



Research Article

Satisfaction Level of the Students on the Quality of Services Provided by Build Bright University, Siem Reap Campus

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Abstract: This research investigates the key factors influencing student satisfaction with the quality of services provided at Build Bright University (BBU), Siem Reap Campus, Cambodia. The study aims to evaluate the benefits of maintaining and enhancing service quality to attract and retain students, assess overall student satisfaction levels, and examine strategies used to promote professional development among students. A quantitative research design, utilizing descriptive statistics and a survey-based methodology, was employed to gather data from 438 first-year students enrolled in the Foundation Year program. The findings highlight that students express high satisfaction with accreditation, the formal recognition of the university's academic standards, curriculum alignment, the extent to which the academic programs meet national and international educational standards, teacher resources, the availability of qualified instructors, teaching materials, and instructional strategies, and professional staff, administrative and support staff who contribute to a positive academic environment. However, areas such as course materials, textbooks, reading materials, and online resources, learning resources, additional materials and tools that enhance learning, and campus facilities, physical infrastructure such as classrooms, laboratories, and study spaces, need improvement. Based on these results, the study provides recommendations to enhance service quality, including updating course materials, upgrading campus infrastructure, strengthening faculty development programs, and improving student support services. This research offers valuable in-sights into the factors shaping student satisfaction in Cambodian higher education institutions and highlights strategies for improving student retention and success.

Keywords: educational quality assessment; higher education services; service quality improvement; academic Satisfaction

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1. Introduction

Higher education serves as a cornerstone for economic and social development, fostering individual growth and contributing to national progress (Jia et al., 2022). Cambodia, like its regional counterparts, is striving to expand and enhance its higher education sector to meet the growing aspirations of its population. However, the country faces unique challenges rooted in its turbulent history. The Khmer Rouge regime (1975–1979) severely disrupted education, eradicating critical human resources and educational infrastructure (Bennett, 2019). While significant progress has been made since the privatization of higher education in 1997, which spurred rapid growth in student enrollments and institutions, concerns about quality persist. These challenges include inadequate academic resources, low faculty qualifications, and limited research output, which hinder Cambodia's integration into the global academic community.

In Siem Reap, a province with diverse educational providers – including government schools, NGO schools, and private universities – Build Bright University (BBU) stands out as a pivotal institution. Established in 2002, BBU's Siem Reap Campus has provided critical benefits to the local community. By offering programs from associate to doctoral levels, it has reduced the financial burden on families by eliminating the need for students to relocate to Phnom Penh. Additionally, BBU has facilitated local job opportunities, empowering both men and women to compete in an increasingly dynamic job market. Despite its contributions,

questions remain about the quality of services provided by BBU, especially in terms of student satisfaction, which is a key indicator of institutional success (Pandita & Kiran, 2023).

A review of existing literature highlights several dimensions of student satisfaction in higher education, including teaching quality, campus facilities, administrative support, and digital accessibility (Li et al., 2022). However, studies specifically addressing Cambodian higher education are limited, particularly in the context of regional institutions like BBU (Ek & Muth, 2023). Existing research has largely focused on national-level trends, leaving a gap in understanding localized factors affecting student satisfaction. Moreover, while the global shift towards digital education has transformed higher education delivery, its implications for institutions like BBU remain underexplored (Guo, 2022).

Addressing this gap is critical to ensuring that institutions like BBU can maintain relevance and competitiveness. This study is, therefore, necessary to identify the primary factors influencing student satisfaction with the quality of services provided by Build Bright University, Siem Reap Campus. By understanding these determinants, the research aims to contribute to improving service delivery and enhancing the overall educational experience for students.

Objective of study

To critically investigate the factors shaping student satisfaction with the quality of services provided by Build Bright University, Siem Reap Campus, with a focus on improving service quality to attract, retain, and support students' professional development.

2. Literature Review

2.1. Understanding the Factors Shaping Student Satisfaction

The conceptual review explores the key concepts that underpin the study, highlighting their interconnections and relevance to understanding student satisfaction and service quality at Build Bright University, Siem Reap Campus. Central to this investigation are concepts such as quality assurance, curriculum, teaching materials and instructional strategies, information services and student support staff, infrastructure, and main course books and learning materials. These factors collectively influence the quality of the educational experience, shaping students' overall satisfaction. The alignment between the curriculum design, the effectiveness of teaching methods, and the availability of student support services plays a significant role in how students perceive the quality of education. Similarly, the infrastructure of the institution, including classrooms and facilities, and the availability of relevant learning resources, further contribute to the overall student experience. This conceptual framework highlights the need for an integrated approach to improving service quality, with a focus on enhancing these key elements to attract, retain, and support students' professional development.

The quality assurance in higher education is critically linked to accreditation, which serves as a formal recognition of an institution's adherence to recognized educational standards (Kayyali, 2023). Accreditation ensures that institutions provide quality education and meet both national and international benchmarks, promoting trust among students, parents, and stake-holders (Duarte & Vardasca, 2023). This process emphasizes accountability and continuous improvement in educational quality.

The curriculum forms the foundation of an institution's academic offerings, aligning with national higher education and postgraduate standards while incorporating an international scope to enhance students' employability (Schwartz & Diliberti, 2021). By ensuring compatibility with global job market requirements, curricula contribute to the development of industry-ready graduates. In addition, the inclusion of international perspectives fosters global competencies, enabling students to adapt to diverse professional environments (Bermúdez-Edo et al., 2017).

Teaching materials and instructional strategies are integral to enhancing the learning experience (Arif et al., 2023). Effective teaching resources, coupled with innovative pedagogical techniques, improve students' comprehension and retention (Febria, 2021). Institutions that prioritize dynamic teaching strategies and interactive learning foster critical thinking and engagement among students (Adewusi et al., 2023; Lundvall, 2012)

Information services and student support staff play a pivotal role in enriching the academic journey. These professionals, characterized by their gentleness, friendliness, and high levels of responsibility, contribute significantly to students' academic success and personal development. By providing timely assistance and fostering an inclusive environment, they address various academic and non-academic needs (Smith & Byrne, 2016).

The infrastructure of educational institutions, including classrooms, laboratories, and modern facilities, significantly impacts the quality of education provided. State-of-the-art buildings and facilities support academic and extracurricular activities, creating an optimal environment for teaching and learning (O'Flaherty & Phillips, 2015). Such infrastructure not only enhances functionality but also contributes to students' overall academic satisfaction (An et al., 2023).

Main course books and learning materials, comprising primary textbooks and resources, are essential for effective course delivery. These materials provide students with foundational knowledge and support independent study (Makhene, 2022). By offering a robust repository of academic resources, institutions equip learners with the tools required to excel in their studies.

2.2. *Factors Influencing Student Satisfaction in Higher Education*

The empirical review examines previous studies and research findings related to student satisfaction and service quality in higher education institutions, focusing on the factors that shape students' experiences. The previous studies highlight several key factors that influence student satisfaction, including quality assurance, curriculum, teaching materials and instructional strategies, information services and student support staff, infrastructure, and main course books and learning materials.

Accreditation by recognized bodies such as the Accreditation Committee of Cambodia plays a critical role in ensuring educational quality. Empirical studies show that institutions with ac-credited programs often achieve higher student satisfaction and better employment outcomes for graduates compared to non-accredited institutions (Pandita & Kiran, 2023). Such accreditation not only aligns with national education standards but also enhances institutional credibility in the global academic arena.

The curriculum forms the backbone of any academic institution, shaping students' learning experiences and future career prospects. Research highlights that internationally aligned curricula significantly improve students' employability and global competitiveness (Oxley & McGeown, 2023). Basson's study emphasizes the importance of aligning curricula with international standards to enhance students' employability and global competitiveness.

Teaching materials and strategies also profoundly impact the quality of education. Empirical evidence suggests that interactive and technology-enhanced teaching methodologies lead to improved student engagement and academic performance (Gao, 2022). Institutions that prioritize innovative teaching practices often see higher retention rates and better graduate success.

The role of staff in providing support services is crucial to creating a positive learning environment. Research underscores the importance of approachable, friendly, and responsible staff in improving student satisfaction and institutional reputation. For instance, a study by Wong and Chapman (2022) highlighted that supportive student services significantly correlate with higher student retention and academic achievement.

Buildings and facilities, including modern classrooms, laboratories, and other infrastructure, are essential for supporting academic activities. Empirical studies confirm that well-maintained and resource-rich facilities contribute to improved learning outcomes and higher levels of student satisfaction (Harefa et al., 2023). Furthermore, access to modern educational facilities is often seen as a marker of institutional quality (Tabassum et al., 2023).

Lastly, the availability of high-quality course books and learning materials significantly enhances the delivery of academic programs. Studies demonstrate that access to relevant and up-to-date materials directly impacts students' academic success and knowledge retention (Römhild & Holleder, 2023).

3. Materials and Methods

3.1. *Research Design*

This study adopts a quantitative research design, utilizing descriptive statistics to examine and analyze the key factors influencing student satisfaction with the quality of services offered at higher education institutions. Descriptive statistics are employed to summarize the data on student satisfaction levels and their perceptions of service quality, facilitating the identification of patterns and trends. A survey-based methodology, a widely used quantitative approach for gathering data on attitudes, opinions, and satisfaction, is implemented. The structured questionnaire enables the collection of quantifiable data that can be analyzed statistically.

3.2. *Data*

The present study uses primary data collected from first-year students at Build Bright University, Siem Reap Campus. A total of 438 students were selected from 32 classes in the Foundation Year program for the study. To ensure validity, a clear and appropriate sampling method was applied. The study included all 32 classes from the academic year 2021-2022, comprising 1,230 students across three enrollment stages. Ethical approval for the study was obtained from the university's research ethics committee. Participation was voluntary, and informed consent was obtained from all participants, ensuring they understood the purpose of the study and their right to confidentiality and anonymity. Students were assured that their participation would not affect their academic standing. Data was securely stored and only used for research purposes, in compliance with ethical research standards. The data reflects the level of student satisfaction, measured on a scale from 1 to 5, where 1 indicates "very dissatisfied," 2 indicates "dissatisfied," 3 indicates "neutral," 4 indicates "satisfied," and 5 indicates "very satisfied."

Data collection was conducted using a structured questionnaire created with Microsoft Forms and distributed to students in Promotion 20. The sample size was calculated using Taro Yamane's formula (Taro Yamane, 1967). A sample random sampling method was employed to select the final sample of 438 students, ensuring a robust and unbiased selection process. Taro Yamane's Formula for Sample Size Calculation:

$$n = \frac{N}{1 + N(e^2)} \quad (1)$$

In this formula, n represents the sample size to be calculated, N denotes the total population size, which in this case is 1,230 students, and e refers to the margin of error or the level of precision desired for the sample estimate. Typically, a margin of error of 0.05 is used, which corresponds to a 95% confidence level. By using these values in the formula, the sample size can be determined to ensure that the sample accurately represents the population while maintaining a manageable level of error.

3.3. Statistical Techniques

The first statistical technique employed in this study is Descriptive Statistics, which provides a comprehensive summary of the key characteristics of the data collected from first-year students regarding their satisfaction levels and perceptions of service quality. This includes measures of central tendency – such as the mean, median, and mode – to determine average satisfaction levels across various factors. Additionally, measures of dispersion – such as the standard deviation and range – are utilized to assess the variability in satisfaction scores and the extent of differences in students' responses. The formulas for these calculations are as follows:

The mean is calculated by summing all the values in the dataset and dividing by the number of observations:

$$\bar{x} = \frac{\sum_{i=1}^n x_i}{n} \quad (2)$$

Where x_i represents each individual data point, and n is the total number of observations.

The standard deviation measures the average deviation of each data point from the mean:

$$SD = \sqrt{\frac{\sum_{i=1}^n (x_i - \bar{x})^2}{n-1}} \quad (3)$$

Where x_i is each data point, \bar{x} is the mean of the dataset, and n is the number of data points.

Together, these techniques provide valuable insights into student satisfaction and their perceptions of service quality.

Another critical statistical technique applied in this study is Reliability Analysis, which tests the consistency of the survey instrument. This ensures that the questionnaire items reliably measure the factors related to service quality and student satisfaction. The primary method used for this analysis is Cronbach's Alpha, a statistic that evaluates the internal consistency of survey items. A Cronbach's Alpha value above 0.7 is generally considered acceptable, indicating that the survey instrument is reliable and that the items within each factor consistently measure the intended construct (Hayes & Coutts, 2020). The formula for calculating Cronbach's Alpha is:

$$\alpha = \frac{N}{N-1} \left(1 - \frac{\sum_{i=1}^N \sigma_i^2}{\sigma_T^2} \right) \quad (4)$$

Where N represents the number of items in the scale, σ_i^2 is the variance of the i-th item, and σ_T^2 is the variance of the total score, which is the variance of the sum of all items.

To further ensure the validity of the constructs, Exploratory Factor Analysis (EFA) is

employed. The key formula for EFA involves the factor model, which is represented as:

$$X = \Lambda F + \epsilon \quad (5)$$

Where X is the vector of observed variables, which is represented as a matrix of size $n \times p$, where n denotes the number of observations and p represents the number of observed variables. Λ is the matrix of factor loadings, which is of size $p \times k$, where k is the number of factors being extracted. F is the vector of common factors, also known as latent variables, and is of size $k \times 1$. Finally, ϵ is the vector of unique variances or errors, which is of size $n \times 1$, representing the residuals or variances that cannot be explained by the common factors.

To facilitate data processing in the STATA system, abbreviated variables are employed. Accreditation refers to the accreditation granted by the Accreditation Committee of Cambodia, ensuring the institution meets recognized standards for quality education. Curriculum represents the academic framework that aligns with national higher education and postgraduate standards, offering an international scope to enhance students' employment prospects. Blended Learning refers to an instructional approach combining in-class and e-learning methods, which was especially important during the COVID-19 pandemic for offering flexible learning options. Teacher Resources and Methodology denote the teaching materials and instructional strategies used to improve the learning experience. Professional Staff refers to staff members responsible for providing information services and assisting students with a focus on gentleness, friendliness, and high levels of responsibility. Buildings and Facilities encompass the institution's physical infrastructure, including classrooms, laboratories, and modern facilities that support academic activities. Fees refer to the charges applied for various educational services and programs. English Program is designed to improve students' language skills, communication abilities, and meet the job market's demands. Main Course Books and Learning Materials include the primary textbooks and resources used for course delivery. Finally, Resolution of Students' Problems refers to the institution's approach to resolving student issues in a manner that is both friendly and responsible.

4. Results

This section examines the validity and reliability of the questionnaire used in this study, as well as the study's findings. Construct validity is evaluated using several methods, including the correlation matrix of questionnaire items, the Kaiser-Meyer-Olkin (KMO) test, and exploratory factor analysis. The reliability and internal consistency of the factors identified through the factor analysis are assessed using Cronbach's alpha. Additionally, descriptive statistical analysis is conducted to summarize the data, thereby presenting the results of critically investigating the factors influencing student satisfaction with the quality of services provided by Build Bright University, Siem Reap Campus.

4.1. Construct Validity Assessment Using Factor Analysis

To enhance the validity of a questionnaire in this study, construct validity is assessed through factor analysis. This method helps determine whether the items in the questionnaire are appropriately aligned with the intended underlying construct, ensuring that the questionnaire accurately measures what it is designed to evaluate. To conduct factor analysis, the process begins with examining the correlation matrix of the questionnaire items to assess the relationships between them. The Kaiser-Meyer-Olkin (KMO) test is then used to evaluate the suitability of the data for factor analysis, with a value close to 1 indicating that the data is appropriate for this method. The principal factor extraction method is employed to identify the underlying factors, followed by an examination of the rotated factor loadings (pattern matrix), which reveals the strength and direction of relationships between items and factors. Finally, the unique variances and factor rotation matrix are analyzed to improve the interpretability of the factors and refine the model, ensuring that the items are validly aligned with the intended constructs.

4.1.1. Correlation Matrix of Questionnaire Items

To assess whether factor analysis is appropriate for this study, it is important to check the correlations between the items. Items with moderate to strong correlations, greater than 0.4, suggest that factor analysis could be a suitable method (Gu et al., 2016).

Table 1. Correlation matrix of questionnaire items.

	Accre.	Curri.	Blen.Lear	Tea.Re&Method.	Prof.St.	Build&Fac	Fees	Eng.Pr.	Mai.Cou	Resolution.
Accre.	1.0000									
Curri.	0.7020	1.0000								
Blen.Lear	0.5730	0.6256	1.0000							
Tea.Re&M ethod.	0.6920	0.6719	0.5492	1.0000						
Prof.St.	0.5958	0.6621	0.5856	0.6371	1.0000					
Build&Fac	0.5955	0.5886	0.6004	0.5910	0.6042	1.0000				
Fees	0.5035	0.5513	0.5592	0.5748	0.5463	0.5580	1.0000			
Eng.Pr.	0.5871	0.6227	0.5393	0.5472	0.5945	0.5909	0.5437	1.0000		
Mai.Cou	0.6177	0.6193	0.5875	0.6073	0.5868	0.6555	0.6277	0.6436	1.0000	
Resolution	0.6192	0.6308	0.5181	0.5987	0.6998	0.5339	0.5657	0.6075	0.5824	1.0000

Note: The abbreviation of Accre. = Accreditation, Curri. = Curriculum, Blen.Lear. = Blended Learning, Tea.Re&Method. = Teacher Resources and Methodology, Prof.St. = Professional Staff, Build&Fac. = Buildings and Facilities, Fees = Fees, Eng.Pr. = English Program, Mai.Cou. = Main Course Books and Learning Materials, and Resolution. = Resolution of Students' Problems.

Based on the results presented in Table 1, the correlation matrix reveals moderate to strong positive correlations between the questionnaire items. Most variables exhibit significant correlations, with many values exceeding 0.50, indicating meaningful relationships between the items. Curriculum (aligned with national higher education and postgraduate standards, designed to be international in scope, providing students with enhanced employment opportunities) shows a strong correlation with Accreditation (granted by the Accreditation Committee of Cambodia) at 0.7020, Teacher resources and methodology (resources and strategies used to improve the learning experience) at 0.6719, and Professional staff (staff providing information services and assisting students with gentleness, friendliness, and a high level of responsibility) at 0.6621.

Similarly, Blended learning (combining in-class and e-learning methods, particularly during the COVID-19 pandemic) demonstrates strong correlations with Curriculum, Teacher resources and methodology, and other variables, further indicating interconnectedness among the factors. Overall, the results suggest that the questionnaire items are highly interrelated, with most variables showing moderate to strong correlations, implying the presence of common underlying dimensions. This strong inter-correlation supports the suitability of the data for further analysis, such as factor analysis, to identify key latent factors.

4.1.2. Kaiser-Meyer-Olkin (KMO) Test

The KMO (Kaiser-Meyer-Olkin) test evaluates the sampling adequacy for factor analysis by measuring the proportion of variance among the variables that may be common variance. It assesses whether the correlations between the variables are sufficiently strong to justify performing factor analysis in this study. A KMO value closer to 1 indicates that the data is highly suitable for factor analysis, meaning the variables are well correlated with each other. In contrast, a value closer to 0 suggests weak correlations among the variables, which may make factor analysis inappropriate. The KMO test helps determine if the data meets the necessary criteria for extracting meaningful factors through factor analysis.

Table 2. Kaiser-Meyer-Olkin (KMO) Test.

Variable	kmo
Accreditation	0.9386
Curriculum	0.9516
Blended Learning	0.9597
Teacher Resources and Methodology	0.9485
Professional Staff	0.9393



Buildings and Facilities	0.9564
Fees	0.9506
English Program	0.9617
Main Course Books and Learning Materials	0.9504
Resolution of Students' Problems	0.9379
Overall	0.9492

Based on the results presented in Table 2, the Kaiser-Meyer-Olkin (KMO) test confirms that the data is highly suitable for factor analysis. The KMO values for all individual variables are well above the threshold of 0.90, ranging from 0.9379 for Resolution of Students' Problems to 0.9617 for the English Program, both falling into the excellent category. This suggests that each variable is strongly correlated with the others and is highly appropriate for factor analysis. The overall KMO value of 0.9492 further reinforces this conclusion, indicating that the dataset as a whole is very suitable for factor analysis. These results demonstrate that the data is adequate for extracting meaningful factors, providing a solid foundation for proceeding with the analysis.

4.1.3. Exploratory Factor Analysis

To enhance the validity of the questionnaire in this research, exploratory factor analysis (EFA) was conducted. EFA is a statistical technique used to identify the underlying structure of data and ensure that the questionnaire items align with the theoretical constructs they are intended to measure (Williams et al., 2010). The clustering of items, as expected, indicating good construct validity, can be assessed through the analysis of factor loadings. Items that do not load strongly on their intended factors may be revised or removed to improve the questionnaire's overall validity.

Table 3. Factor analysis/correlation (Method: principal factors).

Factor	Variance	Difference	Proportion	Cumulative
Factor1	5.97465	5.81543	1.0170	1.0170
Factor2	0.15922	0.02099	0.0271	1.0441
Factor3	0.13822	0.10482	0.0235	1.0676
Factor4	0.03340	0.00493	0.0057	1.0733
Factor5	0.02847		0.0048	1.0781
Number of obs	438			
Retained factors	5			
Number of params	40			
LR test: independent vs. saturated	Prob>chi2	= 0.0000		

The results from Table 3, which presents the factor analysis using the principal factors method, reveal that Factor1 accounts for the largest variance of 5.97465, explaining the majority of the variability in the dataset. The variance explained by subsequent factors is much smaller, with Factor2 explaining 0.15922, Factor3 0.13822, and the remaining factors explaining even less. The Difference column shows that the largest difference in variance occurs between Factor1 and Factor2 (5.81543), highlighting the dominance of Factor1 in explaining the data. The Proportion column indicates that Factor1 explains 1.0170 (or 101.7%) of the total variance, with the other factors contributing significantly less, especially Factor2 which accounts for only 0.0271 (or 2.71%). The Cumulative variance, which sums the explained variances, shows that after Factor1, the cumulative variance reaches 1.0170, and increases slowly thereafter, with the cumulative variance after Factor5 being 1.0781, suggesting that the additional factors contribute very little to the total variance. The analysis is based on 438 observations, and 5 factors were retained, indicating that these factors were sufficient to explain the data. The LR test results (Prob > chi2 = 0.0000) suggest that the factor model is a

good fit for the data, as the null hypothesis of the independent model fitting the data as well as the saturated model is rejected at a highly significant level. Overall, the factor analysis indicates that while the first factor explains most of the variance, the remaining factors contribute minimally, and the model fits the data well.

Table 4. Rotated factor loadings (pattern matrix) and unique variances.

Variable	Factor1	Factor2	Factor3	Factor4	Factor5	Uniqueness
Accreditation	0.7943	-0.2051	0.0482	-0.0371	-0.0310	0.3224
Curriculum	0.8201	-0.1470	-0.0081	0.0246	0.0228	0.3046
Blended Learning	0.7324	0.0541	0.1009	0.1039	0.0494	0.4373
Teacher Resources and Methodology	0.7888	-0.1307	0.0149	0.0210	-0.1138	0.3470
Professional Staff	0.7944	-0.0015	-0.1918	0.0626	0.0242	0.3277
Buildings and Facilities	0.7603	0.1021	0.1307	0.0232	0.0367	0.3926
Fees	0.7154	0.1883	0.0358	0.0135	-0.0587	0.4479
English Program	0.7540	0.0853	-0.0148	-0.0980	0.0786	0.4082
Main Course Books and Learning Materials	0.7927	0.1497	0.1231	-0.0680	0.0014	0.3295
Resolution of Students' Problems	0.7712	0.0005	-0.2344	-0.0361	-0.0058	0.3489

The results presented in Table 4 provide insights into the underlying structure of the data through the rotated factor loadings (pattern matrix) and unique variances. Factor 1 is the most influential, with strong positive loadings for several key variables, including Accreditation (0.7943), Curriculum (0.8201), Teacher Resources and Methodology (0.7888), Professional Staff (0.7944), Buildings and Facilities (0.7603), and Main Course Books and Learning Materials (0.7927). This suggests that Factor 1 represents a latent construct related to the overall quality of services at educational universities, encompassing aspects such as accreditation, curriculum design, resources, and infrastructure.

In contrast, Factor 2 shows weaker and negative loadings for variables such as Accreditation (-0.2051), Curriculum (-0.1470), and Teacher Resources and Methodology (-0.1307), indicating an inverse relationship with the variables in Factor 1. This factor may represent negative or contrasting aspects of the institution. Factor 3 has weak loadings, particularly for Professional Staff (-0.1918) and Resolution of Students' Problems (-0.2344), indicating that it does not strongly represent a meaningful construct in the data. Factor 4 shows very weak loadings across most variables, particularly for Blended Learning (0.1039), suggesting that it does not play a significant role in the factor structure. Similarly, Factor 5 exhibits minimal loadings, indicating it contributes little to explaining the relationships between the variables. The uniqueness values reveal that some variables, such as Fees (0.4479), have a significant portion of their variance unexplained by the factors, suggesting they represent independent constructs.

In contrast, variables like Curriculum (0.3046) and Main Course Books and Learning Materials (0.3295) have lower uniqueness values, indicating their variance is largely accounted for by the factors. Overall, Factor 1 stands out as the most significant in explaining the interrelationships among the variables, while the other factors contribute less. Some variables exhibit higher uniqueness, indicating they are less dependent on the factor model. These results demonstrate that the questionnaire is valid, particularly for measuring the construct represented by Factor 1. This validity ensures that the questionnaire can be used with confidence to assess the overall quality of services at educational universities.

Table 5. Factor rotation matrix.

	Factor1	Factor2	Factor3	Factor4	Factor5
Factor1	1.0000	0.0082	-0.0007	0.0008	0.0003
Factor2	-0.0063	0.8146	0.5695	-0.0314	0.1055
Factor3	-0.0051	0.5541	-0.8199	-0.0668	0.1275
Factor4	-0.0014	0.0702	-0.0391	0.9962	-0.0346
Factor5	-0.0010	0.1564	-0.0438	-0.0469	-0.9856

The results presented in Table 5, the factor rotation matrix, offer insights into the relationships between the five factors after rotation, which aims to enhance interpretability. Factor 1 shows minimal correlation with the other factors, with very low values across all variables (Factor 2 = 0.0082, Factor 3 = -0.0007, Factor 4 = 0.0008, and Factor 5 = 0.0003), suggesting that Factor 1 is relatively independent and distinct. Factor 2, on the other hand, has a strong correlation with itself (0.8146) and a moderate correlation with Factor 3 (0.5695), indicating some overlap but primarily reflecting its own construct. Factor 3 demonstrates a strong negative correlation with itself (-0.8199), highlighting its independence, although it also shares some variance with Factor 2 (0.5541). Factor 4 is highly correlated with itself (0.9962), indicating that it is a well-defined factor, distinct from the others with very weak correlations across the other factors. Finally, Factor 5 is strongly correlated with itself (-0.9856), reinforcing its distinct nature, with very weak correlations with the other factors (Factor 2 = 0.1564, Factor 3 = -0.0438, Factor 4 = -0.0469). In conclusion, the factor rotation matrix demonstrates that the factors are largely independent, with some overlap between Factor 2 and Factor 3, and highlights the unique variance explained by each factor.

4.2. Reliability Testing with Cronbach's Alpha

To assess the reliability and internal consistency of the factors derived from the factor analysis, this study applies Cronbach's Alpha. This statistical test measures the degree to which the items within each factor are related, ensuring that they consistently assess the same underlying construct. A higher Cronbach's Alpha value (typically above 0.70) indicates a strong correlation among the items within each factor, thus confirming the reliability of the questionnaire and its ability to produce stable, dependable results across different samples. By performing Cronbach's Alpha testing, we can verify that the variables grouped within each factor are coherent and collectively measure the intended aspects of service quality at educational universities, as identified in the factor analysis.

Table 6. Evaluates the internal consistency and reliability of the survey items through Cronbach's Alpha testing.

Factor	Average interitem covariance	Number of items in the scale	Scale reliability coefficient
Factor1	0.4977	6	0.9100

The results of the Cronbach's Alpha analysis in Table 6 demonstrate excellent internal consistency and reliability for the scale. Factor 1, which includes six key survey items, shows an average inter-item covariance of 0.4977, indicating that the items are positively correlated and collectively measure a similar underlying construct. The scale reliability coefficient (Cronbach's Alpha) for Factor 1 is 0.9100, significantly exceeding the commonly accepted threshold of 0.7 for good reliability. This high value suggests that the items within Factor 1 are strongly interrelated and consistently capture the intended construct, reflecting a robust internal consistency. Therefore, Factor 1 can be considered a reliable scale, and no major modifications to the items are necessary. However, further analysis of individual item performance may be conducted to ensure each item contributes optimally to the overall scale.

4.3. Descriptive Statistical Analysis

For the Descriptive Statistical Analysis, the focus is on the six key variables that exhibit strong loadings on Factor 1, which is the most influential factor in explaining the interrelationships among the data. These variables are: Accreditation, Curriculum, Teacher Resources and Methodology, Professional Staff, Buildings and Facilities, and Main Course Books and Learning Materials. The strong positive loadings for these variables indicate their significance in capturing the construct represented by Factor 1, which is central to the overall service quality at educational universities. Given their prominence, these six variables provide a solid foundation for assessing educational quality and ensuring the questionnaire's validity. By concentrating on these variables in the analysis, the study can more accurately evaluate the key factors influencing service quality at educational institutions.

The following analysis presents the descriptive statistics for various aspects of student satisfaction, measured on a 1 to 5 scale, where 1 represents “very dissatisfied,” 2 denotes “dissatisfied,” 3 indicates “neutral,” 4 signifies “satisfied,” and 5 indicates “very satisfied.” The results include the mean, standard deviation, mode, median, and range for each variable, providing insights into general trends and variations in student satisfaction across these key educational aspects.

Table 7. Descriptive statistics.

Variable	Obs	Mean	Std. Dev.	Mode	Median	Range
Accreditation	438	4.3311	0.8544	5	5	4
Curriculum	438	4.2192	0.9088	5	4	4
Teacher Resources and Methodology	438	4.4247	0.9189	5	5	4
Professional Staff	438	4.3037	0.8854	5	5	4
Buildings and Facilities	438	4.2968	0.9219	5	5	4
Main Course Books and Learning Materials	438	4.1644	0.8505	4	4	4

Based on the descriptive statistics presented in Table 7, the data provides a detailed analysis of student satisfaction across various aspects of their educational experience at the university. Accreditation has a mean score of 4.33, indicating that most students are satisfied with the university’s accreditation status. The standard deviation of 0.85 suggests moderate variation in responses, with the mode being 5 (“very satisfied”), indicating that this is the most common response. The median of 5 further supports the high level of satisfaction with accreditation, while the range of 4 reveals that responses span from “satisfied” to “very satisfied,” with only a small portion of students expressing lower levels of satisfaction. This suggests that students are satisfied with the official recognition granted by the Accreditation Committee of Cambodia, ensuring that the university meets established and recognized standards for quality education. This process is essential for validating the university’s commitment to providing education that meets both national and international standards.

Curriculum has a mean of 4.22, reflecting general satisfaction, although slightly lower than the scores for accreditation and teacher resources. The standard deviation of 0.91 indicates moderate variability in responses, and the mode of 5 (“very satisfied”) suggests that many students are pleased with the curriculum. However, the median of 4 (“satisfied”) shows that more students are content but not extremely satisfied, indicating some variability in perceptions. The range of 4 again shows that responses cover a spectrum from “satisfied” to “very satisfied.” This indicates that students are satisfied with the structured academic framework of the university, aligned with national higher education and postgraduate standards. It is designed to provide students with an international scope of knowledge, preparing them for successful careers by enhancing their employability in a competitive global market.

Teacher Resources and Methodology has the highest mean score of 4.42, indicating a high level of satisfaction. The standard deviation of 0.92 suggests some variation, but the mode of 5 and median of 5 indicate that most students are highly satisfied with the teaching resources and methodologies. The range of 4 shows that responses range from “satisfied” to “very satisfied,” with the majority of students expressing the highest level of satisfaction. This suggests that students are satisfied with the materials and instructional methods employed by the university to support and enhance the learning experience. This includes textbooks, multimedia resources, and various teaching techniques aimed at improving student engagement and comprehension.

Professional Staff has a mean score of 4.30, indicating strong satisfaction, though slightly lower than that for teaching resources and methodology. The standard deviation of 0.89 indicates moderate variability, while the mode of 5 and median of 5 suggest that the majority of students are very satisfied with the professional staff. The range of 4 again shows a broad spectrum of responses, from “satisfied” to “very satisfied.” This indicates that students are satisfied with the individuals who are responsible for supporting them, offering essential information services, and providing assistance with academic and non-academic matters. The

professional staff's focus on being approachable, friendly, and responsible contributes to creating a supportive and welcoming environment for students.

Buildings and Facilities also have a mean score of 4.30, suggesting general satisfaction, although it ranks slightly lower than teacher resources and accreditation. The standard deviation of 0.92 again indicates moderate variability in responses, with the mode of 5 and median of 5 showing that most students are highly satisfied with the buildings and facilities. The range of 4 indicates some variation in responses, but overall, students seem pleased with the physical infrastructure. This indicates that students are satisfied with the physical infrastructure of the university, including classrooms, laboratories, and other facilities that enable academic activities. The availability and quality of these resources are crucial in supporting effective learning environments.

Finally, Main Course Books and Learning Materials has the lowest mean of 4.16, suggesting that while students are generally satisfied, they are less satisfied with the course books and learning materials compared to other aspects. The standard deviation of 0.85 suggests relatively consistent responses, but the mode of 4 ("satisfied") and the median of 4 indicate that fewer students are "very satisfied" with the learning materials. The range of 4 shows that responses span from "satisfied" to "very satisfied." This suggests that students are satisfied with the core textbooks and supplementary resources used in the delivery of academic courses. These materials form the foundation of the learning process and contribute significantly to students' understanding of the course content.

Overall, while most students express high satisfaction with various aspects of their educational experience, areas like Main Course Books and Learning Materials exhibit slightly lower satisfaction. The moderate variability in responses across all variables suggests there are differences in how students perceive certain aspects of their education.

5. Discussion

The findings provide valuable insights into student satisfaction across various dimensions of their educational experience at Build Bright University, Siem Reap Campus. Overall, the results reflect a strong level of satisfaction among students, particularly in areas such as Accreditation, Teacher Resources and Methodology, Professional Staff, and Buildings and Facilities. However, some variability in responses suggests areas that may benefit from further improvement, particularly in the realm of Main Course Books and Learning Materials.

Accreditation received a high satisfaction rating with a mean score of 4.33, indicating that most students are content with the university's accreditation status. The results suggest that students value the university's adherence to recognized educational standards, which not only fosters trust but also ensures that their degrees are recognized internationally. This finding is consistent with existing literature, which emphasizes the importance of accreditation in promoting quality education and improving student satisfaction (Kayyali, 2023; Pandita & Kiran, 2023). The positive student feedback highlights the role of accreditation in signaling institutional accountability and continuous quality improvement (West & Moore, 2015).

The curriculum received a mean score of 4.22, indicating general satisfaction, though slightly lower than that for accreditation and teacher resources. This suggests that while students are largely content with the curriculum, there is room for improvement. The moderate variation in responses, indicated by the standard deviation of 0.91, suggests that some students may feel that the curriculum could be more aligned with their specific needs or expectations. The curriculum's design to meet both national and international standards, as well as its focus on enhancing employability, is in line with findings from Schwartz and Diliberti (2021), Bermúdez-Edo, Hurtado-Torres, and Ortiz-de-Mandojana (2017), who emphasize the importance of global perspectives and industry relevance in curriculum design.

Teacher Resources and Methodology received the highest mean score of 4.42, reflecting strong satisfaction with the instructional methods and materials. The high level of satisfaction suggests that students appreciate the resources provided, such as textbooks, multimedia tools, and the innovative teaching methods employed by the university. This is supported by existing literature, with Arif, Afnan, Usmiyatun, and Lestari (2023) and Febria (2021) emphasizing the importance of effective teaching resources and dynamic pedagogical strategies in enhancing student engagement and learning outcomes. The use of technology-enhanced teaching methods, noted by Gao (2022), aligns well with the positive feedback from students in this area.

Professional Staff also received a high mean score of 4.30, indicating that students are

satisfied with the support provided by the university's staff. This includes academic advisors, administrative staff, and other personnel who offer essential academic and non-academic support. The friendly and approachable nature of the staff contributes to an inclusive and supportive environment, as emphasized by Smith and Byrne (2016) and Wong and Chapman (2022). The findings reinforce the notion that professional staff play a crucial role in fostering student satisfaction and retention by offering timely assistance and creating a welcoming atmosphere.

Regarding Buildings and Facilities, students reported a mean score of 4.30, suggesting general satisfaction with the university's physical infrastructure. Modern and well-maintained facilities are vital in supporting both academic and extracurricular activities, and the positive feedback from students highlights the importance of investing in infrastructure. O'Flaherty and Phillips (2015) and An, Ma, and Wu (2023) support this view, noting that well-designed and state-of-the-art facilities contribute significantly to student satisfaction and overall academic success. While the satisfaction with infrastructure is high, there may be opportunities to further enhance these facilities to meet evolving educational needs.

The area with the lowest satisfaction was Main Course Books and Learning Materials, which received a mean score of 4.16. While students are generally satisfied with the course materials, the lower score suggests that some students feel that the textbooks and learning resources could be improved or updated. The relatively high standard deviation (0.85) indicates variability in responses, implying that while some students may be very satisfied, others may feel that the materials do not fully meet their expectations. Makhene (2022) highlights the importance of textbooks in providing foundational knowledge, and Römheld and Holleder (2023) suggest that access to up-to-date materials is critical to student success. Therefore, addressing this area by providing more current and diverse learning resources may help improve overall satisfaction in the future.

6. Conclusions and Implications

The research findings reveal that students express a high level of satisfaction across various aspects of Build Bright University, Siem Reap Campus's quality services, which are integral to the overall academic experience. Accreditation, granted by the Accreditation Committee of Cambodia, is a significant factor, with a mean score of 4.33, indicating that students are confident in the university's adherence to recognized standards for quality education. The curriculum, with a mean score of 4.22, demonstrates a strong alignment with national higher education and postgraduate standards, offering an international scope that enhances students' employment prospects. Teacher Resources and Methodology (mean score of 4.42) reflect effective teaching materials and instructional strategies, which contribute to a positive learning experience. The Professional Staff (mean score of 4.30) is appreciated for its approachability, friendliness, and sense of responsibility, creating a supportive environment for students. The university's Buildings and Facilities (mean score of 4.30) provide the necessary infrastructure to facilitate academic activities, though some variability in responses suggests areas for potential improvement. Main Course Books and Learning Materials (mean score of 4.16) received slightly lower satisfaction levels, highlighting the need for continual review and enhancement of core textbooks and supplementary resources. These results emphasize the importance of ongoing improvements across all service areas at Build Bright University, Siem Reap Campus, ensuring alignment with global standards, enhancing student satisfaction, and supporting the university's mission to provide a high-quality educational experience.

To enhance student satisfaction at Build Bright University, Siem Reap Campus, several recommendations are proposed. First, the university should focus on improving course materials and learning resources, as students expressed slightly lower satisfaction with the main course books and learning materials. Regular updates and reviews of textbooks, supplementary resources, and digital learning tools will ensure that the materials remain relevant and engaging. Additionally, although the university's buildings and facilities received a satisfactory rating, there is variability in responses that suggests the need for further investment in upgrading classrooms, laboratories, and study spaces. Strengthening professional development programs for faculty and staff will maintain the high standard of teaching, as reflected in the positive satisfaction scores for teacher resources and professional staff. The university should also continue to uphold its strong accreditation status, ensuring alignment with both national and international quality standards. Furthermore, enhancing the adaptability of the curriculum to meet evolving industry demands and incorporating practical

learning experiences, such as internships, will better prepare students for the workforce. Finally, while students are satisfied with the professional staff, improving student support services, including career counseling and academic advising, can contribute to a more personalized academic experience. By addressing these areas, the university can elevate its academic offerings and create a more supportive environment that enhances student satisfaction and success.

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