sustainability	2.00	30	8.3	8.3
		3.00	131	36.3	44.6
		4.00	168	46.5	91.1
		5.00	32	8.9	100.0

Source: Author's Analysis (2025)

The frequency distributions in Table 5 reveal a clearly differentiated pattern across the five sustainability domains. Teaching-related practices emerged as the strongest area: 48.8% of respondents agreed and a further 8.6% strongly agreed with CP1, indicating that sustainability-related quality practices in teaching delivery are relatively well adopted across Cambodian HEIs. Teaching methods (CP2) recorded an even more positive combined response, with 57.4% expressing

agreement or strong agreement, while research activities (CP3) recorded the highest proportion of strong agreement at 27.7%, signaling growing research engagement with sustainability themes. Conversely, digital systems (CP4) emerged as the most problematic domain, with 55.1% of respondents selecting values of 2 or 3, representing limited or inconsistent digital integration in support of sustainability objectives, and the highest disagreement rate of 13.3% across all items. Quality assurance mechanisms (CP5) showed moderate adoption, with 46.5% agreeing but a substantial 36.3% selecting the neutral option, suggesting that sustainability has not yet been explicitly and consistently embedded within formal QA frameworks across the sector. Table 6 presents the descriptive statistics alongside the scale reliability result.

Table 6 Descriptive Statistics and Reliability of Current Sustainability Practices Scale

Item	Description	Mean	SD
CP1	Sustainability-related quality practices in teaching	3.60	0.79
CP2	Teaching methods integrating sustainability	3.77	0.89
CP3	Research activities incorporating sustainability	3.80	0.87
CP4	Digital systems supporting sustainability	3.45	0.89
CP5	Quality assurance mechanisms embedding sustainability	3.56	0.73
Scale Reliability		**Cronbach's α = 0.842**	**N of Items = 5**

Source: Author's Analysis (2025)

As confirmed in Table 6, CP3 achieved the highest mean score (M = 3.80, SD = 0.87), followed by CP2 (M = 3.77, SD = 0.89), while CP4 recorded the lowest mean (M = 3.45, SD = 0.89). The overall Cronbach's alpha of 0.842 confirmed good internal consistency across the five items, meeting the threshold for reliable measurement (George & Mallery, 2019). Taken together, these findings indicate that teaching and research represent comparative strengths in sustainability integration, whereas digital systems and QA mechanisms represent areas where institutional adoption remains partial and inconsistent.

Challenges in Maintaining Sustainability (CM1–CM5)

Addressing research question one directly, Part 2C of the questionnaire examined the primary challenges encountered by HEIs in maintaining their sustainability efforts across five constraint areas: financial resources, human resources, infrastructure, governance, and institutional management. Table 7 presents the detailed frequency distributions for each challenge item.

Table 7 Frequency Distribution of Challenges in Maintaining Sustainability (CM1–CM5, n = 361)

Item	Description	Scale	Frequency	Percent %	Cumulative %
CM1	Financial constraints limiting sustainability	2	37	10.2	10.2
		3	160	44.3	54.6
		4	110	30.5	85.0
		5	54	15.0	100.0
CM2	Staffing limitations impeding sustainability	1	4	1.1	1.1
		2	42	11.6	12.7
		3	179	49.6	62.3
		4	132	36.6	98.9
		5	4	1.1	100.0
CM3	Infrastructure limitations affecting sustainability	1	3	0.8	0.8
		2	42	11.6	12.5
		3	154	42.7	55.1
		4	147	40.7	95.8
		5	15	4.2	100.0
CM4	Governance and policy alignment challenges	1	2	0.6	0.6
		2	17	4.7	5.3
		3	206	57.1	62.3
		4	122	33.8	96.1
		5	14	3.9	100.0
CM5	Institutional management constraining sustainability	1	3	0.8	0.8
		2	10	2.8	3.6
		3	161	44.6	48.2
		4	146	40.4	8806
		5	41	11.4	100.0

Source: Author's Analysis (2025)

The distributions in Table 7 reveal that financial and infrastructural constraints are the most acutely experienced challenges across Cambodian HEIs. For CM1, 45.5% of respondents agreed or strongly agreed that inadequate funding limits the capacity of their institutions to invest in sustainability efforts, including curriculum development, staff training, research activities, and digital infrastructure development. Infrastructure constraints (CM3) were similarly prominent, with 44.9% expressing agreement or strong agreement that physical and technological resource gaps directly impede sustainability practices, particularly in supporting digital systems and environmentally sustainable campus operations. Staffing challenges (CM2) attracted a high neutral response of 49.6%, with 37.7% also expressing agreement, suggesting that the impacts of limited specialist expertise, insufficient staff capacity, and excessive workloads are broadly felt but not always perceived as the most severe constraints relative to financial and infrastructure issues. Governance-related challenges exhibited a somewhat distinct response pattern: CM4 drew the highest neutral response across all items at 57.1%, while CM5 showed a notably stronger level of endorsement, with 51.8% of respondents

agreeing or strongly agreeing that institutional management constraints impede sustainability, indicating that day-to-day management and decision-making processes are felt as active barriers more acutely than formal governance frameworks. In sum, the quantitative evidence identifies financial limitations, infrastructure deficits, and institutional management constraints as the three most significant challenges facing quality enhancement and sustainability in Cambodian HEIs.

National and International Alignment Strategies (SN1–SN5)

In addressing research question two, Part 2D of the questionnaire examined the degree to which HEIs align their institutional strategies and operations with national and international quality standards. Table 8 presents the detailed frequency distributions across all five alignment items.

Table 8 Frequency Distribution of National and International Alignment Strategies (SN1–SN5, n = 361)

Item	Description	Scale	Frequency	Percent %	Cumulative %
SN1	Internal QA systems aligned with national standards	2.00	29	8.0	8.0
		3.00	175	48.5	56.5
		4.00	124	34.3	90.9
		5.00	33	9.1	100.0
SN2	Strategies aligned with international accreditation	2.00	49	13.6	13.6
		3.00	91	25.2	38.8
		4.00	144	39.9	78.7
		5.00	77	21.3	100.0
SN3	Collaborative strategies and external partnerships	2.00	43	11.9	11.9
		3.00	138	38.2	50.1
		4.00	119	33.0	83.1
		5.00	61	16.9	100.0
SN4	Systematic efforts to meet global QA standards	2.00	41	11.4	11.4
		3.00	112	31.0	42.4
		4.00	120	33.2	75.6
		5.00	88	24.4	100.0
SN5	Alignment with national education reform goals	2.00	5	1.4	1.4
		3.00	204	56.5	57.9
		4.00	136	37.7	95.6
		5.00	16	4.4	100.0

Source: Author's Analysis (2025)

The distributions in Table 8 indicate that international accreditation and external QA alignment represent the most actively pursued strategic directions among the sampled HEIs. In SN2, 61.2% of respondents agreed or strongly agreed that their institutions have implemented strategies aligned with international quality standards or external accreditation, reflecting growing institutional awareness of the competitive and reputational value of formal certification. Similarly, 57.6% of

respondents endorsed SN4, confirming that systematic efforts to meet global QA benchmarks are increasingly embedded within institutional planning processes. Collaborative strategies and external partnerships (SN3) showed a balanced distribution, with approximately half indicating moderate engagement and the other half expressing agreement or strong agreement, pointing to considerable variability in the depth and sustainability of cross-institutional and cross-border partnerships. In contrast, alignment with national education reform goals (SN5) recorded the highest neutral response across all alignment items at 56.5%, with only 42.1% expressing agreement or strong agreement. Alignment with internal QA systems and national standards (SN1) showed a similarly cautious profile, with 48.5% selecting the neutral option. These patterns suggest that national policy reforms are formally acknowledged at the institutional level but are not yet consistently or systematically translated into day-to-day operational practice, reflecting selective rather than comprehensive adoption of reform mandates across the sector.

Qualitative Findings: Institutional Leaders' Perspectives

To complement and contextualise the quantitative results, the qualitative phase involved 24 participants drawn from 12 HEIs. The participant profile comprised 4 Presidents or Rectors, 2 Vice Presidents or Vice Rectors, 7 Deans, 4 Vice Deans, 2 Department Directors, and 5 Deputy Department Directors. This hierarchically diverse sample ensured that themes emerging from the interviews carried both strategic and operational relevance. Thematic analysis of interview transcripts generated four principal themes, each of which deepens the interpretive account provided by the quantitative findings.

The first theme, *sustainability through curriculum and partnership*, revealed that sustainability was rarely institutionalised as a standalone curricular objective within the sampled HEIs. Instead, it was typically embedded through partnerships with government agencies, industry stakeholders, and foreign academic institutions that created opportunities for curriculum revision and program development aligned with sustainability principles. Participants generally described these collaborative arrangements as the primary vehicle through which sustainability entered academic programs, though they consistently noted that the depth, continuity, and institutional ownership of such partnerships varied greatly across institutions depending on available resources and leadership priorities. This finding directly addresses research question three by showing that external partnerships, rather than internally designed sustainability frameworks, currently represent the most accessible strategic pathway for Cambodian HEIs seeking to advance sustainability in their academic offerings.

The second theme, *digital practice and uneven institutional capacity*, reinforced and contextualised the quantitative finding that CP4 recorded the lowest mean among current sustainability practice items. Participants across institutions and roles described digital integration as aspirational rather than systematically

achieved. While some institutions benefit from internationally supported digital learning platforms and e-library initiatives, others rely on informal arrangements with limited technical support and unreliable connectivity. Leaders identified three compounding factors: the high cost of ICT infrastructure relative to institutional budgets, the absence of sustained staff digital training programs, and the lack of formal digital governance policies that would ensure consistent use of available technologies. Several deans noted that academic staff were frequently expected to integrate digital tools into their teaching without receiving adequate institutional preparation, a finding that aligns with Ban and Heng (2023) identification of inadequate infrastructure and limited professional development as central impediments to quality improvement in Cambodian HEIs.

The third theme, *workload, autonomy, and unequal access to professional development*, revealed a structural tension operating across all twelve institutions. Academic staff carrying simultaneous teaching, administrative, and research obligations consistently reported insufficient time for meaningful engagement with professional development programs. While institutional leaders acknowledged the existence of training opportunities, participants at faculty and department levels described access as irregular, externally funded rather than institutionally sustained, and frequently disrupted by scheduling conflicts. This inequity was particularly pronounced at smaller, less-resourced institutions, where professional development was among the first activities deprioritised under budget pressure. Several participants used the phrase "available but not always accessible" to characterize the professional development situation, pointing to a systemic gap between policy intentions and operational realities that directly constrains the capacity of academic staff to contribute to quality improvement.

The fourth theme, *leadership commitment versus implementation capacity*, captured the most prominent institutional controversy in the qualitative data and bears directly on all three research questions. Senior leaders expressed consistent commitment to quality enhancement and sustainability; however, faculty and department heads reported that these commitments often remained aspirational rather than operationally supported. Reforms driven from the top frequently stalled at departmental levels due to unclear accountability structures, insufficient dedicated resources for implementation, and weak institutional systems connecting strategic planning with frontline practice. A related controversy emerged around professional development: policy-level endorsement of capacity building was not matched by the regularity, depth, or equity of access needed for it to generate sustained quality improvements. These institutional controversies are consistent with the broader governance fragmentation identified by Heng (2024) which documented how structural barriers at the institutional level prevent even motivated academics from advancing their professional capacities.

The findings of this study collectively address all three research questions and offer contributions that both support and extend prior scholarship in meaningful

ways. In response to research question one, which asked what key challenges face quality enhancement in Cambodian HEIs, the study identifies a multi-layered constraint structure in which financial limitations, infrastructure deficits, institutional management weaknesses, staffing capacity gaps, and digital integration barriers operate simultaneously and reinforce one another. This is not a picture of isolated failures but of systemic undercapacity. The finding directly corroborates Fomba et al. (2023), who demonstrated across 82 developing countries that deteriorating institutional governance quality significantly reduces the efficiency of educational spending and undermines teaching quality outcomes. The present study extends this finding by specifying the mechanisms through which governance fragmentation manifests in Cambodia: not merely as poor resource allocation at the sector level, but as a failure to connect strategic leadership commitments with accountable, well-resourced implementation systems at the departmental level. Furthermore, the study's findings align with those of Ban and Heng (2023), whose review of quality challenges in Cambodian HEIs identified inadequate infrastructure, low staff qualifications, limited research engagement, and weak governance as the principal impediments to quality improvement and extends their analysis by providing quantified evidence of the relative severity and distribution of these challenges across multiple institutions simultaneously.

In response to research question two, which asked how globally recognised quality improvement practices can be adapted to the Cambodian context, the findings point to a clear pattern of selective and partial adoption. The quantitative evidence shows that HEIs are most positively aligned with international accreditation requirements and external QA benchmarks (SN2, 61.2%; SN4, 57.6%), while alignment with national reform goals remains predominantly moderate or neutral (SN5, 56.5% neutral). This asymmetry suggests that Cambodian HEIs are more responsive to externally imposed quality standards, whose reputational and competitive incentives are visible and immediate, than to nationally designed reform frameworks, whose implementation requires sustained internal capacity that many institutions currently lack. The qualitative data reinforced this interpretation, revealing that sustainability practices are primarily accessed through external partnerships rather than internally developed frameworks, a pattern consistent with Trevisan et al. (2023), who found that digital and sustainability transformation in HEIs across developing country contexts is heavily dependent on external enablers and partnerships rather than autonomous institutional capacity. The present study extends this finding by demonstrating that this dependency on external actors for quality improvement is not merely a temporary developmental stage but a structural condition rooted in chronic underfunding, governance constraints, and the absence of coordinated national capacity-building mechanisms.

In response to research question three, which asked what key strategies support the long-term sustainability of Cambodian HEIs, the findings point to three

priority areas that require coordinated attention. First, financial stability and diversified revenue mechanisms are prerequisite conditions for any other sustainability strategy to function effectively, as the evidence consistently shows that resource constraints cascade across all institutional domains simultaneously. Second, governance reform that creates clearer accountability pathways between senior leadership commitments and departmental implementation is essential to close the persistent gap between policy intention and operational practice identified across both the quantitative and qualitative data. Third, professional development must be restructured from an externally funded, irregularly accessed supplement into a core institutional investment, delivered systematically and equitably across staff levels and institution types. These three strategic directions are consistent with the recommendations advanced by Heng et al. (2023) for restructuring Cambodian higher education around improved governance, salary structures, and continuous professional development, and they extend those recommendations by grounding them in cross-institutional quantitative evidence collected at a scale not previously achieved in the Cambodian context. Taken together, the findings underscore that the quality enhancement and institutional sustainability of Cambodian HEIs cannot be achieved through any single intervention. Rather, progress requires a sequenced, coherent, and adequately resourced strategy that addresses structural foundations while simultaneously building the human, digital, and governance capacities through which academic quality can be sustainably maintained and improved over time.

CONCLUSION

This study investigated quality enhancement practices and institutional sustainability across twelve higher education institutions in Phnom Penh, Cambodia, employing a convergent parallel mixed-methods design to capture both the statistical distribution of stakeholder perceptions and the contextual realities shaping institutional performance. The findings demonstrate that teaching-related sustainability practices and academic program relevance to national development represent the comparative strengths of Cambodian HEIs, while digital integration, quality assurance embedding, and active leadership commitment to sustainability remain areas of measurable underperformance. Financial constraints, infrastructure deficits, and institutional management weaknesses were identified as the most significant and compounding challenges, operating not as isolated problems but as interconnected structural conditions that collectively limit the capacity of institutions to translate quality aspirations into sustained practice.

The qualitative evidence further revealed that sustainability in Cambodian HEIs is predominantly pursued through external partnerships and collaborative curriculum arrangements rather than through internally designed frameworks, and that professional development, while formally available, remains irregularly accessed and inequitably distributed across institutions and staff levels. A persistent

tension between senior leadership commitment and departmental implementation capacity was identified as a central institutional controversy, reflecting a broader governance gap between policy intention and operational reality that cuts across both public and private institutions in the sector. These findings confirm that quality enhancement in Cambodian higher education is constrained not by a lack of institutional awareness but by structural conditions that prevent existing commitments from being operationalised consistently and equitably.

Based on the evidence presented, this study recommends that policymakers and institutional leaders prioritise three coordinated strategic directions: strengthening financial sustainability mechanisms through diversified revenue frameworks and increased public investment; reforming governance structures to create transparent accountability pathways between strategic leadership and departmental implementation; and institutionalising professional development as a core, sustainably funded operational commitment rather than a project-dependent supplement. Future research should extend this inquiry to provincial HEIs beyond Phnom Penh and examine the long-term effects of specific policy interventions on measurable quality outcomes, thereby building a more comprehensive and longitudinally grounded evidence base for higher education reform in Cambodia and comparable developing country contexts.

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