

## Factors Influencing ASEAN Undergraduate Student Satisfaction with Guangxi's Universities

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### Abstract

With the development of internationalization in higher education, research on the satisfaction of international students has grown in importance in the field of higher education. This study aims to examine the satisfaction level of ASEAN undergraduate students studying in Guangxi and analyze the factors influencing ASEAN undergraduate student satisfaction with Guangxi's universities. This study adopted a quantitative approach to collect questionnaires from 468 ASEAN undergraduate students currently studying in 9 public universities in Guangxi, China. The results showed that ASEAN undergraduate students have a high overall satisfaction level with higher education in China. The findings indicated that perceived quality, and perceived cultural distance have a significant positive effect on ASEAN undergraduate students' satisfaction. This paper provides reference value for understanding the formation mechanism of international student satisfaction, and for policymakers and managers to enhance international student satisfaction.

**Keywords:** ASEAN, Guangxi, Undergraduate Student, Student Satisfaction

### Introduction

The internationalization of higher education has become a development trend in the field of higher education in recent decades. It is mainly manifested in the following aspects: 1. International organizations such as the OECD, UNESCO, as well as higher education organizations such as the International Association of Universities (IAU), have regarded internationalization as the top agenda for reform; 2. In the past decade, there has been a surge in the number of international students (as well as international faculty). The number of international students worldwide increased from nearly 2 million in 2000 to 6.3 million in 2020, doubling in 20 years (OECD, 2023) 3. The number of branches of universities abroad has increased. As of 2017, higher education institutions (HEIs) in 33 countries have licensed 249 international branch campuses (IBCs) in 76 host countries, with an IBC growth rate of 26% in

the past five years (Paniagua et al., 2022). Higher education has become a highly industrialized field, which has a positive impact on promoting economic growth, enhancing international relations, promoting cultural exchange, and enhancing soft power (Hossain et al., 2018).

In this context, the satisfaction of international students has become a hot topic of concern. For the local people, satisfied international students will bring financial benefits (Lanphier, 2021), which is important for the economies of countries with sluggish growth after the COVID-19 epidemic. For HEIs, satisfied international students can lead to loyalty towards the HEIs, enhance the reputation of the HEIs through word of mouth, and play a positive role in improving quality, expanding scale, and strengthening academic communication and cooperation (Alvis & Rapaso, 2007; Kéri & Hetesi, 2022). For individual students, student satisfaction can enhance their motivation and promote their personal success (Elliott and Shin, 2002).

China is an important destination for international students, with a total of 221,653 international students studying in China as of 2023 (Data source: the Ministry of Education of China), accounting for 3.5% of the world's international students. China strongly supports the internationalization of higher education and has made great efforts. However, in this process, China has encountered significant challenges, such as language barriers, cultural differences, a shortage of international faculty, etc.

Based on the above background, this study aims to investigate the satisfaction level of ASEAN international students studying in Guangxi's universities and analyze the influence of the key factors on ASEAN undergraduate students' satisfaction. The research questions this study attempts to answer are: 1). What is the satisfaction level of ASEAN international students studying in China? 2). What factors play an important role in predicting ASEAN students' satisfaction? To achieve the research objectives, this study has taken ASEAN undergraduate students studying in Guangxi's public universities as a sample to conduct research.

### **Literature Review**

Numerous studies have shown that stronger student engagement leads to higher student satisfaction levels (Gray and Diloreto, 2016; Korobova and Starobin, 2015). When students are engaged, they feel a sense of ownership over their learning experience, which can lead to higher levels of satisfaction (Pandita and Kiran, 2023). However, some studies demonstrated that there were no statistically significant relationships between student engagement and overall satisfaction (Pelletier et al., 2016). Based on this, this study proposes the first hypothesis.

H1: Student engagement has a positive direct effect on student satisfaction.

There are some studies supporting the idea that perceived outcomes have a positive direct effect on student satisfaction (Hartman and Schmidt, 1995; Gibson, 2010; Garnjost and Lawter, 2019). If students are more likely to retain information, perform well academically, then they are more likely to feel satisfied with their learning experience (Pandita and Kiran, 2023). A study has found that the direct impact of students' perceived learning during the COVID-19 pandemic could affect student satisfaction (Baber, 2020). There is also research showing that students' perceived benefits and willingness to adopt technology-enhance learning have a significant and positive impact on their satisfaction (Dubey and Sahu, 2021).

However, Michael et al (2008) also pointed out that educational outcomes have indirect effects on student satisfaction through the mediator variable—service quality. Based on this, this study proposes the second hypothesis.

H2: Perceived outcomes have a positive direct effect on student satisfaction.

Several studies have demonstrated that perceived quality has a significantly positive effect on student satisfaction in higher education institutions (Parasuraman et al., 1988; Bitner, 1990; Bashir et al., 2020). One study divided perceived quality into the quality of 'human ware' or 'software' and the quality of 'hardware' (Shahsavari and Sudzina, 2017). In the higher education sector, 'software' includes human factors such as teaching, academic standards, teaching methods, and personal contact with teaching staff and administrators. 'Hardware' includes the non-human elements of the provided learning programs, curricula, and support functions (classrooms, libraries, computer facilities, equipment, student offices, etc.). The research result showed that both the quality of 'software' and the quality of 'hardware' have a direct and indirect impact on student satisfaction. There are also studies examining the impact of perceived service quality on student satisfaction in higher education institutions, verifying the positive relationship between the two (Martínez-Argüelles and Batalla-Busquets, 2016; Annamdevula and Bellamkonda, 2016). However, some scholars insisted that service quality is the antecedent of customer satisfaction (Cronin, 1992; Browne et al. 1998; Polas et al., 2020; Polas et al., 2019). Therefore, this study proposes the third hypothesis.

H3: Perceived quality has a positive direct effect on student satisfaction.

There are researches results suggest that perceived cultural distance is an important factor in the acculturation and adjustment especially sociocultural adaptation of international students (Finn et al. 2022; Neto, 2019; Hossain et al., 2023). Other studies demonstrated that cultural differences have an impact on academic satisfaction, which is an important aspect of student satisfaction (Diener, 1995). However, there is one study found that perceived cultural distance can negatively affect the adjustment of international students (Malay et al., 2023). Based on this, this study proposes the fourth hypothesis.

H4: Perceived cultural distance has a positive direct effect on student satisfaction.

Based on the literature review, this study selected four independent variables - student engagement, perceived outcomes, perceived quality, perceived cultural distance, and a dependent variable - student satisfaction. The following conceptual framework was constructed.

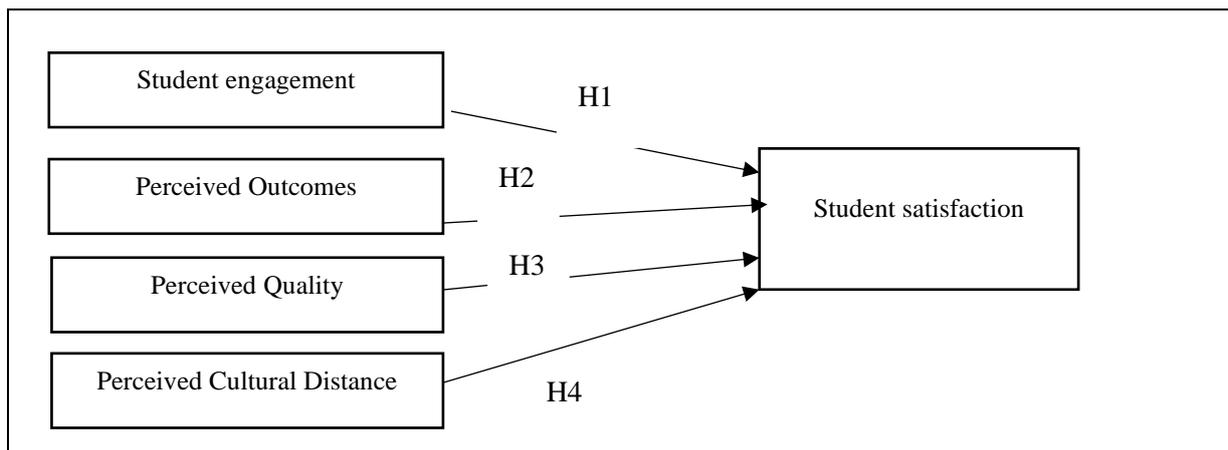


Figure 1 The Conceptual Framework of this study

## Research Methodology

### *Research Design*

This study adopted a deductive approach as it aims to develop theory by testing relevant theoretical hypotheses. A correlational research method was applied to examine the relationships between IVs and DV. To achieve the purpose of the study, a questionnaire survey was used to collect data. This study is a cross-sectional study as the information and data are collected at a given point in time.

### *Population and Sampling*

The target population of this study is ASEAN undergraduate students studying in Guangxi's universities. According to data from the Guangxi Education Department, as of 2022, there were a total of 5,695 ASEAN international students studying at 37 universities or colleges in Guangxi. This thesis used the Yamane formula (Yamane, 1967) to calculate the sample size, and the calculation result is that the sample size of this study should be at least 374. In order to prevent the occurrence of unqualified questionnaires, the sample size was larger than 374 people when sampling specific operations.

### *Instrument*

This study used structured questionnaires to collect data. The questionnaire consists of two parts. The first part is demographic information, including gender, age, grade, nationality, and educational goal. The second part consists of 36 measurement items, mainly involving 4 independent variables (student engagement, perceived outcomes, perceived quality, perceived cultural distance) and 1 dependent variable (student satisfaction), filled out using the 5-point Likert scale. This study drew on the authoritative large-scale student satisfaction survey questionnaire (SSI, CSEQ, NSSE, NSS and ISB) and referenced influential literature (Nesdale & Mak, 2003; Michael et al., 2008; Gray & Diloreto, 2016) to develop the measurement scale as the research instrument.

Table 1

*Summary of Construct*

Variable	Dimension	Indicators
student engagement	learner interactions	4 items
	course effort	3 items
perceived outcomes	personal development	3 items
	career prospects	3 items
	employability and skills	3 items
perceived quality	technical quality	6 items
	functional quality	5 items
	environment quality	4 items
perceived cultural distance		3 items
student satisfaction		2 items

*Analysis Techniques*

This study use IBM SPSS Statistics 22 and AMOS 22 to conduct the data analysis. SPSS was used for demographic statistics, descriptive statistics, reliability testing, and validity testing, and exploratory factor analysis(EFA). Amos was used for confirmatory factor analysis (CFA), and structural equation modeling (SEM).

**Data Analysis***Demographic Analysis*

In December 2022, this study conducted a questionnaire survey on ASEAN undergraduate students at 9 public universities in Guangxi. Eventually, 468 valid questionnaires were collected through the Internet. Before further analysis, this study conducted a statistical analysis of the demographic information of the questionnaires.

Table 2

*Demographic Analysis*

		Frequency	Percent			Frequency	Percent
Gender	Male	142	30.3	Nationality	Vietnam	260	55.6
	Female	326	69.7		Thailand	74	15.8
	Total	468	100		Laos	67	14.3
Age	18 and under	127	27.1	Indonesia	34	7.3	
	19 to 24	329	70.3	Cambodia	21	4.5	
	25 to 30	12	2.6	Malaysia	8	1.7	
	Total	468	100	Myanmar	4	0.9	
	Total	468	100	Total	468	100	
Class Level	freshman	120	25.6	Educational goal	Bachelor	225	48.1
	sophomore	105	22.4		Master	49	10.5
	junior	123	26.3		Doctorate	151	32.3
	senior	120	25.6		Not decided yet	43	9.2
	Fifth-year student	0	0		Total	468	100
Total	468	100	Total	468	100		

According to the sample set, the respondents are mainly female(69.7%), mainly aged 19 to 24(70.3%), and most of their nationalities are Vietnamese(55.6%). Most of the respondents are junior students(26.3%), and their main educational goal is to obtain a bachelor's degree(48.1%). The composition of the sample is basically consistent with the situation of ASEAN undergraduate students studying in Guangxi that this study has learned.

### *Descriptive Statistics*

Table 3

#### *Descriptive Statistics*

<b>Constructs</b>	<b>No. of items</b>	<b>Mean</b>	<b>Std. Deviation</b>	<b>Variance</b>	<b>Skewness</b>	<b>Kurtosis</b>
student engagement	7	3.84	0.971	0.944	-1.198	0.426
perceived outcomes	9	3.76	0.976	0.953	-0.607	-0.46
Perceived quality	15	4.044	0.797	0.637	-0.6	-0.41
Perceived cultural distance	3	3.48	1.072	1.15	-0.631	-0.52
Student satisfaction	2	3.48	1.023	1.048	-0.487	-0.45

According to Table 3, the average values of each option are greater than 3, indicating that the majority of respondents gave positive evaluations. The average value of student satisfaction is 3.48, which means that the overall level of student satisfaction is relatively high.

The variance and standard deviation of perceived cultural distance and student satisfaction are relatively large, indicating that students have diverse opinions and attitudes toward perceived cultural distance and student satisfaction, with relatively large data fluctuations.

The kurtosis and skewness of each factor were less than 0 (except for student engagement), indicating that the data has a characteristic of a flat peak distribution and a negative skewed distribution.

### *Reliability and Validity Measures*

This study uses SPSS to test the Cronbach's alpha of the questionnaire, so as to measure internal consistency reliability. In quantitative study, a Cronbach's alpha value of 0.70 or above is generally considered acceptable, while a value of 0.90 or above is considered best (Taber, K.S.,2018). The overall Cronbach alpha value of the questionnaire reached 0.924, and the result of Table 4 showed that each variable's Cronbach alpha value is more than 0.7, indicating that the questionnaire has good reliability.

Table 4

*Reliability and Validity Testing Results*

Constructs	Factor loading	Cronbach's Alpha	AVE	CR
student engagement		0.923	0.631	0.929
SE1	0.838			
SE2	0.835			
SE3	0.832			
SE4	0.827			
SE5	0.817			
SE6	0.811			
SE7	0.763			
perceived outcomes		0.940	0.637	0.940
PO1	0.831			
PO2	0.829			
PO3	0.821			
PO4	0.817			
PO5	0.814			
PO6	0.802			
PO7	0.801			
PO8	0.792			
PO9	0.786			
Perceived quality		0.947	0.544	0.947
PQ1	0.808			
PQ2	0.779			
PQ3	0.772			
PQ4	0.763			
PQ5	0.759			
PQ6	0.755			
PQ7	0.745			
PQ8	0.743			
PQ9	0.734			
PQ10	0.731			
PQ11	0.728			
PQ12	0.723			
PQ13	0.719			
PQ14	0.707			
PQ15	0.698			
Perceived cultural distance		0.861	0.678	0.862
PCD1	0.872			
PCD2	0.856			
PCD3	0.842			
Student satisfaction		0.768	0.628	0.771
SS1	0.835			
SS2	0.821			

In this study, exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) are used to measure construct validity. Before EFA, the researcher has conducted the KMO and

Bartlett’s test. The result showed that KMO is 0.937, greater than 0.6. The approximate chi-square is 11043.072, degree of freedom is 630, and P value = 0.000 < 0.05, reaching a significant level to meet the prerequisite requirements of factor analysis, which means that the data can be used for factor analysis research. After EFA, a total of 5 factors are extracted after rotation, and the items corresponding to each common factor are consistent with the preset variables of the questionnaire, indicating that the design of the questionnaire is reasonable, and the factor loading of each item is greater than 0.7, indicating that the information of these research items can be effectively extracted. The CFA result showed that the AVE values of all dimensions are greater than 0.5 and CR value greater than 0.7, indicating that the scale has good validity.

*Structural Equation Modeling*

In order to examine the causal relationship between the variables, this study uses AMOS to construct a structural equation model, as shown in Figure 2.

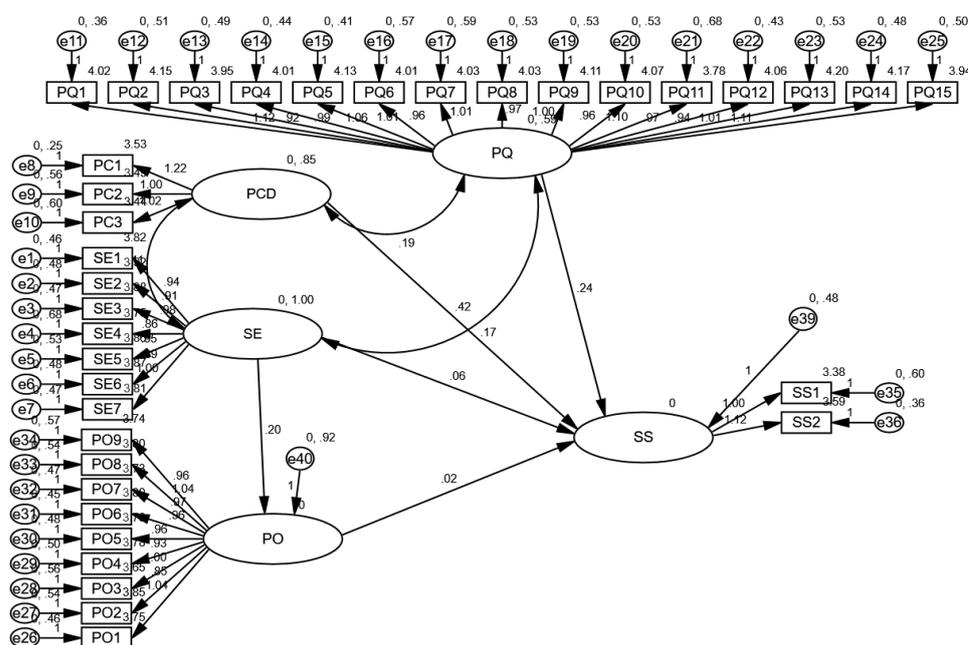


Figure 2 Final Structural Equation Model

After drawing the model diagram in AMOS, the researcher imported the collected data and then performed the fitness test on the structural equation model. The results are shown in the following table.

Table 5  
Fitting Test Results of Structural Equation Model

Common indicators	X <sup>2</sup> /df	GFI	RMSEA	CFI	NFI	AGFI
Judgment standard	<3	>0.5	<0.05	>0.9	>0.8	>0.8
Value	1.799	0.891	0.041	0.956	0.907	0.876

It can be seen from Table 5 that the overall fitting degree of the model shows that CMIN/DF=1.799, which is less than the reference value of 2; AGFI=0.876, GFI=0.891 is greater than the reference value of 0.8, CFI=0.956, NFI=0.907 are greater than the reference value of

0.8; RMSEA=0.041, which is less than the reference value of 0.05. It can be seen that all indicators of the model in this research meet the standard, indicating that the model in the current study as a good fit, which can be used for the next analysis.

Table 6

*Path Coefficient Results*

				Estimate (standardized)	S.E.	C.R.	P	Conclusion
H1	SS	<---	SE	0.061	0.042	1.433	0.152	rejected
H2	SS	<---	PO	0.017	0.043	0.388	0.698	rejected
H3	SS	<---	PQ	0.240	0.059	4.099	***	supported
H4	SS	<---	PCD	0.416	0.062	6.690	***	supported

The path coefficient of student engagement on student satisfaction is 0.061, with a p-value of 0.152 ( $p > 0.05$ ), indicating that student engagement has no effect on student satisfaction. Therefore, the result rejected hypothesis H1.

The path coefficient of perceived outcomes on student satisfaction is 0.017, with a p-value of 0.698 ( $p > 0.05$ ), indicating that perceived outcomes have no effect on student satisfaction. Therefore, the result rejected hypothesis H2.

The path coefficient of perceived quality on student satisfaction is 0.240 ( $p < 0.05$ ), indicating that perceived quality has a significant positive effect on student satisfaction. Therefore, the result supported hypothesis H3.

The path coefficient of perceived cultural distance on student satisfaction is 0.416 ( $p < 0.05$ ), indicating that perceived cultural distance has a significant positive impact on student satisfaction. Therefore, the result supported hypothesis H4.

**Summary, Recommendations, and Conclusions****Findings and Discussion**

The result of this study showed that the overall satisfaction level of ASEAN students is relatively high. This study also attempts to answer the influencing factors of international student satisfaction, and the research results differ from previous studies. Previous studies in different contexts provide evidence of a significant positive effect of student engagement, perceived outcomes, and perceived quality, on student satisfaction (Parasuraman et al., 1988; Gibson, 2010; Pandita & Kiran, 2023 ). However, most of the studies focused on the effects of perceived service quality on student satisfaction (Bitner, 1990; Annamdevula & Bellamkonda, 2016). This study emphasizes that perceived cultural distance is also vital for student satisfaction in the higher education sector.

In previous studies, perceived cultural distance has rarely been studied as a direct influencing factor on international students' satisfaction, but more often as a factor affecting international students' social, cultural, psychological adaptation Mihut & Darmody (2022); Neto (2019), and academic satisfaction Diener (1995), and then indirectly affecting their satisfaction. The results of this study indicate that perceived cultural distance has a direct and significant impact on the satisfaction of international students. The possible reason for this result is that the degree of internationalization of higher education in universities is relatively low, manifested in the lack of international teachers and foreign affairs management personnel, and the inability of management systems to adapt to international needs (Javed et al., 2020; Al Qalhati et al., 2020). At present, China's internationalization of higher

education is more policy-driven, and in the future, the management of international student education needs to develop towards a more refined and individual-centered model.

Besides, the result of this study showed that student engagement and perceived outcomes have no significant impact on student satisfaction, which contradicts previous results. Student engagement to some extent can be considered as students' investment in their overseas educational experience, while perceived outcomes can be seen as students' expected output of their overseas educational experience. Does the truth that input and output expectations of international students do not have a significant impact on student satisfaction, means that international students are more focused on evaluating educational experiences not based on utilitarian considerations, but rather on the quality of education itself? This reminds managers in the field of higher education to return to the essence of education and prioritize the improvement of educational quality, rather than using a series of external measurement indicators as the baton for educational reform.

### **Limitations**

This study aims to survey the influencing factors of ASEAN students studying in Guangxi's universities, but the respondents in this study only include ASEAN students from 7 countries. As this study did not have access to students from all ASEAN countries, this has led to the limitation of this study. Although the results show that the model of this study fits well, it cannot be assumed that the model has general applicability to higher education institutions in other regions.

### **Recommendations for Future Research**

Future studies can incorporate more factors when examining the factors influencing student satisfaction, such as perceived equity, perceived value, and student expectations, etc. In examining the factors influencing international student satisfaction, more dimensions of perceived cultural distance can be measured. Future research could conduct surveys of faculty to understand student satisfaction from another perspective of instructors and administrators.

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