Examining the Impact of Self-Efficacy Beliefs on Student Academic Achievement: A Structural Model from Cambodian Higher Education Lecturers

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ABSTRACT

This study investigates the relationship between lecturers' self-efficacy beliefs and student academic achievement within Cambodian higher education institutions, utilizing a quantitative, cross-sectional design. Grounded in Bandura's Social Cognitive Theory, the research responds to a critical gap in understanding how psychological constructs influence learning achievement in Southeast Asian academic contexts. Data were collected through a structured questionnaire administered to 320 lecturers selected from public and private universities. Constructs were measured using validated instruments on a five-point Likert scale, with strong internal consistency indicated by Cronbach's alpha values of 0.930 for self-efficacy beliefs and 0.967 for student academic achievement. Exploratory Factor Analysis (EFA) confirmed the construct validity of the instruments. Descriptive statistics and simple linear regression analysis were performed using SPSS version 26. Findings revealed a statistically significant and positive relationship between lecturers' self-efficacy and student academic achievement ($B = 0.320$, $p < 0.001$), with the model explaining 11.7% of the variance ($R^2 = 0.117$). These results suggest that higher levels of lecturer confidence in their instructional capabilities are associated with improved student academic achievement. The study underscores the importance of promoting faculty self-belief as a lever for enhancing student learning and institutional performance. It further highlights the role of psychological and motivational variables in academic success—particularly in developing nations undergoing educational reform. The findings have practical implications for professional development, instructional design, and leadership training programs in Cambodian universities.

Keywords: Self-Efficacy Beliefs, Student Academic Achievement, Cambodian Higher Education, Social Cognitive Theory, Quantitative Study

INTRODUCTION

In today's rapidly evolving educational landscape, the quality of the learning environment is increasingly recognized as a critical factor in shaping student achievement. Nowhere is this more relevant than in higher education, where institutions face the dual challenge of expanding access and ensuring quality. In Cambodia, this challenge has become more pronounced in the post-pandemic era, as the country continues to reform and modernize its higher education system. The expansion of universities, increased enrollment rates, and curriculum diversification all point to a broader national strategy aimed at improving educational outcomes. However, while such systemic reforms are necessary, they are insufficient on their own to ensure student academic success. At the core of effective higher education lies the belief that student academic achievement is not only influenced by institutional infrastructure and teaching strategies but also by the psychological factors that drive student behavior. Among these, self-efficacy beliefs have gained increasing attention as a powerful determinant of academic achievement. Self-efficacy refers to an individual's confidence in their ability to perform specific tasks or overcome challenges. In educational settings, students who believe they can succeed are more likely to engage actively, persist in the face of difficulties, and employ effective learning strategies,

all of which contribute to better academic performance. According to [1], integrating motivational management theories into teaching practices is essential for reinforcing students' belief in their academic capabilities.

This study focuses on the Cambodian context, exploring how lecturers' self-efficacy beliefs among students contribute to academic achievement within the framework of the broader learning environment. Specifically, it investigates the extent to which lecturers perceive student self-efficacy as a predictor of learning outcomes, and how these beliefs interact with environmental factors such as teaching style, classroom design, and technological support. While numerous studies in Western and more developed contexts have demonstrated the significance of self-efficacy, empirical evidence in Southeast Asian or low-resource educational settings remains sparse. The need to investigate lecturers' self-efficacy in Cambodia's higher education system arises from several interrelated developments. First, the shift to hybrid and online learning during and after the pandemic has transformed how students interact with content, instructors, and peers. In this new setting, students must take greater responsibility for managing their own learning, setting goals, and overcoming distractions—tasks that are more easily accomplished by those with high self-regulation. Second, the increasing diversification of the student population, including more first-generation university students and learners from rural areas, has brought attention to the psychological and motivational challenges faced by students with limited academic preparation. Understanding how these students perceive their capabilities is critical to designing support systems that improve their achievement. Despite the central role that self-efficacy plays in learning, few studies in Cambodia have examined how lecturers assess or respond to these beliefs among their students. Lecturers are key actors in creating environments that either nurture or hinder student confidence. Through their instructional choices, feedback mechanisms, and classroom interactions, they influence not only what students learn but also how students perceive their own ability to learn. Therefore, lecturer perspectives offer a valuable lens for understanding the dynamics of lecturers' self-efficacy and its role in student academic achievement. [2] argue that effective leadership and academic guidance can shape student motivation and long-term success, particularly through mentoring and feedback systems that reinforce self-belief.

The research gap addressed in this study stems from the lack of structural models that incorporate both psychological and environmental variables in the analysis of student outcomes in Cambodian higher education. Most existing studies focus on institutional or curriculum-based reforms without integrating the cognitive and emotional components of student learning. Moreover, while some research acknowledges the importance of motivational factors, there is limited understanding of how these are perceived and supported by lecturers on a day-to-day basis. This gap limits the ability of universities to implement targeted interventions that promote both academic achievement and student well-being. This study proposes a structural model that examines the influence of self-efficacy beliefs on student academic achievement. Data will be collected from lecturers at multiple public and private universities across Cambodia to assess their observations, practices, and attitudes regarding student self-efficacy and academic success. The model seeks to identify which aspects of the learning environment most strongly influence student confidence, and how that confidence translates into measurable outcomes such as GPA, course completion, and skill development. By focusing on lecturer perspectives, this research provides a unique contribution to the discourse on higher education quality in Cambodia. It moves beyond surface-level metrics of success to explore the psychological mechanisms that drive student performance. The results are expected to inform the development of faculty training programs, classroom interventions, and institutional policies that are more attuned to the psychological needs of learners.

LITERATURE REVIEW

Self-efficacy, a central construct in Bandura's Social Cognitive Theory, has been widely recognized as a critical psychological factor influencing student academic achievement. Defined as an individual's belief in their capability to organize and execute actions required to attain desired goals, self-efficacy exerts a strong influence on human behavior, motivation, and academic performance. Students with high self-efficacy tend to approach challenges with confidence, exhibit greater persistence, and adopt more effective learning strategies. Conversely, those with low self-efficacy often doubt their abilities, avoid difficult tasks, and are more susceptible to anxiety and academic disengagement [3], [4]. In educational contexts, academic self-efficacy

refers specifically to students' judgments about their ability to succeed in academic tasks. Research consistently shows that self-efficacy is positively associated with higher academic performance, motivation, and engagement. Strong academic self-efficacy encourages students to set more ambitious goals and persist in their efforts, even when encountering difficulties. These dynamics help explain why students who believe in their academic capabilities are more likely to achieve academic success [5], [6]. In professional and educational domains alike, SSE has been linked to positive outcomes such as improved peer collaboration and reduced dropout risk. Students with high SSE are often better equipped to manage social interactions, which indirectly supports their academic persistence and adjustment. Thus, both dimensions of self-efficacy—general and social—offer valuable insights into the complex mechanisms that underpin academic performance and resilience in higher education contexts [3]–[6].

The rapid shift towards online and blended learning models in higher education, accelerated by the COVID-19 pandemic, has necessitated a renewed focus on factors influencing student academic achievement. Academic achievement, typically defined as the mastery of course content measured by grades or test scores, reflects the cumulative success of students over a period of study. This success arises from the complex interaction of internal and external factors. Internally, psychological constructs such as self-efficacy, motivation, and cognitive abilities play a pivotal role, while externally, variables like instructional quality and learning environments contribute to student outcomes [7], [8]. Self-efficacy, understood as an individual's belief in their capability to organize and execute actions required to achieve specific goals, is especially significant in this context. Students with high self-efficacy tend to demonstrate greater persistence, motivation, and adaptive learning strategies, which collectively enhance academic performance. Conversely, students with low self-efficacy are prone to avoid challenging tasks, experience higher levels of anxiety, and exhibit lower academic persistence, thereby negatively affecting their learning outcomes [3], [9].

Interestingly, even when students receive similar educational resources—including access to instructors, course materials, and participation rights—variations in academic achievement remain evident across cohorts. Data from a faculty of engineering at an Indonesian university revealed fluctuations in semester performance indices among cohorts from 2017 to 2019, despite constant teaching conditions. Such disparities underscore the importance of psychological factors like self-efficacy in shaping academic success beyond the structural and material aspects of education [3], [8]. Given this, fostering self-efficacy through pedagogical strategies that encourage student confidence and active learning is crucial. Understanding how students perceive their capabilities and how these perceptions influence their academic behaviors can inform targeted interventions to bridge achievement gaps, particularly in blended and online learning settings where self-directed learning is essential.

Hypothesis and Research Framework

Lecturers' self-efficacy beliefs have a positive significant effect on student academic achievement in Cambodian higher education institutions.

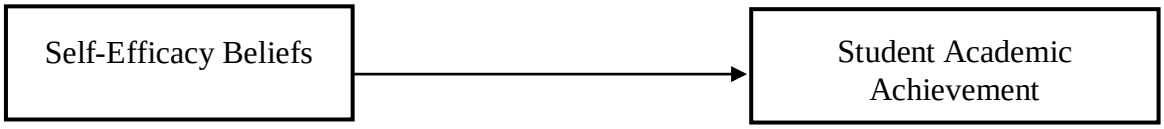

Figure 1: Research Framework

RESEARCH METHODOLOGY

Resarch Design

A research design serves as an organized blueprint that directs the entire research process, from the formulation of objectives and theoretical foundations to the selection of appropriate methodologies. It ensures consistency between the research goals, conceptual framework, and analytical procedures. By offering a structured approach to data collection, measurement, and analysis, the design plays a vital role in upholding

the study's validity, reliability, and ethical standards. The alignment contributes to the dependability and scholarly quality of the research [10].

Population and Sampling

In this study, a descriptive quantitative research design was employed, as it allows for objective measurement and statistical analysis of the relationships among variables. Consistent with [11], this approach was chosen over qualitative methods to ensure empirical precision. The target population comprised lecturers from selected public universities in Cambodia, chosen for their relevance to the research objectives. The sample size was determined in accordance with the guidelines of [12], ensuring representativeness for a population of approximately 2,000 respondents. A structured questionnaire was designed using previously validated items aligned with the study's main constructs. A pilot study was undertaken to evaluate the instrument's reliability, with Cronbach's alpha values ranging from 0.708 to 0.911, all exceeding the generally accepted minimum threshold of 0.70 [13]. After finalizing the instrument, printed questionnaires were distributed to lecturers in selected public and private universities. A total of 405 questionnaires were handed out, and 347 were successfully completed and returned, yielding an initial response rate of 85.7%. After excluding 27 incomplete responses, 320 valid surveys remained, resulting in a final usable response rate of 79%.

Instrumentation

A structured survey instrument with three sections was developed to measure the study's key constructs. Items on self-efficacy design were tailored to the technological context of the research setting. Student academic achievement was measured using items reflecting skill performance, retention, interest, and cognitive ability. Participants responded on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree), enabling consistent quantification of perceptions across all sections.

Validity and Reliability

To evaluate the construct validity of the measurement scales, an Exploratory Factor Analysis (EFA) was conducted using Principal Component Analysis (PCA) with Varimax rotation. This procedure was applied to the self-efficacy beliefs and student academic achievement constructs. The appropriateness of the dataset for factor analysis was validated using the Kaiser-Meyer-Olkin (KMO) statistic and Bartlett's Test of Sphericity. In line with established criteria, only items with factor loadings of 0.50 or higher were retained for further analysis [14]. Moreover, internal consistency was assessed using Cronbach's alpha, with results indicating strong reliability for both constructs, as all alpha values exceeded the recommended threshold of 0.70 [13].

Data Analysis

Data analysis was performed using IBM SPSS Statistics version 26 to process and interpret the study data. The initial phase involved generating descriptive statistics—including frequencies, means, and standard deviations—to summarize demographic information and examine the distribution of responses across survey items. Composite scores were then calculated by averaging the validated items within each construct. To examine the hypothesized relationship between autocratic leadership style and student performance, a simple linear regression analysis was employed. The analysis used a 0.05 significance level to determine statistical relevance, and model adequacy was evaluated using R-squared values and standardized coefficients. This approach provided a rigorous means of testing the primary hypothesis while maintaining the reliability of the measurement framework.

ANALYSIS AND FINDINGS

Respondents' Profile

A total of 320 lecturers from Cambodian public higher education institutions participated in this study. The gender distribution was predominantly male (89.4%), with female respondents accounting for 10.6%. While this indicates a gender imbalance, it is reflective of the current composition of academic staff in many

Cambodian public and private universities. Many respondents were within the 41–50 age group (50.6%), followed by those aged 51–60 years (25.3%) and 31–40 years (16.3%). In terms of academic qualifications, 84.7% of participants held a master's degree, while 15.3% possessed a PhD. In terms of teaching experience, the largest group of respondents (51.9%) reported having 11 to 15 years of experience, with 21.3% having 16 to 20 years and 14.7% having 6 to 10 years. This distribution reflects a well-qualified and experienced sample, which enhances the reliability of the data and ensures that their responses are relevant to the study's aims, as illustrated in Table 1.

Table 1: The demographic characteristics of the respondents

Factors	Classification	Repetition	Proportion
Gender	Female	34	10.6
	Male	286	89.4
Age	Below 30yrs	18	5.6
	31-40yrs	52	16.3
	41-50yrs	162	50.6
	51-60yrs	81	25.3
	61yrs and above	7	2.2
Academic Qualification	MSc.	271	84.7
	PhD	49	15.3
Working Experience	Below 5yrs	28	8.8
	6 – 10yrs	47	14.7
	11 – 15yrs	166	51.9
	16 – 20yrs	68	21.3
	Above 20yrs	11	3.4
N		**320**	

Factor Analysis (EFA) for Self-Efficacy Beliefs

Table 2: Component Matrix for Self-Efficacy Beliefs (SEB)

Item Code	Component 1
SEB1	0.924
SEB2	0.912
SEB3	0.806
SEB4	0.785

SEB5	0.813
SEB6	0.929

Table 3: KMO and Bartlett's Test of Sphericity

Measurement	Value
Kaiser-Meyer-Olkin (KMO)	0.879
Bartlett's Test of Sphericity	1,815.393
Df	15
Significance (p-value)	0.000

Exploratory Factor Analysis (EFA) was performed on the Self-Efficacy Beliefs (SEB) construct using Principal Component Analysis (PCA). The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was 0.879, which exceeds the acceptable threshold of 0.70, indicating that the sample was suitable for factor analysis. Bartlett's Test of Sphericity was statistically significant (χ^2 = 1,815.393, df = 15, $p < 0.001$), confirming that the correlation matrix was not an identity matrix and thus appropriate for factor extraction [14] in table 3. As shown in table 2, all six items loaded highly on a single component, with factor loadings ranging from 0.785 to 0.929, suggesting strong convergence and supporting the unidimensionality of the SEB construct.

Exploratory Factor Analysis (EFA) for Student Academic Achievement

Table 4: Component Matrix for Student Academic Achievement (SAA)

Item Code	Component 1	Component 2
SAA1	0.889	-0.199
SAA2	0.742	0.485
SAA3	0.710	0.558
SAA4	0.731	0.554
SAA5	0.715	0.410
SAA6	0.742	0.545
SAA7	0.893	-0.237
SAA8	0.907	-0.246
SAA9	0.818	-0.176
SAA10	0.906	-0.215
SAA11	0.844	-0.152
SAA12	0.911	-0.236
SAA13	0.423	0.439

SAA14	0.911	-0.235
SAA15	0.911	-0.258
SAA16	0.791	-0.140
SAA17	0.893	-0.214

Table 5: KMO and Bartlett's Test of Sphericity

Measurement	Value
Kaiser-Meyer-Olkin (KMO)	0.874
Bartlett's Test of Sphericity	9,532.230
Df	136
Significance (p-value)	0.000

Table 4, the factor loading matrix suggests the emergence of two latent components. Many of the items—especially SAA1, SAA7, SAA8, SAA10, SAA12, SAA14, SAA15 and SAA16—exhibited strong loadings above 0.80 on Component 1, suggesting a robust unidimensional cluster of outcomes likely reflecting Cognitive and Academic Gains. Component 2, in contrast, attracted lower and more dispersed loadings, with cross-loading behavior evident in items such as SAA2–SAA6 and SAA13, indicating a possible secondary domain, potentially related to Motivational or Behavioral Engagement. Items like SAA13 (loading = 0.423/0.439) demonstrated borderline factor retention and may warrant further refinement or revalidation in future studies to ensure theoretical clarity.

An Exploratory Factor Analysis (EFA) using Principal Component Analysis (PCA) with varimax rotation was conducted to assess the construct validity of the student academic achievement (SAA) measurement scale. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was 0.874, indicating that the sample size was highly suitable for factor analysis [15]. Furthermore,

Bartlett's Test of Sphericity was also significant (χ^2 = 9,532.230, df = 136, $p < 0.001$), indicating that the correlation matrix was sufficiently correlated and not an identity matrix. This result confirms the suitability of the data for factor extraction [14], as presented in Table 5.

Reliability Analysis (Cronbach's Alpha)

Table 6: Reliability Analysis Using Cronbach's Alpha

Construct	No. of Items	Cronbach's Alpha
Demographic	5	0.710
Self-Efficacy Beliefs	6	0.930
Student Academic Achievement	17	0.967

Internal consistency reliability was assessed using Cronbach's alpha for each construct. As shown in Table 6, the Self-Efficacy Beliefs scale demonstrated excellent reliability, with a Cronbach's alpha of 0.930, exceeding the recommended threshold of 0.70 [13]. The student academic achievement construct also exhibited very high internal consistency, with an alpha of 0.967, indicating a strong coherence among the items. The Demographic section, which included five items, showed acceptable reliability with a Cronbach's alpha of 0.710. Overall, these results confirm that the measurement scales used in the study are reliable for further analysis.

Hypotheses Tested

Lecturers' self-efficacy beliefs have a positive significant effect on student academic achievement in Cambodian higher education institutions.

Table 7: Simple Linear Regression

Variables	Unstandardized Coefficient (B)	Standard Error	t-value	Sig.
Constant	2.748	0.178	15.408	0.000
Self-Efficacy Beliefs	0.320	0.049	6.506	0.000
R = 0.343				
R Square = 0.117				
Adjust R Square = 0.115				
F = 40.328				

Hypothesis 1 (H1) proposed that lecturers' self-efficacy beliefs have a significant effect on student academic achievement in Cambodian higher education institutions. To test this, a simple linear regression analysis was conducted. As shown in Table 7, lecturers' self-efficacy beliefs significantly predicted student academic achievement ($B = 0.320$, $SE = 0.049$, $t = 6.506$, $p < 0.001$). The model explained 11.7% of the variance in academic achievement ($R^2 = 0.117$, Adjusted $R^2 = 0.115$), and the overall regression was statistically significant ($F = 40.328$, $p < 0.001$). Furthermore, the Variance Inflation Factor (VIF) for self-efficacy beliefs was 1.000, indicating no multicollinearity and confirming the stability and reliability of the regression coefficients [14]. These findings provide strong support for H1, suggesting that higher levels of lecturer self-efficacy are associated with improved student academic achievement.

The findings of this study indicate that lecturers' self-efficacy beliefs have a significant impact on student academic achievement in Cambodian higher education institutions. This aligns with Bandura's Social Cognitive Theory, which emphasizes that individuals' belief in their capabilities influences their motivation and performance [3].

CONCLUSION, LIMITATION OF STUDY, AND FUTURE RESEARCH

Conclusion

This study examined the influence of lecturers' self-efficacy beliefs on student academic achievement in Cambodian higher education. Using a descriptive quantitative approach with data from 320 lecturers, the results demonstrated a statistically significant and positive effect ($B = 0.330$, $p < 0.001$; $R^2 = 0.113$) of lecturers' self-efficacy beliefs on student academic achievement. These findings underscore the importance of structured instructional practices and effective behavioral regulation in fostering academic success, particularly in resource-constrained or transitional educational contexts. The results suggest that when lecturers' self-efficacy beliefs that support student confidence, discipline, and autonomy, students are more likely to demonstrate improved cognitive, motivational, and behavioral engagement.

Limitation of Study

Although this study offers valuable insights, it is not without limitations. Firstly, the use of a cross-sectional design limits the capacity to establish causal relationships. Second, the study is based solely on lecturer perceptions, which may not fully capture student experiences or actual academic behaviors. Third, the research

was limited to selected public and private universities in Cambodia, which may reduce the generalizability of the findings to other national or international contexts.

Future Research

Future studies should adopt longitudinal or experimental designs to validate causal inferences and track changes in self-efficacy over time. Including student perspectives and academic performance data (e.g., GPA, course completion) would provide a more comprehensive view of the psychological mechanisms underlying learning outcomes. Additionally, comparative studies across countries or institutional types could illuminate cultural and structural differences in how self-efficacy beliefs and self-efficacy interact. Lastly, integrating qualitative methods could enrich understanding of how lecturers interpret and respond to student confidence within the classroom.

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