



Contextual Factors Shaping First-Year Students' Academic Adjustment: Evidence from Education Institutions in Battambang, Cambodia

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ABSTRACT

Purpose of the study: This study investigates the multifaceted factors influencing first-year students' academic adjustment in higher education institutions in Battambang, Cambodia. Specifically, it examines the factors integrating perspectives from educational psychology and sociocultural theory.

Methodology: A quantitative research design was employed using a structured questionnaire administered to 350 freshmen from two institutions during the 2023–2024 academic year. Data were analyzed using SPSS version 25 through descriptive statistics, exploratory factor analysis, hypothesis testing, independent sample t-tests, and ANOVA.

Main findings: The results show that ICF, SCF, MEF, and AAF significantly predict academic adjustment, explaining for 47.9% of the variance ($R^2 = 0.479$, $p < .000$), while INF showed no significant effect. The findings highlight the importance of both institutional and socio-emotional dimensions in shaping students' adaptation to academic life.

Novelty/Originality of this study: This study adopts an interdisciplinary approach, drawing on educational, psychological, and sociocultural frameworks to provide a more holistic understanding of student adjustment. Its findings can inform socially institutional practices that enhance first-year student support, teaching quality, and cultural responsiveness. Encouraging active student engagement and peer support mechanisms can further contribute to improved academic transition and retention in the Cambodian higher education context.

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1. INTRODUCTION

The transition from upper-secondary school to higher education represents a pivotal stage in students' academic and personal development. For first-year students, this transition often involves substantial challenges as they adjust to new academic, social, and institutional expectations [1], [2]. Academic adjustment a critical dimension of this process—refers to students' ability to manage academic demands while adapting to new learning environments and expectations [3]. This adjustment can be particularly difficult for students from under-resourced or marginalized backgrounds, where a mismatch between prior educational experiences and the realities of higher education frequently leads to academic underperformance or dropout [4], [5].

Although academic adjustment has been widely studied in international literature especially in Western or urban university contexts—there is a significant lack of research focusing on students in post-conflict, resource-constrained countries like Cambodia. More specifically, the literature tends to overlook how academic adjustment unfolds in provincial higher education institutions, where students and institutions face challenges vastly different from those in urban regions. In Cambodia, most empirical studies have concentrated on elite universities in Phnom

Penh, creating a knowledge gap regarding the experiences of students in provinces like Battambang, where institutional capacities are weaker, and students often come from unstable socio-economic backgrounds [6], [7].

Additionally, academic adjustment cannot be fully understood without considering social and cultural integration. Students from rural or minority backgrounds frequently face barriers such as language difficulties, unfamiliar academic norms, cultural dislocation, homesickness, and lack of social support [8], [9]. Theoretical models like Tinto's Student Integration Model and Bourdieu's concept of cultural capital emphasize that academic success is shaped not just by individual ability but also by social structures, institutional support, and systemic inequalities [10].

Recent local studies have indicated that dropout rates among first-year students in Battambang range from 10% to 40%, largely due to structural barriers, family responsibilities, and psychosocial pressures [11]. Factors such as gender disparities, parental expectations, career aspirations, family support, and individual student characteristics have been shown to significantly impact undergraduate experiences at the National University of Battambang [12], [13]. These influences are particularly relevant for first-year students, who often face the greatest adjustment challenges. However, there remains a notable lack of empirical research that systematically explores how freshmen at National University of Battambang experience and cope with academic adjustment. This gap is especially critical considering National University of Battambang is Cambodia's largest public university in the northwestern region, hosting thousands of undergraduate and postgraduate students, many of whom are on scholarships or receive full financial support. Addressing this knowledge gap is essential, particularly in the context of Cambodia's ongoing higher education reforms and its aspirations to meet regional and global academic standards.

This study addresses these research gaps by focusing on academic adjustment among first-year students at National University of Battambang, offering one of the first empirical investigations in this provincial context. It contributes to the literature in three novel ways. First, it examines academic adjustment in a post-conflict, rural educational setting that remains underrepresented in global and regional scholarship. Second, it employs a multidimensional, interdisciplinary theoretical framework—drawing from educational psychology, sociocultural theory, and Person-Environment Fit theory—to understand the complex factors influencing adjustment. Third, it provides context-specific insights grounded in the lived experiences of Cambodian students navigating poverty, limited institutional support, and shifting gender norms.

By identifying the individual, social, institutional, and psychological factors that shape students' adjustment, this study aims to inform more inclusive and contextually appropriate educational strategies. It also contributes to broader academic debates about how academic transitions are influenced not only by individual readiness but also by systemic structures and sociocultural fit—particularly in under-researched, non-Western, and post-conflict settings like Battambang.

According to the above issues raised, the study will be conducted to investigate the various influence factors and discover the better strategies to support the academic adjustment, particularly engaging freshmen in universities in Battambang. There are three main research questions of this empirical research process.

1. What are the key factors influencing and how do they impact success of academic adjustment among first-year students in higher education institutions in Battambang?
2. Is there any significant difference between male and female in academic adjustment of first-year students in higher education institutions in Battambang?
3. Are there any significant differences in the academic adjustment among first-year students between institutional settings in higher education institutions in Battambang?

2. LITERATURE REVIEW

2.1. Definition of Terms

In the context of academic adjustment, the word "adjustment" refers to the process by which students adapt to the demands and environment of their academic setting [14]. This involves adapting to new routines, managing academic workload, developing effective study habits, and integrating into the social and cultural aspects of the educational institution. Adjustment in academic setting encompasses various dimensions, including psychological well-being, academic performance, and social integration, all of which contribute to a student's overall success and satisfaction in their educational journey [15].

Academic adjustment refers to students' ability to adapt successfully to the academic demands and requirements of their educational environment. This involves factors such as learning motivation, dedication to academic work, effort to meet academic expectations, and satisfaction with the academic setting [16]. Various psychological, motivational, and behavioral factors influence academic adjustment, which is crucial for students' academic success [17]. Self-adjustment is a key component of academic adjustment, contributing to mental health and overall well-being [18]. The level of academic adjustment varies among students and is influenced by self-esteem, self-efficacy, and self-concept [19]. For instance, the COVID-19 pandemic and the transition to online learning have particularly challenged students in adapting to the academic culture of higher education [7], [20].

2.2. Academic Adjustment in Social Science Perspective

The transition to higher education presents complex academic and social demands for most first-year students. For instance, international students studying in the U.S. often face adjustment barriers related to length of stay, English language proficiency, help-seeking behaviors, and age [21]. Academic adjustment refers to the student's ability to adapt to institutional academic norms, including learning expectations, classroom interactions, and independent study [22], [23]. This process requires engagement with new cognitive, metacognitive, and behavioral strategies [24], [25]. When students' expectations mismatch with institutional practices, they often face motivational and emotional difficulties [26], [27].

From a social science perspective, academic adjustment is not merely a psychological process but a socially situated one, influenced by class, gender, ethnicity, and institutional culture. Tinto's Student Integration Model [10] conceptualizes adjustment as an interaction between academic integration (performance, engagement) and social integration (peer relationships, belonging). Similarly, the Person-Environment Fit Theory (PE Fit) emphasizes the importance of congruence between student characteristics and the academic/social environment [28], [29]. Constructivist perspectives (Piaget, Vygotsky) further assert that learning and adjustment occur through active, socially mediated interactions with the environment [30], [31]. In this integrated framework, academic adjustment is shaped by internal (psychological, cognitive) and external (cultural, institutional, social) factors. These theories provide a comprehensive lens for examining how first-year students navigate the transition to higher education.

2.3. Cultural and Economic Dimensions in Higher Education

Cultural background and economic status significantly impact academic adjustment. Students from rural or minority communities may face challenges such as language barriers, limited access to academic support, and difficulties integrating into campus culture [32]–[34]. These challenges are magnified in low-resource settings like Cambodia, where disparities in secondary school preparation, financial resources, and language readiness are common.

Economic hardship contributes to stress, limits access to learning materials, and increases dropout risks [35]–[37]. Students' ability to participate in academic life is constrained by accommodation costs, food insecurity, and a lack of institutional support services [38], [39]. These economic constraints intersect with social inequalities, limiting students' capacity to adapt and succeed.

Cross-national studies indicate that dropout rates remain high, especially where institutions fail to provide cultural and financial support systems [40], [41]. Cambodian students studying in neighboring countries such as Malaysia similarly struggle with English proficiency and cultural adaptation [42]–[44]. These findings underscore the importance of embedding academic support within a broader framework of cultural inclusivity and socioeconomic equity [45].

2.4. The Interplay of Psychological, Institutional, and Social Factors

First-year students' academic adjustment is a dynamic and multifaceted process shaped by personal traits (such as motivation and self-efficacy), institutional structures (including pedagogy and support systems), and peer relationships. The Person-Environment Fit (PE Fit) Theory outlines six interconnected dimensions influencing this transition: individual-environment complementarity, multidimensional fit, dynamic reciprocity, subjective versus objective fit, psychological outcomes, and adaptation mechanisms [29], [46]. Individual-environment complementarity refers to how well students' capacities—such as ICT skills or stress coping abilities—align with institutional demands [47]–[49]. Multidimensional fit encompasses academic, social, and cultural compatibility, where instructional alignment, peer integration, and familiarity with cultural norms are essential for success [45]–[50], with Social Learning Theory emphasizing the value of peer collaboration in easing adjustment [51]. The dynamic and reciprocal nature of adjustment highlights its ongoing evolution through student-institution interactions [52], [36]. Subjective fit involves students' perceived alignment with their environment, while objective fit concerns the tangible support available—such as tutoring or library access—with poor alignment leading to stress and disengagement [53], [54]. Psychological outcomes, including resilience and optimism, are closely linked to academic performance and are supported by positive psychology frameworks [55]–[57]. Lastly, adaptation mechanisms play a crucial role: while proactive strategies like help-seeking and time management support adjustment, maladaptive responses such as avoidance or self-blame hinder it [27], [58]. Collectively, these interwoven factors demonstrate that academic adjustment is not merely an individual psychological trait but a socially embedded process shaped by institutional responsiveness, peer networks, and students' psychological resilience [59].

2.5. Cambodian Context: Post-Conflict and Developing Country Realities

Cambodia's higher education system operates within a unique post-conflict and developing country context. Limited infrastructure, outdated curricula, low-quality materials, and underfunded student services continue to hinder students' ability to transition successfully into academic life [45], [60]. First-year students in provincial institutions like Battambang face compounded barriers—including lower household income, weak secondary preparation, and limited exposure to academic norms [60], [43]. Socioeconomic instability, family obligations, domestic violence, and poor health contribute to student stress and dropout [33], [36], [39]. This study adds to limited but growing literature on student adjustment in Southeast Asia by situating academic success within broader national challenges such as poverty, decentralization, and global labor demands. Despite ongoing reforms and donor support, Cambodia's educational outcomes remain uneven. Therefore, there is a pressing need for contextually grounded research that examines the individual, institutional, social and cultural, mental, and academic attainment determinants of academic adjustment.

2.6. Hypothesis

- H1: Individual factors have a significant positive impact on success of academic adjustment.
- H2: Instructional and school factors significantly influence success of academic adjustment.
- H3: Social and cultural factors contribute positively to success of academic adjustment.
- H4: Mental factors have a significant effect success of academic adjustment.
- H5: Academic attainment factors significantly impact success of academic adjustment.

2.7. Conceptual Framework

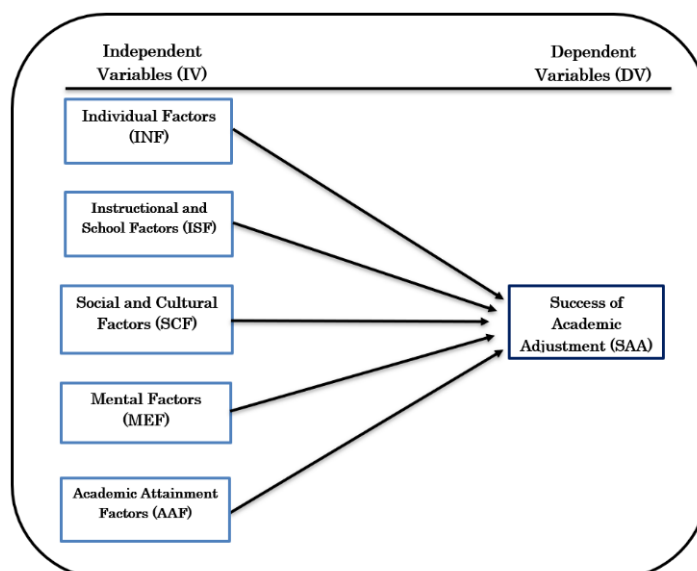


Figure 1. Conceptual Framework

3. RESEARCH METHOD

3.1. Method and Research Site

This study employs a quantitative research design, using inferential statistical techniques to examine the complex interplay of individual, instructional and school, social and cultural, and mental factors influencing academic adjustment among first-year university students. While social phenomena are often explored qualitatively, a quantitative approach is justified here due to the need to measure the relative weight and statistical significance of multiple variables across a large and diverse student population. This method enables a broad, generalizable understanding of how intersecting factors—including individual traits, institutional structures, and cultural dynamics—impact academic adjustment in the Cambodian context [61], [62]. Data were collected using a structured questionnaire administered to 350 first-year students, allowing for rigorous regression analysis, t-tests, and ANOVA to identify meaningful patterns and relationships.

The study is situated in Battambang where interdependence, respect for authority, and filial obligations play key roles in youth decision-making. Social hierarchy, often internalized in classroom and institutional behavior, influences how students interact with peers and instructors. The research is conducted at two institutions: the National University of Battambang and the Preah Sihanouk Raja Buddhist University.

3.2. Participants

A total of 350 first-year students were sampled from a known population of approximately 4000 freshmen students across both institutions. The sample size follows the Krejcie and Morgan formula [63], ensuring statistical adequacy for generalization. The participants include both male and female students from various disciplines and provinces, reflecting Cambodia's ethnic and geographic diversity. Each participant completed the structured questionnaire in about 30 minutes, responding to Likert-scale items covering academic, psychological, institutional, and socio-cultural dimensions.

3.3. Research Instrument

The primary research tool is a structured questionnaire consisting of 35 items categorized under seven dimensions relevant to academic adjustment. The instrument integrates and adapts components from established tools including the Student Adaptation to College Questionnaire (SACQ) [64], Dahmus's academic transition items [65]. To ensure content and cultural validity, the questionnaire was reviewed by Cambodian higher education experts and revised to reflect local norms and values, such as familial obligations, religious commitments, and linguistic diversity. These adaptations ensure the instrument's relevance to Cambodia's tertiary education context and its socio-cultural landscape.

3.4. Data Collection

Primary data were collected through face-to-face surveys, allowing clarification and rapport-building with participants—important in a culture where students may hesitate to express difficulties openly. The questionnaire captured demographic data (e.g., age, gender), and measured perceptions across five core domains: Individual Factors (INF), Instructional and School Factors (ISF), Social and Cultural Factors (SCF), Mental Factors (MEF), and Academic Attainment Factors (AAF), along with indicators of academic adjustment success (SAA) [60]. Secondary data were also collected through document analysis of existing studies on academic adjustment at the national and international levels, drawing from books, journals, institutional reports, and online resources [61].

3.5. Data Analysis

Quantitative data were analyzed using SPSS version 25. Descriptive statistics (mean, standard deviation) were used to summarize trends, while inferential statistics (regression, t-tests, ANOVA) tested hypotheses and examined relationships between variables [66]. Factor analysis was employed to validate construct dimensions, and correlation analysis assessed inter-variable relationships. This approach allows for a robust understanding of the systemic and individual-level factors influencing academic adjustment in Cambodia's evolving higher education system.

4. RESULTS AND DISCUSSION

4.1. Results

The demographic profile reveals a predominantly female sample (72%), suggesting increasing female access to higher education in Cambodia. This reflects ongoing shifts in gender norms, which traditionally limited women's participation in post-secondary education. According to Tinto's Student Integration Model, social and institutional integration are key to student persistence. The overrepresentation of female students here invites targeted support to ensure that institutional environments are inclusive and responsive to their social and academic needs.

Participants were largely traditional-aged students, with the majority aged 18–20, highlighting that most entered university immediately after completing secondary school. However, their adjustment challenges are compounded by their socioeconomic and educational backgrounds. Most students come from low-income households, with 66.3% earning less than \$300/month, and are first-generation college students—as indicated by the low levels of parental education. Further compounding these challenges, the vast majority of parents (over 65%) are farmers, confirming the rural and agrarian origins of most students. This demographic context affects students' cultural alignment with urban-based academic norms and language use, creating dissonance between home values and academic expectations. According to Person-Environment Fit Theory, such misalignment between individual characteristics and institutional demands can hinder academic adjustment unless institutions implement supportive, adaptive environments.

Participants were drawn from two provincial universities: University A (57.1%) and University B (42.9%). While this distribution allows for comparative analysis, it also underscores the regional disparities within Cambodia's higher education landscape. Provincial universities like these often operate with limited infrastructure, under-resourced libraries, and fewer qualified staff compared to those in Phnom Penh [12], [13]. These constraints disproportionately affect rural students, who already face adaptation challenges due to limited secondary preparation and restricted English proficiency. In the constructivist learning, students learn best when academic

content is socially relevant and personally meaningful [10]. The findings here point to the urgent need for locally contextualized curriculum development that reflects students' lived experiences—such as agriculture, rural livelihoods, and Buddhist values—rather than importing abstract or urban-centric content.

Table 1. Respondents' Demographic Table

Personal Information		Frequency N=350	Percent (%)
Gender	Male	98	28.0
	Female	252	72.0
Age of Participant		Frequency	Percent
	17	5	1.4
	18	79	22.6
	19	147	42.0
	20	83	23.7
	21	15	4.3
	22	9	2.6
	23	3	.9
	24	3	.9
	25	3	.9
	26	1	.3
	28	1	.3
	31	1	.3
University		Frequency	Percent
	University A	200	57.1
	University B	150	42.9
Family Income		Frequency	Percent
	Less than 300\$	232	66.3
	300\$ - 500\$	91	26.0
	501\$ - 700\$	21	6.0
	701\$ - 1000\$	5	1.4
	More than 1000\$	1	.3
Father Highest Education		Frequency	Percent
	No Formal Education	37	10.6
	Primary School	193	55.1
	High School	104	29.7
	Collect /University	12	3.4
	Post Graduate	4	1.1
Father Occupation		Frequency	Percent
	Government Assistance	25	7.1
	Private Company / NGO	3	.9
	Investor	36	10.3
	Farmer	247	70.6
	Others	39	11.1
	Government Assistance	25	7.1
	Private Company / NGO	3	.9
Mother Highest Education		Frequency	Percent
	No Formal Education	53	15.1
	Primary School	203	58.0
	High School	82	23.4
	Collect / University	10	2.9
	Postgraduate	2	.6
Mother Occupation		Frequency	Percent
	Government Assistance	9	2.6
	Private Company / NGO	2	.6
	Investor	65	18.6
	Farmer	229	65.4
	Others	45	12.9
	Total	350	100.0

As displayed in table 2, the internal consistency reliability of the questionnaire was assessed using Cronbach's Alpha, which provides insights into the reliability of the scale used to measure various dimensions of academic adjustment. The analysis reveals that the overall Cronbach's Alpha for all 25 items is .864, indicating a high level of internal consistency across the scale.

Table 2. Internal Consistency Reliability of Questionnaire

Categories	Number of Items
Individual Factor (INF)	4
Instructional and School Factor (ISF)	4
Social and Cultural Factor (SCF)	4
Mental Factor (MEF)	4
Academic Attainment Factor (AAF)	4
Success of Academic Adjustment (SAF)	5
	25 items
Total	Cronbach's Alpha = 0.864

In response to the first research question about what are the key factors influencing and how do they impact success of academic adjustment among first-year students in higher education institutions in Battambang, the regression analysis reveals a strong and statistically significant relationship between the predictors—INF, ISF, MEF, and AAF—and the dependent variable, SAA. The correlation coefficient ($R = 0.692$) indicates a strong positive linear relationship between the observed and predicted values of academic adjustment. The model explains 47.9% of the variance in academic adjustment ($R^2 = 0.479$), suggesting moderate to strong explanatory power. The Adjusted R^2 value of 0.472 confirms this, adjusting for the number of predictors and still reflecting a substantial amount of explained variance. The standard error of the estimate is 0.290, indicating that the model's predictions are close to the actual data points, with only small deviations.

The R^2 change of 0.479, consistent with the R^2 value, indicates that the predictors collectively account for nearly half of the variance in academic adjustment. The F-statistic (63.318) and the highly significant p-value (Sig. F Change = 0.000) confirm that the model is statistically significant, meaning the independent variables have a significant impact on academic adjustment. Overall, the analysis suggests that these factors are critical contributors to students' success in adjusting academically.

Table 3. Total Summary of Coefficients
Model Summary^b

R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
				R Square Change	F Change	df1	df2	Sig. F Change
.692 ^a	.479	.472	.290	.479	63.318	5	344	.000

a. Predictors: (Constant), AAF, INF, ISF, MEF, SCF

b. Dependent Variable: SAA

R = correlation coefficient; R Square (R^2) = coefficient of determination; Std. Error of the Estimate = the average distance that the observed values fall from the regression line

The Coefficients display in table 4 provides insights into the relationship between each independent variable and the dependent variable, Success of Academic Adjustment (SAA). The unstandardized coefficients (B) indicate the expected change in SAA for a one-unit change in each predictor, while the p-values (Sig.) reveal whether these changes are statistically significant.

The intercept ($B = 0.397$, Sig. = 0.026) is statistically significant, meaning that when all predictors are zero, the baseline level of academic adjustment is 0.397. Among the independent variables, ISF, SCF, MEF, and AAF all have positive and statistically significant impacts on SAA. Specifically, ISF ($B = 0.347$, Sig. = 0.000), SCF ($B = 0.139$, Sig. = 0.011), MEF ($B = 0.131$, Sig. = 0.008), and AAF ($B = 0.262$, Sig. = 0.000) significantly contribute to the Success of Academic Adjustment. However, Individual Factors (INF) do not have a statistically significant effect on academic adjustment ($B = 0.052$, Sig. = 0.306), indicating that INF do not play a significant role in this context.

The model highlights the importance of ISF, social and SCF, MEF, and AAF in fostering academic adjustment, while INF appears less influential. This reveals that successful adjustment depends on the degree of

fit between a student's attributes and the academic, social, and institutional environment, highlighting how peer support, cultural familiarity, emotional resilience, and stress regulation play vital roles in shaping students' engagement and performance. From a constructivist perspective, these findings affirm that students actively build knowledge through interaction with their academic and social environments, and that adjustment emerges not in isolation, but in dynamic and reciprocal interaction with institutional systems and peer networks.

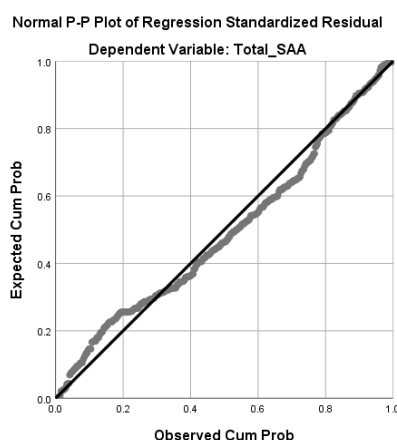


Figure 2. The regression line featuring a strong positive relationship between observed and predicted value of SAA

Constant		B	Beta	SE	t- value	Sig.	Decision
		.397		.178	2.230	.026	
Hypothesis	Relationship						
H1	INF → SAA	.052	.043	.051	1.025	.306	Not supported
H2	ISF → SAA	.347	.340	.050	7.001***	.000	Supported
H3	SCF → SAA	.139	.131	.054	2.571**	.011	Supported
H4	MEF → SAA	.131	.133	.049	2.662***	.008	Supported
H5	AAF → SAA	.262	.249	.050	5.253***	.000	Supported

Table 4. Summary of Part Coefficients and Hypothesis Testing

B = unstandardized coefficient. Beta = regression weight. SE = standard error. Sig = p-values. t -value = $*p < .10$ (marginally significant); $**p < .05$ (significant); $***p < .01$ (highly significant).

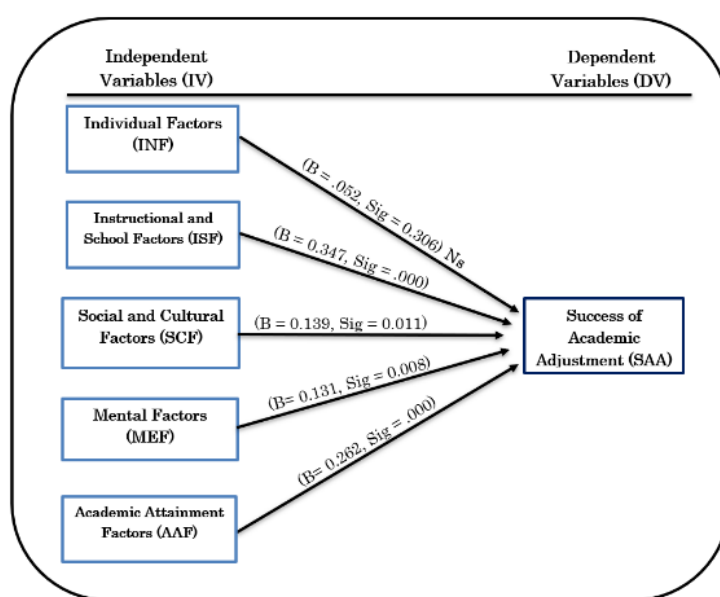


Figure 3. The predictor model showing the main effect and significant to SAA

The second research question examines whether there is a significant difference in academic adjustment between male and female first-year students at higher education institutions in Battambang. An Independent Sample t-test was conducted to compare the mean scores of male and female students across several factors related to academic adjustment.

The results indicate no statistically significant differences between male and female students in any of the factors assessed. For individual factors, the p-value ($p = .090$) suggests that although females scored slightly higher, the difference is not significant. Similarly, the analysis of instructional and school factors ($p = .865$), social and cultural factors ($p = .383$), mental factors ($p = .506$), and academic attainment factors ($p = .595$) all show that both genders experience these aspects of academic adjustment similarly. Finally, the success of academic adjustment also showed no significant difference ($p = .768$), with nearly identical mean scores for both genders.

The comparable adjustment levels between male and female students suggest that both genders perceive a relatively equal degree of alignment with institutional expectations and available support systems. Additionally, the similarity in psychological outcomes—such as stress regulation and motivation—between male and female students resonates with the positive psychology framework, which posits that resilience, optimism, and adaptation strategies are not inherently gendered but are shaped by access to social support and institutional responsiveness among these students.

	Gender	N	Mean	SD	t	df	Sig (2-tailed)
Individual Factors	Male	98	2.94	.359	-1.700	348	.090
	Female	252	3.01	.323			
Instructional and school factors	Male	98	3.11	.432	-.171	348	.865
	Female	252	3.12	.374			
Social and cultural factors	Male	98	2.87	.427	-.874	348	.383
	Female	252	2.91	.356			
Mental factors	Male	98	2.88	.467	-.665	348	.506
	Female	252	2.91	.378			
Academic attainment factors	Male	98	3.08	.443	.532	348	.595
	Female	252	3.05	.351			
Success of Academic Adjustment	Male	98	3.21	.409	-.295	.409	.768
	Female	252	3.22	.395			

Table 5. Independent Sample t-test

t (t-value) = the means of two groups. df = Degrees of Freedom, Sig (2-tailed) = Significance Level or p-value, a p-value less than 0.05 ($p < 0.05$) typically indicates statistical significance

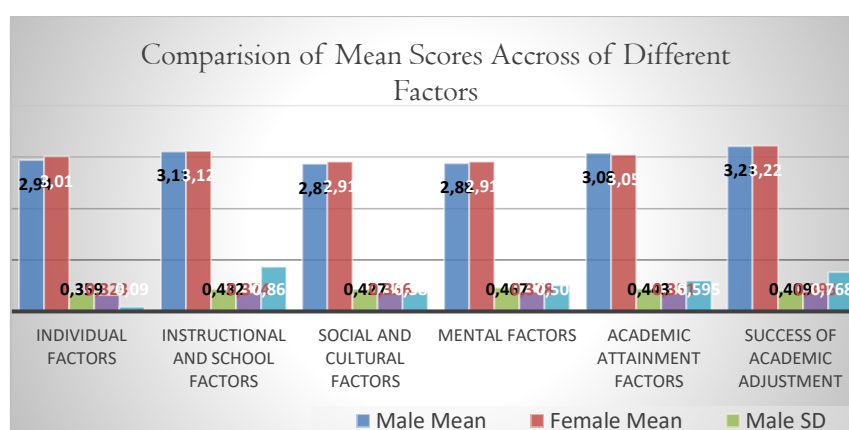


Figure 4. Compare mean scores across factors

The third research question aims at determining whether there are significant differences in the academic adjustment among first-year students between institutional settings. Specifically, it seeks to understand whether students from the National University of Battambang and the Preah Sihanouk Raja Buddhist University of Battambang exhibit differences on their academic adjustment. To address this, a One-Way ANOVA was conducted to compare the academic adjustment of first-year students between these two institutions across various factors.

The results reveal that significant differences exist in several areas. Detailed analysis shows that while individual factors do not significantly differ between National University of Battambang and Preah Sihanouk Raja Buddhist University of Battambang students ($F(1, 348) = 0.466, p = 0.495$), there are significant differences in other areas. Instructional and school factors ($F(1, 348) = 26.863, p < 0.001$), social and cultural factors ($F(1, 348) = 45.388, p < 0.001$), mental factors ($F(1, 348) = 20.250, p < 0.001$), and academic attainment factors ($F(1, 348) = 11.120, p = 0.001$) all show significant differences between students at the two institutions. Additionally, the success of academic adjustment differs significantly ($F(1, 348) = 14.643, p < 0.001$).

The stark contrasts between students from the National University of Battambang and the Preah Sihanouk Raja Buddhist University of Battambang suggest that the institutional environment—including quality of instruction, learning resources, school culture, and support systems—plays a critical role in shaping students' academic adjustment. When institutional structures do not align with students' cognitive, cultural, or emotional needs, adjustment becomes strained, reinforcing the theory's emphasis on environmental responsiveness.

Table 6. One-way ANOVA among National University of Battambang and Preah Sihanouk Raja Buddhist University of Battambang first-year students

		Sum of Squares	df	Mean Square	F	Sig.
Individual Factors	Between Groups	.052	1	.052	.466	.495
	Within Groups	38.922	348	.112		
	Total	38.974	349			
Instructional and school factors	Between Groups	3.810	1	3.810	26.863	.000
	Within Groups	49.357	348	.142		
	Total	53.167	349			
Social and cultural factors	Between Groups	5.720	1	5.720	45.388	.000
	Within Groups	43.859	348	.126		
	Total	49.579	349			
Mental factors	Between Groups	3.135	1	3.135	20.250	.000
	Within Groups	53.878	348	.155		
	Total	57.014	349			
Academic attainment factors	Between Groups	1.549	1	1.549	11.120	.001
	Within Groups	48.484	348	.139		
	Total	50.033	349			
Success of Academic Adjustment	Between Groups	2.240	1	2.240	14.643	.000
	Within Groups	53.242	348	.153		
	Total	55.482	349			

Sum of Squares = total variance in the data. Degrees of Freedom (df) = number of independent values. Mean Square = average of the sum of squares. F-value = ratio of the Mean Square Between Groups to the Mean Square Within Groups. Significance (Sig. or p-value) = the probability that the observed differences between group means. A p-value less than 0.05 ($p < 0.05$) is considered statistically significant.

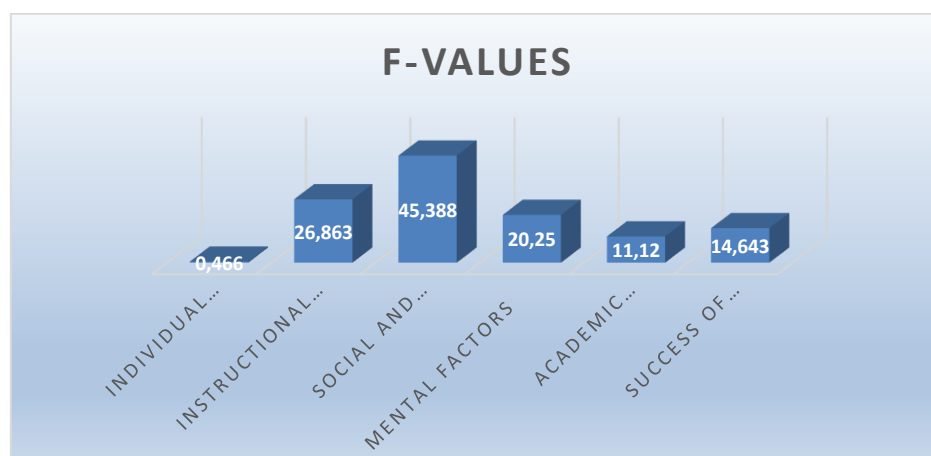


Figure 5. ANOVA results between National University of Battambang and Preah Sihanouk Raja Buddhist University of Battambang

4.2. Discussion

The findings from Research Question 1 reveal that instructional and school factors (ISF), social and cultural factors (SCF), mental factors (MEF), and academic attainment factors (AAF) are statistically significant predictors of first-year students' academic adjustment (SAA), whereas individual factors (INF) show no significant effect. These results emphasize that successful adjustment depends on how well students' personal characteristics align with the academic, social, and institutional environments align with [22], [28], [67], [68]. The strong influence of ISF ($B = 0.347$, $p < .001$) illustrates the importance of objective institutional fit—including access to quality pedagogy, structured academic support, and learning resources—as foundational to student adjustment align with [69], [70].

The significance of SCF ($B = 0.139$, $p = .011$) and MEF ($B = 0.131$, $p = .008$) further supports the theory's multidimensional fit and psychological outcomes components, revealing that peer networks, cultural familiarity, emotional resilience, and stress regulation play vital roles in fostering engagement and academic performance. From a constructivist perspective, these findings affirm that students do not adjust in isolation, but through dynamic interactions with their learning environment, peers, and institutional structures conform to [52], [53], [71], [72].

Notably, the non-significance of INF ($B = 0.052$, $p = .306$) challenges assumptions common in Western-centric literature that emphasize traits like time management or prior academic habits. In Cambodia's resource-constrained context, where many students come from rural, low-income families with limited cultural capital or formal educational background, institutional support plays a far greater role. These findings argue that academic success is shaped more by social structures than individual aptitude align with [39], [59], [73], [74].

Research Question 2 examined gender differences in academic adjustment. The Independent Samples t-test found no statistically significant differences between male and female students across any of the five dimensions, including SAA ($p > .05$). This outcome focuses on students' own perceptions of alignment with their environment. It suggests that male and female students in Battambang perceive relatively equal opportunities and support in navigating their academic transition consistent with [56], [57], [75].

Furthermore, from a positive psychology framework, the similar levels of psychological outcomes such as stress regulation and motivation indicate that resilience and coping strategies are not inherently gendered, but shaped by access to supportive environments [53], [54], [76]. A constructivist and social learning lens also help explain these results: both genders likely engage equally in collaborative learning, peer interaction, and institutional life, promoting similar pathways to adjustment align with finding of [59], [71], [72]. The predominance of female participants (72%) may also reflect shifting cultural norms and increasing gender inclusivity in Cambodia's higher education sector. However, shared environmental constraints—such as limited infrastructure and economic hardship—may mask more nuanced gender-specific barriers that warrant further exploration.

Research Question 3 explored whether institutional differences impact academic adjustment. The One-Way ANOVA revealed significant differences between students at the National University of Battambang and the Preah Sihanouk Raja Buddhist University of Battambang in ISF, SCF, MEF, AAF, and overall SAA, while INF showed no variation. These disparities emphasize on institutional complementarity and objective fit, suggesting that the structure, pedagogy, and support systems at each institution critically shape students' ability to adjust conform to [56], [59], .

These findings highlight that adjustment is shaped by institutional climate, peer collaboration, and faculty-student interactions align with [56]. Differences in mental factors further suggest that institutional environments vary in how effectively they foster student resilience and motivation—key dimensions of psychological outcomes and adaptation mechanisms within the PE Fit and positive psychology frameworks align with [68], [72], [75].

In Cambodia's post-conflict, developing context, these institutional disparities highlight deep-rooted structural inequalities. Provincial institutions like Preah Sihanouk Raja Buddhist University of Battambang is often in limited the pedagogical infrastructure, student services, and learning resources available at larger universities like National University of Battambang conform to [69], [70]. The absence of differences in INF suggests that students enter higher education with comparable personal attributes, but diverge in their adjustment trajectories based on institutional capacity. This reinforces the notion that in unequal systems, environmental responsiveness—not individual aptitude—is the decisive factor in academic success [68].

The findings also offer practical implications for educational equity and social inclusion. The importance of ISF, SCF, MEF, and AAF implies that universities in Battambang—and similar contexts, under-resourced regions—must strengthen context-specific support structures, including culturally inclusive curricula, emotional counseling, peer mentoring, and financial assistance programs. Doing so can foster better person-environment alignment, reducing dropout rates and enhancing success among first-generation and rural students [69], [77].

In post-conflict and developing contexts like Cambodia, structural constraints such as poverty, inadequate secondary preparation, and limited institutional support may override traditional gender disparities in influencing

academic outcomes. Thus, the findings reinforce the view that academic adjustment is primarily shaped by systemic and contextual factors rather than gender alone [67], [78].

This has important implications for educational policy and social equity: rather than focusing solely on gender-specific interventions, institutions should prioritize broader, inclusive student support systems that benefit all learners regardless of gender. Efforts should focus on improving instructional quality, psychosocial support, and resource access, which the study shows are more predictive of adjustment success than individual or gender-based characteristics. It also holds important implications for educational equity and social inclusion in Cambodia. This suggests that targeted institutional reforms—particularly in smaller, resource-constrained universities—are critical for leveling the field of academic opportunity. Strengthening school-level infrastructure, improving teaching quality, and enhancing cultural and mental health support services are essential steps toward ensuring that institutional setting does not predetermine a student's success [79]–[81].

5. CONCLUSION

This study underscores that academic adjustment among first-year students in Battambang is shaped primarily by institutional, social, and psychological factors rather than individual traits. Instructional quality, peer support, cultural familiarity, and emotional resilience emerged as key predictors of success, highlighting the importance of a strong person-environment fit. Gender differences in adjustment were found to be negligible, suggesting that both male and female students experience similar institutional and social conditions. However, institutional disparities between universities significantly influenced adjustment outcomes, emphasizing the role of environmental structures such as pedagogy, student services, and academic support. These findings challenge Western-centric models that prioritize individual readiness, revealing that in resource-limited settings like Cambodia, institutional responsiveness is more crucial than personal attributes. Ultimately, academic adjustment is a socially embedded process, deeply affected by the quality and equity of institutional environments. Addressing structural gaps in provincial higher education institutions is therefore essential to fostering student success and educational equity in post-conflict, developing contexts.

Given the importance of academic adjustment for freshmen, more focused research is needed on this topic. Despite its significance, studies on the transition to university life for freshmen are limited. Future research should (1) explore how personal attributes like self-motivation and time management interact with external support systems, particularly when institutional supports are weak or within different cultural contexts; (2) investigate how factors such as instructional support and social influences impact academic adjustment throughout a student's academic journey, employing longitudinal studies; and (3) conduct cross-cultural comparisons to understand how different cultural contexts impact the academic adjustment process, particularly how social integration and community support differ in their effects on academic adjustment.

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