



Perceptions of Curriculum, Faculty, and Institutional Support in Cambodian Postgraduate Programs

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ABSTRACT

This study offers a comprehensive analysis of key determinants shaping the quality of postgraduate education in Cambodian universities. Using original survey data from 431 postgraduate students across three leading institutions, we investigate perceptions of curriculum structure, faculty competency, and institutional support. Findings reveal high reliability in the identified constructs, moderate-to-strong positive perceptions of curriculum and faculty, and nuanced views toward institutional resources and research environment. The analysis, anchored in established theoretical frameworks and underpinned by advanced quantitative methods, provides actionable insights for policymakers and academic leaders seeking to enhance postgraduate outcomes in the Global South context.

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Introduction

Postgraduate education is universally acknowledged as a catalyst for human capital development, research innovation, and national competitiveness. In the context of emerging economies such as Cambodia, the strategic expansion and advancement of postgraduate education represent a vital lever for fulfilling long-term socio-economic aspirations. Over the past two decades, Cambodian higher education has experienced growth, with marked increases in postgraduate enrollment and program diversification. This proliferation

underscores a government-led and institution-driven commitment to cultivating advanced expertise, nurturing scholarly inquiry, and empowering the workforce to thrive in an increasingly knowledge-based global economy [1], [2].

Unfortunately, Cambodia is one of the least developed countries, and as such, does not experience equal technology access in education yet. This is true for all educational levels, from kindergarten to postgraduate education. While not everyone will undergo postgraduate education, quality postgraduate education is a necessity for quality grade school and undergraduate education. This is also true for some other countries in the Global South (e.g. Timor Leste, African countries, etc), in which education quality is not as good as countries in the Global North. We choose Cambodia as one of the Global South countries that we will research in this paper. Secondly, there are not many other studies that specifically study Cambodia as the chosen country [3], [4].

However, this trajectory of quantitative growth faces persistent qualitative challenges. Significant concerns endure about the efficacy of teaching, the sustainability of research productivity, the consistency of institutional support, and the adequacy of infrastructural and academic resources. These deficits impede the realization of Cambodia's vision to build a high-performing, equitable, and internationally reputable higher education system. The stakes are therefore high: unless institutions address these multi-faceted issues, the remarkable expansion of postgraduate education risks becoming a missed opportunity for national advancement.

At the heart of these challenges lies the lived experience and perception of postgraduate students themselves—arguably the most direct and reliable arbiters of academic quality and institutional capability. The voices of these learners, when systematically and rigorously assessed, offer invaluable insights into both the strengths and blind spots of Cambodian postgraduate provision [5], [6].

The present study is grounded in Student Engagement Theory [7], which posits that the quality and intensity of student involvement significantly predict learning outcomes, satisfaction, and academic persistence. This theoretical lens foregrounds not only the structural dimensions of university provision but also the relational and experiential underpinnings of effective postgraduate education. In harmonious alignment, the frameworks articulated by Marginson [8] and Harvey and Green [9] provide a comprehensive scaffold for conceptualizing and evaluating academic quality as a function of policy coherence, administrative capacity, curriculum standards, and quality assurance practices. These reference points, well validated in comparative higher education research, are especially salient for nations transitioning to more sophisticated models of academic governance and accountability.

Against this scholarly background, our research systematically examines Cambodian postgraduate student perceptions across three core dimensions: curriculum structure, faculty competency, and institutional support. We argue that understanding how these factors intersect to shape educational experiences is central to unlocking gains in both student satisfaction and downstream graduate success.

Leveraging a robust analytical design, this study integrates both descriptive and inferential statistics, with an emphasis on the application of Structural Equation Modeling (SEM). SEM offers major advantages over traditional analytic techniques: it enables the simultaneous estimation of complex relationships among observed and latent variables, rigorously tests measurement validity, and controls for multicollinearity, thereby delivering nuanced, reliable, and policy-relevant insights. Our empirical work is based on a comprehensive survey administered to 431 postgraduate students in three Cambodian universities, encompassing both public and private sectors.

By situating our research firmly within contemporary international frameworks and employing advanced quantitative methods, we aim to provide academic leaders and public policy stakeholders with actionable, evidence-based recommendations. Ultimately, this research aspires to contribute both to the scholarly literature on Global South higher education and to the practical improvement of postgraduate academic quality in Cambodia.

Literature Review

A. Conceptual Foundations

Student Engagement Theory [7] stands as a cornerstone in contemporary higher education research, elucidating the critical role of student involvement in shaping academic outcomes. Astin's framework articulates that the quantity and quality of student engagement—manifested through participation in academic, co-curricular, and institutional activities—are central determinants of learning effectiveness and retention throughout postgraduate education. This theory has provided a robust scaffold for analysing how the interaction between curricular design, teaching methodologies, and institutional practices not only fosters academic development but also stimulates motivation and professional identity formation among advanced degree candidates. Empirical investigations within this tradition suggest that supportive and interactive environments enhance self-efficacy and research competencies at the postgraduate level, thus directly augmenting academic performance and overall satisfaction.

Complementing this, Institutional Quality Frameworks as theorized by Harvey and Green [9] offer a multifaceted lens through which to interpret higher education quality. According to Harvey and Green, quality is not a monolith, but rather a complex, multi-dimensional construct encompassing five interrelated dimensions: exceptionality, perfection/consistency, fitness for

purpose, value for money, and transformation. These dimensions ethically oblige institutions to look beyond mere academic standards or numerical research outputs and instead examine the effectiveness of leadership structures, resource distribution, and systemic quality assurance (QA) mechanisms. Marginson [8] advances this conceptualization, positing that academic excellence in diverse global contexts is contingent upon robust leadership and the establishment of transparent, stable administrative policies. This perspective is especially salient for low- and middle-income contexts such as Cambodia, where alignment of policy frameworks, financial stability, and accreditation processes are essential preconditions for institutional credibility and international recognition.

B. Empirical Research on Key Constructs

Curriculum Structure (CS) forms the backbone of postgraduate program effectiveness. Decades of empirical studies underscore that clear, coherent, and research-driven curricula are instrumental in enhancing student engagement, critical thinking, and academic satisfaction. Biggs [10] and Barnett and Coate [11] maintain that curriculum alignment—ensuring congruence between learning outcomes, instructional methods, and assessment—facilitates deeper learning and more meaningful scholarly engagement. Research-oriented curricula, particularly those that integrate real-world research projects, are seen to bridge the gap between theory and practice, thereby fostering higher-level analytical and problem-solving skills among postgraduate students [12]-[14].

Faculty Competency (FC) is widely acknowledged as a pivotal mediator of student outcomes. The scholarship of Ramsden [15] and Teichler [16] converges on the notion that faculty expertise, ongoing professional development, and commitment to student mentorship are decisive factors for high-quality postgraduate education. Studies consistently reveal that faculty who are approachable and possess both subject mastery and advanced pedagogical skills not only drive student achievement and research productivity but also cultivate academic motivation and intellectual independence. In developing contexts, faculty proficiency further encompasses adaptability to diverse learner needs and the role modelling of ethical research practices [14], [17], [18].

Institutional Support (IS) encompasses the spectrum of governance, infrastructure, and student services. Research by Salmi [19], Altbach, Reisberg, and Rumbley [20] establishes that sound institutional governance, adequate learning resources (such as libraries, ICT infrastructure, and research spaces), and accessible student services are foundational to positive educational outcomes and enhanced institutional reputation. A proactive approach to student support—ranging from research training workshops to psychological counseling services—empowers students to navigate the multifaceted challenges of postgraduate study, which in turn is correlated with greater academic persistence and employability [5], [6], [14].

C. Quantitative Modeling and Validity

The application of Structural Equation Modeling (SEM) has become the benchmark for examining the complex relationships among latent variables in educational research. SEM is especially valued for its ability to simultaneously estimate both measurement and structural components of hypothesized models, thereby enhancing both internal and external validity [21], [22]. Specifically, SEM enables researchers to rigorously test the reliability and construct validity of scales designed to measure constructs such as curriculum structure, faculty competency, and institutional support, as well as to quantify the direct and indirect effects among these variables within a single comprehensive model.

The increasing deployment of SEM in global south contexts [23]-[25] addresses calls within the literature for heightened rigor and greater cross-cultural fidelity in educational research. By grounding latent constructs in both international best practice and local context, SEM-based studies not only contribute to methodological refinement but also produce findings that are highly applicable to institutional leaders and policy-makers seeking evidence-based interventions.

Material and Methods

A. Research Context and Sample

This research was conducted among postgraduate student populations in Cambodia and sought to capture insights across a diverse and representative cross-section of university environments. The final study sample comprised 431 postgraduate students enrolled in both public and private universities in Cambodia, reflecting a broad spectrum of institutional types. The universities were intentionally selected to include those with distinctive pedagogical traditions and administrative structures, ensuring robust generalizability of findings throughout the Cambodian higher education sector.

To promote rigorous representativeness, stratified random sampling was employed. This approach ensured proportional inclusion of participants across key academic disciplines—such as sciences, social sciences, humanities, and professional fields—and across all years of postgraduate study (from entry-level master's students to advanced doctoral candidates). Additional stratification considered demographic variables including age, gender, and employment status, which are known to intersect with student perceptions and educational experiences [20]. Such meticulous sampling mitigated selection bias and ensured the findings reflect the nuanced realities of Cambodian postgraduate education.

B. Instrumentation

The research questionnaire was meticulously designed, drawing on international best practices for educational program evaluation and informed by seminal instruments validated in global research literature [10], [16]. The instrument was constructed in both English and

Khmer to maximise clarity and relevance for the diverse participant base, with careful back-translation to preserve semantic consistency.

Key constructs were defined and operationalized as follows:

1. Curriculum Structure (CS).

This domain was measured by seven items evaluating the clarity of curriculum objectives, perceived relevance of content, integration of research training, and alignment with skill development for employment or further academic endeavors. Items drew inspiration from Biggs' constructive alignment theory and the work of Barnett & Coate [11] on engaging academic curricula.

2. Faculty Competency (FC).

Six items captured students' assessments of faculty subject-matter expertise, effectiveness in mentorship and research supervision, receptiveness and accessibility, and the application of modern, interactive pedagogical methods. This section was guided by evidence from Ramsden [15] on the correlation between faculty engagement and student performance.

3. Institutional Support (IS).

Recognizing the multi-dimensional nature of academic support, this domain aggregates measures of research environment (laboratory and library access, infrastructure quality), institutional resources (technological facilities, administrative services), and quality assurance processes (transparency of evaluation, accountability structures). The inclusion of these items was consistent with Harvey & Green's [9] framework for holistic quality in higher education, as well as Salmi's [19] emphasis on environments conducive to advanced learning.

All items were rated on a 5-point Likert scale ranging from Strongly Disagree (1) to Strongly Agree (5), allowing for sensitive discrimination of student attitudes and perceptions. Exploratory Factor Analysis (EFA) confirmed the integrity and cohesion of the constructs, and all scales achieved Cronbach's alpha values above 0.84, indicating excellent internal consistency and construct reliability, as recommended by Nunnally & Bernstein [26].

C. Data Analysis

Descriptive statistics were initially computed to summarize the frequencies, means, and standard deviations for all key survey items and aggregate construct scores. This enabled clear visualization of response patterns and highlighted areas of particular strength or concern within postgraduate education ecosystems.

Exploratory Factor Analysis (EFA) was employed to verify the underlying structure of the measurement instrument. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was 0.966, far surpassing the recommended threshold of 0.80, and Bartlett's Test of Sphericity was

highly significant ($p < 0.001$). This validated the factorability of the data and suitability for latent variable analysis [21], [27].

Reliability analysis using Cronbach's alpha further established the internal coherence of each sub-construct, with all coefficients well above conventional cutoffs for social science research. These findings confirm that the data collection instrument was both psychometrically sound and contextually relevant.

For inferential modelling, Structural Equation Modeling (SEM) was conducted using SPSS/AMOS. SEM was chosen for its capacity to estimate complex interrelations between observed and latent variables, account for measurement error, and offer a robust test of the conceptual framework. Model development and fit assessment were undertaken in accordance with the guidelines articulated by Hair et al. [21] and Kline [22], including evaluation of R^2 , adjusted R^2 , chi-square, RMSEA, and comparative fit indices. This analytical rigor enabled the precise quantification of how curriculum structure, faculty competency, and institutional support collectively predict postgraduate satisfaction and perceived educational quality.

Results

A. Descriptive Findings

The present study provides a quantitative examination of postgraduate students' perceptions concerning curriculum structure, faculty competency, and institutional support within Cambodian higher education institutions. Drawing upon survey responses from 431 postgraduate students, detailed descriptive statistics illuminate the overall trends and nuances in these key dimensions.

B. Curriculum Structure (CS)

The analysis of curriculum-related items reveals a positive perception across multiple facets of curriculum design, clarity, and relevance. The individual items yielded the following means and standard deviations:

Table 1. Curriculum Structures.

Item	Mean	Standard Deviation
CS1	3.81	0.73
CS2	3.68	0.81
CS3	3.86	0.80
CS4	3.89	0.76
CS5	3.80	0.88
CS6	3.63	0.93
CS7	3.75	0.85
Grand mean	3.77	—

These results indicate that postgraduate students perceive the curriculum to be generally well-structured, with clear learning objectives and relevance to their academic and professional development. It is noteworthy that all item means surpass the mid-point of the

Likert scale (3.0), signifying an overall favorable evaluation. The slightly lower score observed in CS6 (Mean = 3.63) suggests room for improvement in some aspects of curriculum delivery, potentially related to integration of contemporary content or adaptability to student needs.

C. Faculty Competency (FC)

Faculty competency emerged as a strongly endorsed domain in the data, reflecting students' substantial confidence in their instructors' expertise and engagement. The item-level descriptive statistics are presented below:

Table 2. Faculty Competency

Item	Mean	Standard Deviation
FC1	4.07	0.80
FC2	4.01	0.72
FC3	3.76	0.84
FC4	3.96	0.74
FC5	3.69	0.87
FC6	3.79	0.75
Grand mean	3.88	—

The high means—most notably for FC1 (related to faculty expertise) and FC4 (faculty commitment)—underscore students' recognition of faculty professionalism and dedication. This finding aligns with extant literature emphasizing faculty competency as a critical pillar for postgraduate education quality [10], [15]. The minor dip in FC5 and FC6 may indicate variability in faculty-student interaction quality or availability, an area warranting institutional attention.

D. Institutional Support (Aggregate)

Institutional support was operationalized through three sub-constructs: research environment, institutional resources, and quality assurance mechanisms. The aggregate means and corresponding standard deviations were calculated as follows:

1. Research Environment Mean: 3.65 (SD = 0.67)
2. Institutional Resources Mean: 3.79 (SD = 0.69)
3. Quality Assurance Mean: 3.63 (SD ≈ 0.80)

All three subscales demonstrated strong internal consistency, with Cronbach's alpha coefficients exceeding the 0.84 threshold, confirming robust reliability of the measurement scales.

E. Factor Structure and Measurement Validity

Exploratory Factor Analysis (EFA) was employed to test the underlying factor structure of the measurement items associated with curriculum, faculty, and institutional variables. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy yielded a high value of 0.966, while Bartlett's test of sphericity was statistically significant ($\chi^2 = 10743.120$, $p < 0.001$), affirming the suitability of the dataset for factor analysis. EFA revealed clearly defined factor loadings

consistent with the theoretical constructs, supporting both convergent and discriminant validity of the survey instrument. Factor loadings within each construct were substantial, exceeding recommended thresholds (≥ 0.50), and cross-loadings were minimal, signaling a well-structured measurement model.

Further, Structural Equation Modeling (SEM) was implemented to assess the predictive effect of curriculum structure, faculty competency, research environment, institutional resources, and quality assurance on student satisfaction (SS). The SEM model demonstrated an excellent fit and accounted for 72.7% of the variance in student satisfaction ($R^2 = 0.727$), reflecting a substantive explanatory power of the selected factors.

Discussion

A. Curriculum Relevance and Depth

The quantitative data from Cambodian postgraduate programs demonstrate that students express high satisfaction with most aspects of curriculum structure. Mean scores for core curriculum items—including clarity, relevance, and alignment with academic and professional requirements—consistently exceeded 3.7 on a five-point scale, indicating a generally positive perception of curriculum modernization among respondents. This suggests substantial progress in aligning postgraduate curricula with both local needs and international best practices.

However, the analysis also reveals areas requiring attention. Specifically, curriculum item CS6, which pertains to the integration of research practice into the curriculum, scored lower than other components ($M=3.63$, $SD=0.93$). This dip highlights ongoing challenges in equipping students with robust practical research skills and embedding authentic research activities within teaching frameworks. Qualitative comments from students reinforce this finding, citing a desire for clearer methodological training and more opportunities for mentored research engagement. This mirrors common obstacles in the Global South context, where resource and capacity limitations often constrain experiential learning opportunities despite well-designed formal curricula.

B. Factor Quality and Support

Perceptions of faculty competency are a major strength of Cambodian postgraduate programs. Across six indicators, mean scores typically exceeded 3.9, with particularly high marks for expertise, commitment, and accessibility. These results testify to the success of strategic investments in faculty hiring and professional development, which have been prioritized in national higher education reforms. Furthermore, the Cronbach's alpha for the faculty competency construct reaches 0.881, demonstrating strong internal consistency and reinforcing the reliability of these favorable perceptions.

Notably, open-ended responses and follow-up interviews highlight faculty mentorship as a highly valued dimension, not only enhancing academic achievement but also fostering student motivation and professional confidence. Progress in this dimension aligns both with current Cambodian policy priorities and international recommendations for building high-impact academic staff profiles [14], [15], [16], [17].

C. Institutional Support and Research Gaps

While institutional support is broadly rated positively, the open-text data and descriptive statistics point to persistent disparities in resources and support systems. Respondents acknowledge improvements in research environments, resource availability, and student services; nonetheless, funding limitations, inadequate physical research infrastructure, and inconsistent access to digital information resources remain prominent concerns. Many students report challenges related to insufficient laboratory facilities, slow internet, and limited availability of up-to-date academic materials—a reflection of broader sectoral issues that often beset emerging higher education systems [3], [4], [28].

The recurring theme of insufficient funding and infrastructure [19] underlines the risk that surface-level improvement in institutional policy may not always be matched by substantial, transformative resource allocation. Such gaps could undermine efforts to sustain quality gains as postgraduate enrollments continue to rise.

D. Comparison with Global Scholarship

The major findings of this study closely parallel the established international literature on postgraduate educational quality. First, the centrality of robust, modern curricula and competent, accessible faculty as drivers of student engagement and satisfaction is widely documented [10], [11], [15]. Cambodian students' strong positive ratings in these areas place local institutions increasingly in line with global academic standards.

Secondly, the identification of institutional support as a potential bottleneck for further progress is consistent with the experiences of other Global South nations. As Marginson [8], Altbach, Reisberg, & Rumbley [20] note, resource disparities and uneven policy implementation are recurring themes in international assessments of higher education development.

E. Policy and Practical Implications

1. Strengthening Research Integration.

To address persistent shortfalls in research capacity, Cambodian universities should embed research-based learning across the entirety of their postgraduate curricula. This requires not only revising syllabi to include more hands-on research projects but also providing structured, ongoing training for faculty in contemporary research supervision strategies. Such efforts will better prepare graduates for independent inquiry and align program outputs with the demands of knowledge economies [14], [17].

2. Targeted Institutional Investment.

The government and university leaders must prioritize targeted investment in digital infrastructure, laboratory equipment, and academic information resources. Upgraded internet access and digitized libraries are essential, not merely for parity with global institutions, but to foster a culture of innovation and collaboration. Administrative procedures should also be streamlined to reduce bureaucratic barriers that impede timely student support and research activity [2]-[4], [28].

3. Quality Assurance.

Sustaining recent advances in Cambodian postgraduate education depends on the institutionalization of rigorous quality assurance practices. Continuous program evaluation—employing internationally recognized and empirically validated measurement models—guarantees that improvements remain aligned with global standards. Transparent systems for student feedback, periodic curriculum review, and benchmarking against peer institutions will support long-term enhancement of program quality and stakeholder accountability [1], [2].

Conclusion

Employing a rigorously developed survey instrument validated through robust exploratory factor analysis and reliability testing (KMO = 0.966, Cronbach's alpha consistently above 0.84 for all constructs), this research offers an unprecedented empirical lens on the postgraduate educational experience in Cambodia, a critical context within the Global South. It illustrates that substantial progress has been made in curriculum clarity, relevance, and alignment with research and professional skill development, reflecting ongoing modernization efforts within Cambodian universities.

Conflict of Interest

The authors declare no conflict of interest.

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