



## Exploring Student Satisfaction and Retention in Lebanese Private Universities

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### Abstract

This article evaluates student satisfaction antecedents' role in enhancing student retention in Lebanese universities. This descriptive study uses a quantitative methodology built on a deductive approach with a questionnaire as a survey tool. The questionnaire comprised 25 questions and was distributed on campus. Two hundred ninety valid questionnaires constituted the sample for the analysis through a self-administered questionnaire on the university campus of Lebanese universities. This article verified the positive effects on students' satisfaction and retention. The most significant influence on students' retention is the quality of their education ( $R^2 = 0.53$ ;  $P < 0.001$ ). Thus, a one-unit improvement in learning quality could result in a 53% increase in student retention. The statistical significance of the effect and causal links for both variables at the 5% threshold is confirmed by the P-value and the t-test. Student retention is an organizational goal that spreads positive word of mouth. Private universities should translate the conceptual framework into strategies to enhance students' satisfaction and retention rates.

### Keywords

Students, Satisfaction, Retention, University's Staff, Quality of Learning and Education, Campus Life

### INTRODUCTION

The concept of satisfaction, developed mainly in service activities, has been the subject of much research in management sciences (Carter & Yeo, 2016b; Harrell & Reglin, 2018). Analyzing the students' satisfaction (transactional or relational) in studying human behavior has become essential to research. Students' satisfaction is important to study and research because education is a considerable part of everyday life. Compared to job satisfaction, students' satisfaction is highly debated due to its added value to universities, mainly the private sector. Antecedents to students' satisfaction can be assembled in an endless list. However, universities must meet their needs and expectations to satisfy students (Eresia-Eke et al., 2020). Satisfying students' needs is a complex task at the forefront of higher education institutes' management and strategic planning.

Students' satisfaction results from the confrontation between expectations and perceptions for each aspect of academic activities (Bornschlegl & Cashman, 2019). For university management, it is significant to understand students' satisfaction and dissatisfaction sources. It is considered a primary concern since it affects students' retention. Students' satisfaction is achieved when the university meets students' needs and when the service quality is greater than or equal to their expectations. Today's student population demands flexible schedules (Harrell & Reglin, 2018), standardized programs, and good value for money. Students have become customers to conquer, which fuels competition (Swani et al.,

2022; Wong et al., 2021). The quality of education and learning is critical to universities' competitiveness. Students' demand increases with intense competition. Therefore, it seems particularly important to understand students' expectations and perceptions better if universities aim to reach students' satisfaction (Arizzi et al., 2020). Technology lays the foundation for student retention by increasing student-faculty interaction to increase student satisfaction. Satisfaction or dissatisfaction with the university impacts the student's results and competitive advantage (Ryan and Poole, 2019). Dissatisfaction is a cause of stress and increases dropouts (Casanova et al., 2021).

The main problem facing private universities is the increased student dropout rate for numerous reasons (Bernardo et al., 2022). However, this dropout results from an increased level of student dissatisfaction. The upsurge in dissatisfaction is the result of two reasons. First, students, notably the new generation, are lazy. Students hate work and look to finish assignments quickly. Education requires diligent work and self-adjustment. However, students aim to get a degree the easiest way possible (Nordmo et al., 2018).

Second, private universities consider students' clients and prospective consumers (Carter & Yeo, 2016a). These authors observed students as the university's clients simply because students choose the university according to their financial budget (Hardré et al., 2019). Kim (2020) added that students pick the university to register according to its brand name, image, and reputation. Besides, the escalating competition among universities affects students' choice of suitable universities. Private universities must grasp these contemporary facts affecting students' decisions when choosing an educational institute (Nabukeera et al., 2020).

This article treats three questions respectively. First, what are the antecedents of students' satisfaction in enhancing students' retention rates in Lebanese private universities? Second, what is the relationship between student satisfaction and retention in private Lebanese universities? Third, what is the effect of campus life, quality of learning, and relationships with the university's staff on students' retention?

This article aims to examine the role of student satisfaction antecedents in improving retention. It examines the relationship and effects of campus life, quality of learning, and relationships with the university's staff on student retention rates.

The article's originality lies in its theoretical and empirical contributions by synthesizing the theory of commitment and confirmatory expectation theory. According to these theories, student satisfaction is associated with involvement in academic and extracurricular activities. Higher retention results from motivated students being more inclined to participate actively in their education. Students are satisfied when their initial expectations are validated by real-world experience. Applying these theories helps universities better match student expectations with social and academic reality, increasing satisfaction and retention. Practically, this article uses a survey to provide transparent information about students' expectations and opportunities for involvement. It helps universities align student expectations with reality. It highlights universities' need to establish student clubs and other extracurricular activities to enhance satisfaction and retention.

To sum up, student satisfaction is a vital retention indicator, and its theoretical and practical implications can help universities create successful plans that develop the learning environment and support student achievement. The quality of interpersonal relationships and social integration are critical antecedents to satisfaction. University managers could create initiatives to improve students' feeling of community, which will improve integration and higher retention rates.

Following this introduction, this article is constructed as follows. Section 1 introduced the concept and presented the objectives. The second section is devoted to the theoretical context and the literature review. It identifies the link between student satisfaction antecedents and their retention rate. The conceptual framework is illustrated in this section. The third section deals with the methodology adopted, emphasizing the measuring instrument and the research strategy. The results are shown in the fourth part and are discussed in detail in the last section. In the last section, the limits, contributions and avenues of research for future studies are elaborated. A conclusion closes this article with recommendations.

## LITERATURE REVIEW

Education is a crucial driver of economic growth, especially in higher education (Vasileva et al., 2021; Cone & Brøgger, 2020). Singleton-Jackson et al. (2010) Chakraborty et al. (2021) stated that students are viewed as shoppers of advanced education. This transformation results from the constant change in students' mentality according to their generations (Muhsin et al., 2020; Mulyono et al., 2020). Student satisfaction is a vital topic and has received considerable attention in the literature. Elaborating on the satisfaction of private university students is critical for numerous reasons. First, finalizing a bachelor's degree at university is a crucial educational result (Shehzadi et al., 2021). Satisfaction and course accomplishment are identified at the undergraduates' level, although this relationship is perceived as perplexing and bi-directional. Students typically spend 3 to 5 years in their universities to complete a degree. Their overall satisfaction with their university experience is improved when students enjoy this experience. Students' involvement derived from campus activities, classroom time, and the relationship with the university staff are fundamental elements enhancing the university experience (Chandra et al., 2019). Hardré et al. (2019) and Kim (2020) added that building a trustful relationship is crucial in satisfying students. Other than the quality of the academic experience, a key factor of student satisfaction is the relationship between students and administrative staff (registrar, accountant, and admission officers). This relationship is critical since students have to communicate with them. This section elaborates on students' satisfaction and critical antecedents leveraging this aspect. It explains the relationship between student satisfaction and retention.

## Student Satisfaction

Student satisfaction is exclusively significant to university faculty and administrators of universities, including admissions, registration, and student affairs offices. Abd Aziz et al. (2021) defined satisfaction as a temporary feeling and state of mind when assessing an educational ordeal. Student satisfaction is the overall impression of the quality of education services delivered by the university staff (instructors, administrative employees). Student satisfaction is described by Rahman et al. (2020) and Geier (2021) as the student's objective evaluation of their education experiences and expected outcomes. Student satisfaction is shaped by the actual students' experiences on campus. Typically, satisfied students are more likely to continue in their studies and stay at their university and are more likely to succeed academically. When satisfied, students will automatically pass information to others about their university life and experience positively, which can lead the university to attract new students easily. Appraisals of understudy fulfillment are more straightforward and promptly accessible (Chandra et al., 2018).

## Leveraging Aspects of Student Satisfaction

Student satisfaction is constructed on two core aspects. First, the students' feelings of belonging and moral commitment toward their university are emphasized. Second, the quality of education, campus life, and experience provided by the university. Hence, the university's staff tends to be concerned with students' satisfaction by demonstrating a caring and helpful attitude (Latip et al., 2020).

Researchers assessing student satisfaction focus primarily on end-of-course (EOC) evaluations. Universities are customizing their own EOC evaluation form (Grissom et al., 2020). Registered students evaluate the course and learning methods. The assessment of satisfaction with the academic experience is incorporated in this form (Obiosa, 2020). EOC evaluations embrace questions appraising course content, grading criteria, and instructors' plans for classes. At the end of the semester, university surveys focus on academic experience. The quality and accessibility of the library assets, the adequacy of IT support, and the reflection on students' feelings are considered the social parts of campus life (Kim, 2023).

Recent studies proved that EOCs are dependable and significant measures conveying cautious and accurate information on instructors' assessments. Nonetheless, most instructors do not believe in the outcome of these evaluation forms (Dewi et al., 2021). Those instructors view undergraduates' satisfaction forms and revisions as vain dimensions. Student satisfaction can be used as a measure of program quality. For example, Strelan et al. (2020) found that satisfaction with the major is identified by parents' motivation, course offerings, class sizes, and career planning.

## Antecedents of Students' Satisfaction

Several studies have examined students' satisfaction and dimensionality antecedents (Moslehpour et al., 2020). Some genuinely continuous variables emerge from recent studies (Chandra et al. 2018; Rahman et al. 2020; Geier 2021). Five variables are developed, not limited to the education quality and the course content's effectiveness. Third, social aspects and opportunities. Fourth, the facilities and resources of the campus and, finally, instructors' skills and abilities. Universities should simplify those antecedents by extracting two dimensions. The first embraced academic aspects, while the second examined Amenities and services on campus (Kardoyo et al., 2020).

The Student Satisfaction Questionnaire classified six dimensions of university satisfaction: policies and procedures, working conditions, compensation, quality of education, social life, and recognition (González-Ramírez & García-Hernández, 2022; M. H. Temesgen et al., 2021; Y. Temesgen, 2017). However, Osman and Saputra (2019) proposed a five-factor model of university student satisfaction. This model examined the following dimensions: working conditions (relating to the university environment), compensation (cost vs. benefit), quality of education (relating to teacher capability), social life (involvement in social activity), and recognition (social belonging) (Haverila et al., 2021).

Weli (2019) proposed a three-factor theory that further explains Student Satisfaction. This theory is based on the quality of interaction, outcome quality, and physical environment. Dinh et al. (2021) identified instructors' directions and support, personal commitment to learning, and course policies as antecedents to university student satisfaction. Sholikah & Harsono (2021) suggested that the precursors of students' satisfaction stem from four relationship measurements: benefit execution, college execution, connections, and college standing. These measurements are displayed as antecedents to retention (De Guimarães et al., 2019; Nunes et al., 2021). As a measurement, learning progress is displayed as a probable result of students' satisfaction. Dissatisfaction or satisfaction affects students' responses. The latter responses incorporate students' choice to change the university (brand name) and their feedback (Swani et al., 2022; Wong et al., 2021).

Student satisfaction is based on the three significant dimensions of the above studies.

### 1. Quality of learning

The quality of learning is one of the most important factors affecting students' satisfaction in higher education institutes. Students are more satisfied when they receive an excellent education and learning experience (Alqahtani et al., 2021). Instructor preparation programs, coursework, test scores, assignments, participation, and projects) affect students' future achievement positively. In other words, improving the quality of learning leads to an increase in students' satisfaction. However, unsatisfied students spread negative word of mouth, negatively affecting the university's name (Theresiawati et al., 2020). Based on this section, the following hypotheses evolved.

**H1:** the quality of learning has a significant statistical effect on students' satisfaction.

## **2. Involvement in Social Activity (Campus Life)**

Campus life, the involvement in social activity, is an essential factor in marking a student's satisfaction level (Kim, 2021). The university has evolved to involve a social life on its campuses. Students learn, study, and do exams on the university campus. Students feel like they are part of the university's life when participating in university social activities. The number of university events leverages students' happiness and satisfaction (Aliponga, 2016). Kim (2021) and Aliponga (2016) support that enhancing students' campus life increases students' satisfaction. Subsequently, campus life is an essential thing that every university has to work on to improve and always to have a well-studied plan of events and activities that benefit every student (Malkawi et al., 2021). Those results approved the deduction of research hypotheses. Based on this section, the following hypotheses evolved.

**H2:** students' campus life significantly statistically affects students' satisfaction.

## **3. The Relationship Between Staff and Students**

The relationship between students and the staff is the third factor that touches on university satisfaction. Instructors, registrar, admissions officer, director, and student affairs officer are the university's representatives (Millard, 2020). Students' face-to-face contact and communication with these front-line staff are crucial because they play a significant role in the quality of information affecting the major and courses to be selected: their course and principal advice guide student communication with the registrar. Hereafter, refining the relationship with the university staff leads to an increase in student satisfaction. Consequently, a relationship with the university founded on trust and comfortable communication fills the information gap and enhances student satisfaction (Riva et al., 2020). Al Miskry et al. (2021) discovered a positive connection between students' performance appraisals of staff capability and the self-assessment of academic Staff (Eresia-Eke et al., 2020; Borschlegl & Cashman, 2019). The latter influences students' academic performance (Swani et al., 2022).

Moreover, students' opinions in formal appraisals have been observed to be exceptionally valuable. For managerial reasons, students' appraisals can regularly influence an employee's compensation, tenure, and promotion opportunities. Besides, students' assessment of instructors motivates them to enhance their teaching style (Al Miskry et al., 2021). Based on this section, the following hypotheses evolved.

**H3:** the relationship with the university staff has a significant statistical effect on student satisfaction.

## **Student Retention**

Retention is measured as the capacity of higher education institutions to maintain students from registration time until graduation. Tight (2020), Boyd et al. (2022), and Talar & Gozaly (2020) distinguished three extremes related to student retention. These extremes are normal progression and dropouts (Muljana & Luo, 2019). Normal progression, also called stayers or retained students, occurs when a student registers and enrolls each semester until graduation. The progression embraces the staidness in the student to study full-time and graduate on time after finishing the curriculum. Peng & Zhang (2021) suggested that students' satisfaction influences the consistency of their normal progression. A dropout, or leaver, is a student who registers at the university yet leaves before graduating and does not return to proceed. However, a stop-out is a student who returns to continue their studies after a period (Maldonado et al., 2021). Retention as an institutional measure and ingenuity measure for higher education institutes. Student conservation rate can be utilized as an equivalent word for retention.

Hafer et al. (2021) characterized three categories of retention: institutional, framework, and scholastic. First, institutional retention is characterized as a strategy that is generally utilized in organizations. This type of retention estimates the rate of students returning to the same higher education institute or a similar one after a long time. Second, framework retention comprises the following students and not the university in which the student is enlisted. This type of retention implies that students abandon one school but enlist at another and finish their studies there. This retention is viewed in the "framework" of advanced education. Hagedorn found that this strategy for retention is complicated to quantify because following students in their moves is expensive. Third, an educational major is centered on the retention inside a particular major. With this strategy, students starting university with a particular major and change it to another are considered dropouts for this major. The last category of retention is normal among schools in private universities. However, measuring the dropout rate is not considered (Febro 2019). Retention may likewise be measured for each course individually. Measuring retention per course informs school authorities of classes with a high level of student dropout even if the student drops out for another, more accessible course (Romine et al., 2018).

## **The Relationship between Student Satisfaction and Retention**

Schreiner demonstrated that maintaining students' satisfaction measures students' retention. The influence of students' satisfaction on retention is not affected by the class level or the degree (Nadeem et al., 2015). Satisfaction as an essential measure can multiply the capacity to predict students' conservation and retention past anticipated statistics and institutional components. Consequently, Nadeem et al. (2015) verified that students' satisfaction significantly statistically influences students' retention. Student retention is an expanding concern for private universities. High dropout rates are undesirable for a few reasons. Hagedorn has stated that retention affects the individual and their family. Satisfied students

advise families and friends to register at the same university, calling it "my university." Therefore, enhancing student retention cannot be achieved without a commitment to the university (Tegowati et al., 2020).

A current review by Rahman et al. (2020), Geier (2021), and Chandra et al. (2018) recognizes the connections between students' retention, aims, and satisfaction. The review contends that adjustments in consumer loyalty can have essential financial suggestions for the association since lifetime incomes from individual clients rely on the length of their relationship (Riva et al., 2020). Additionally, the dollar sum is spent crosswise over charging cycles. Boyd et al. (2022) verified student retention as social and moral. Up-keeping and motivating students to continue their studies gives individuals a chance in life and can improve it dramatically (Braun & Zolfagharian, 2016). Therefore, student retention improves their financial issues. Besides, retaining students improves the university's financial margins.

Retention also matters nationally. When the population's education level is higher, the nation's levels of productivity and innovation are more significant and better. Kundu (2022) and Forid et al. (2022) verified a hypothesis connecting students' satisfaction to retention. Regardless of popular opinions, a positive connection exists between these two components. DeShields et al. (2005) and Garratt-Reed et al. (2016) verified that students' demographics also influence retention. Demographics incorporated students' sex and decisions when choosing a university. For students in their third year, it incorporated their GPA.

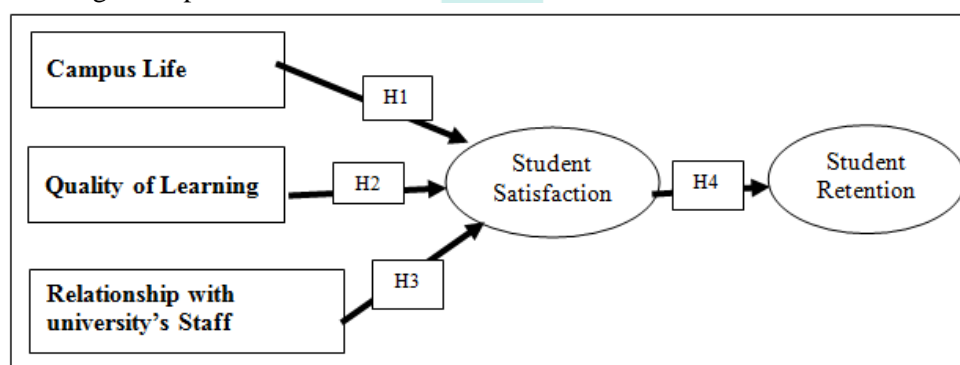
The following hypotheses have evolved from the above section. Based on this section, the following hypotheses evolved:

**H4:** Campus life, the quality of learning, and the relationship with the university's staff as antecedents to students' satisfaction significantly and statistically affect students' retention.

### Conceptual Framework

In summary of the literature review, students' satisfaction and retention were defined. The literature review distinguished several antecedents and factors affecting student satisfaction in universities. These antecedents include campus life (activities, events, and quality of learning (preparation programs, coursework, test scores, assignments, participation, and projects) and relationship with the university's staff (instructors, registrar, admissions officer, student affairs officer). Gholami et al. (2020), Boyd et al. (2022) and Talar & Gozaly (2020) mentioned the relationship between those variables and validated their significance. Therefore, it is verified that students' satisfaction based on a list of antecedents influences students' retention. Hence, students' satisfaction significantly statistically influences students' retention (González-Ramírez & García-Hernández, 2022; M. H. Temesgen et al., 2021; Y. Temesgen, 2017).

The quality of learning is the primary factor enhancing students' satisfaction. The quality of education influences students' choice to continue their studies. Consequently, the relationship and the interaction between the university staff and students have a significant role in satisfying students. Therefore, it is verified that the antecedents of students' satisfaction positively influence students' retention in private universities. Besides, the literature review supported the idea that students' campus life as an antecedent of students' satisfaction also influences retention at private universities. Consequently, the following conceptual framework is constructed.



**Fig. 1** Conceptual Framework (Swani et al., 2022; Wong et al., 2021; Shehzadi et al., 2021)

### RESEARCH METHODOLOGY

This descriptive research embraces a quantitative method based on a quantitative method with a deductive approach. The quantitative strategies underline the target numerical investigation of information gathered through the questionnaire as an international survey tool. This quantitative research concentrates on verifying the role of students' satisfaction antecedents in increasing retention and studying the hypotheses. The deductive approach refers to the arrangement of unique ideas that prompt solid experience through experimental testing. It is contended that positivist philosophy is more one-sided toward deductive.

The questionnaire was constructed from past studies. Private Lebanese universities form the research population. Hence, primary data was gathered through a self-administered questionnaire on the university campus. Two hundred ninety valid questionnaires constituted the sample for the analysis. Convenience sampling was used to determine the sample. This type of sampling was followed due to the availability of students. In other words, the questionnaire was distributed at two private universities with a significant number of students available. Besides, collecting a campus questionnaire helps clarify questions directly when they arise from participants. The questionnaire comprised 25

questions. This questionnaire was divided into two parts. Participants' demographic factors were introduced in the first part. This section highlighted participants' gender, age, and occupation. The second part investigated questions related to the student's satisfaction, experience, retention strategies, and opinions concerning their university life. Developing students' satisfaction and retention concepts inevitably leads to operationalization. Questions measure is ordinal. The ordinal scale allows items to be ordered according to shared characteristics. All questions are closed type. This type of question has the advantage of being codified easily. Moreover, the resulting computer processing and analysis are simplified.

**Table 1** Measurement Scale and Indicators

Code	Variables	Measurement Scale	Indicators
CL	Campus Life	Five statements identified by González-Ramírez & García-Hernández (2022), M. H. Temesgen et al. (2021), and Y. Temesgen (2017) were used to evaluate campus life using a Likert-type measurement scale comprising five modalities.	Educational Activities Social Events Safety and well-being Campus aesthetic quality Spaces for animated activities
QL	Quality of Learning	A seven-modality Likert-type assessment scale was employed to assess the quality of learning based on five statements that Eresia-Eke et al. (2020), Bornschlegl & Cashman (2019), and Harrell & Reglin (2018) identified.	Coursework Test scores Assignments/ Projects Class Participation
RUS	Relationship with the university's Staff	Five statements identified by Rahman et al. (2020), Nabukeera et al. (2020), and Geier (2021) were used to evaluate this dimension using a Likert-type measurement scale comprising 5 points.	Instructors Registrar and admissions officer Students' affair officer
SS	Student Satisfaction	González-Ramírez & García-Hernández (2022); M. H. Temesgen et al. (2021); Y. Temesgen (2017) identified five statements were employed to assess student satisfaction using a Likert-type measurement scale comprising 5 points.	Teaching methods Learning experience Curriculum Facilities on campus Accessed resources
SR	Student Retention	A five-point Likert-type assessment scale was employed to assess retention based on five statements that Tight (2020), Talar & Gozaly (2020) and Muljana & Luo (2019) identified.	Graduation rate compared to registration Transfer credit Continuous enrollment Consistency in registration

The information was collected using a questionnaire written in English. Such a tool makes it possible to obtain a large quantity of data. Students responded confidentially to the survey. This tool allows respondents to maintain anonymity, reducing biased errors. The questionnaire is a valuable tool for collecting data and processing it quickly using SPSS, the software used.

The quality of the measuring instrument is empirically verified once the questionnaire is completed. Therefore, students in a brainstorming class submitted the questionnaire for a pre-test. Students participating in the pre-test were drawn from the same study population but were not included in the research sample. The pre-test was carried out under the same sampling conditions. The pre-test checked whether these students understood the statements' meaning. They provided comments on the measurement instrument. Students understood the questionnaire well, permitting proceeding with the questionnaire administration to the sample.

Preliminary tests shed light on the descriptive statistics and the normality distribution. The bivariate analysis verified relationships between the different variables. Statistics highlighted two critical tests. The regression analyses were used to verify hypotheses. The multiple linear regression (stepwise) highlighted student satisfaction antecedents having the most significant effect on student retention. The stepwise approach is justified since it classifies factors that significantly contribute to explaining student retention as a phenomenon studied in statistical analysis. Thus, statistical checks of the significance of the factors introduced are carried out at each analysis stage.

## RESEARCH FINDINGS

The results obtained provide a better understanding of the explanatory variables. Firstly, this data provides a descriptive portrait of answers. Second, construct validity and reliability are highlighted. Third, the data is used to conduct a regression analysis (stepwise) to measure the effect of students' satisfaction antecedents on retention.

**Table 2** Descriptive Statistics and Normality Tests

	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
CL Campus Life	3.6034	0.77887	0.775	0.143	0.704	0.285
QL Quality of Learning	3.7952	0.66747	0.591	0.143	0.992	0.285
RUS Relationship with University's Staff	3.6993	0.75848	0.451	0.143	0.298	0.285
SS Student Satisfaction	3.9269	0.72573	0.592	0.143	0.088	0.285
SR Student Retention	3.6705	0.69968	0.451	0.143	0.995	0.285

Skewness (asymmetry coefficient) indicates the direction of the distribution asymmetry. The kurtosis coefficient indicates the distribution concentration around the mean compared to the normal law. These coefficients range between  $-2$  and  $2$ . Therefore, data distribution is considered acceptable and close to normal law. Table (2) confirms that the variables have a normal distribution. The quality of learning, for example, has a kurtosis value of  $0.99$  and a skewness score of  $0.59$ . As a result, the histogram is symmetrical, and the distribution follows a standard curve. The three antecedents of student satisfaction are shown in Table (2) together with their respective means and standard deviations. The emphasis on solid agreement (high scores) was evident from the outcomes. Students' satisfaction, for instance, has a mean score of  $3.9$ . The standard deviation reached  $0.7$  on a scale from  $1$  to  $5$ .

**Table 3** Validity and Reliability

	a	KMO	Bartlet test		Sig.	Items
			Chi-Square	df		
CL Campus Life	0.777	0.783	423.703	10	0.00	5
QL Quality of Learning	0.773	0.799	461.552	10	0.00	5
RUS Relationship with University's Staff	0.842	0.814	577.161	10	0.00	5
SS Student Satisfaction	0.820	0.849	476.070	10	0.00	5
SR Student Retention	0.816	0.830	459.316	10	0.00	5

The KMO index indicates to what extent the antecedents in students' satisfaction form a coherent whole and adequately measure a concept. The Kaiser-Meyer-Olkin (KMO) Index for measuring sampling quality is at an acceptable level ( $0.6$ ), and Bartlett's test of sphericity is significant ( $\text{sig} = 0.000$ ). Cronbach's alpha is considered acceptable because values range between  $0.6$  and  $0.8$ .

Students' satisfaction antecedents reached an excellent internal consistency, as indicated by its Cronbach alpha coefficient of  $\alpha > 0.7$ . The quality of learning has a ( $\alpha = 0.77$ ), campus life has reached a ( $\alpha = 0.77$ ) and the Relationship with University's Staff ( $\alpha = 0.84$ ). Hence, these dimensions are retained for evaluating students' satisfaction.

**Table 4** Construct Validity

	CL	QL	RUS	SS	Collinearity Statistics	
					Tolerance	VIF
CL Campus Life	1				0.821	1.217
QL Quality of Learning	0.395**	1			0.355	2.817
RUS Relationship with University's Staff	0.317**	0.766**	1		0.365	2.743
SS Student Satisfaction	0.377**	0.678**	0.681**	1	0.465	2.151
SR Student Retention	0.330**	0.730**	0.708**	0.717**		

The VIF index constitutes an alternative measure of multicollinearity. The correlation analysis examined the constructs and verified the presence of significant correlations. Table (4) confirmed significant correlations between students' satisfaction with retention ( $\rho = 0.717$ ;  $p < 0.001$ ). The correlation coefficient is significant at  $0.05$ ; therefore, the hypotheses are supported. Therefore, a significant relationship can be described as moderate to strong between the antecedents of students' satisfaction and retention.

Table (5) demonstrates that campus life, quality of learning, and the relationship with the university's staff positively affect students' satisfaction. The relationship with the university's staff has the highest effect on students' satisfaction. Therefore, the logistic regression (Table 5) confirms the relationships identified in Table 4, which approves the three main hypotheses. The T-test proved that these causal relationships are statistically significant at the  $10\%$  level for these variables.

**Table 5** Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	R <sup>2</sup>	F	Sig.
	B	Std. Error	Beta				
(Constant)	0.772	0.186		4.142			0.00
CL Campus Life	0.114	0.041	0.122	2.791	0.535	109.757	0.00
QL Quality of Learning	0.362	0.070	0.333	5.140			0.00
RUS Relationship with University's Staff	0.370	0.060	0.387	6.172			0.00

a. Dependent Variable: SS Student Satisfaction

Table (5) revealed a positive and highly significant relationship between campus life ( $\beta$  stan. =  $0.122$ ;  $P < 0.001$ ), quality of learning ( $\beta$  stan. =  $0.333$ ;  $P < 0.05$ ), and the relationship with university's staff ( $\beta$  stan. =  $0.87$ ;  $P < 0.001$ ) with student satisfaction. Therefore, these antecedents would be able to explain approximately  $53\%$  of the increase in students' satisfaction. The P-value is lower than  $5\%$  for these explanatory variables.

**Table 6** Coefficients (Regression Stepwise)

Model	Unstandardized Coefficients		Standardized Coefficients	R <sup>2</sup>	F-value	t	Sig.	
	B	Std. Error	Beta					
1	(Constant)	0.767	0.163	0.533	328.184	4.714	0.00	
	QL Quality of Learning	0.765	0.042					0.730
2	(Constant)	0.319	0.156	0.624	237.981	2.050	0.00	
	QL Quality of Learning	0.473	0.052					0.452
	CL Campus Life	0.396	0.047					0.411
3	(Constant)	0.310	0.152	0.643	171.419	2.041	0.00	
	QL Quality of Learning	0.339	0.061					0.324
	CL Campus Life	0.331	0.049					0.343
	RUS Relationship with University's Staff	0.209	0.054					0.227

a. Dependent Variable: SR Student Retention

The F-Fisher test analyzed the variation of F and verified a significant improvement in the prediction in the regression equation capacity. Substantial Fisher's F (variation value) endorses the three models. Accordingly, the F variation in the regression model is significant ( $\text{sig} < 0.01$ ). It justifies the regression equation relevance and confirms that the model significantly explains the scores of student retention as the explained variable. The probability of obtaining an F value of this size by chance is less than 0.5%.

Table (6) validates the variables' positive and significant effects. The first model confirms that the quality of learning has the highest effect on students' retention ( $R^2 = 0.53$ ;  $\beta = 0.76$ ;  $P < 0.001$ ). Accordingly, one unit change in the quality of learning could increase students' retention by 53%. The P-value and the t-test validate that the effect and causal relations are statistically significant at the 5% threshold for the two variables.

The second model added campus life to the equation. This model confirms that the quality of learning and campus life has a significant statistical effect on student retention ( $R^2 = 0.62$ ;  $\beta = 0.47$  and  $0.39$ ;  $P < 0.001$ ). Consequently, a one-unit improvement in learning quality and campus life could result in a 62% increase student retention. The statistical significance of the effect and causal links between variables at the 5% threshold is confirmed by the P-value and the t-test.

The second model incorporated the relationship with the university's staff. According to this model, student retention is significantly influenced by the quality of learning, campus life and the relationship with the university's Staff ( $R^2 = 0.64$ ;  $\beta = 0.33$ ,  $0.33$  and  $0.20$ ;  $P < 0.001$ ). Thus, a one-unit boost in the antecedents of student satisfaction might lead to a 64% increase in student retention. The P-value and the t-test validate the statistical significance of the effect and causal relationships between variables at the 5% threshold. Therefore, the quality of learning, student satisfaction and the relationship with university staff as antecedents to student satisfaction have a significant statistical effect on student retention.

## CONCLUSION AND RECOMMENDATIONS

This article provided an opportunity to evaluate the role of students' satisfaction antecedents in increasing students' retention rates. The main conclusions drawn from this study refer to the vital role played by lecturers in maintaining the high quality of students learning and the central role of campus activities and the university human capital in enhancing students' satisfaction and retention rate.

Student retention is a primary objective for private universities. This research focuses on the association between student satisfaction antecedents and retention. The variables and theoretical framework that were studied differentiate this study and add theoretical and empirical values. Examining satisfaction antecedents and factors that can increase satisfaction is significant because it helps private universities retain their students in highly competitive markets. Therefore, the conceptual framework illustrating antecedents of student satisfaction affecting retention is significant to be translated into practice.

The article results overlap with (Eresia-Eke et al., 2020; Bornschlegl & Cashman, 2019; Arizzi et al., 2020). Furthermore, as Bernardo et al. (2022) and Carter & Yeo (2016b) demonstrated, student satisfaction antecedents' long-term effects are considered positive, particularly on students' well-being and university organizational effectiveness. Results inherent in the relationship between students' satisfaction and retention indicators, including quality of learning, campus life and the relationship with the university's staff, show a direct link was identified, contrary to what has been proven by (Awan & Rehman 2013; Al Hassani & Wilkins, 2022).

The antecedents of students' satisfaction significantly influence students' retention. These conclusions corroborate those obtained by de Paepe et al. (2018) and Gorky Sembiring (2015), who confirm the existence of implemented university practices to enhance students' satisfaction. These practices focus first on constantly enhancing learning quality and second on campus life. These antecedents are boosted by well-trained university staff, improve students' satisfaction and leverage students' retention rate. The latter provides the university with a solid competitive advantage.



Hence, determining factors affecting students' satisfaction and improving them is the ultimate objective for every private university. Achieving this objective helps universities improve their learning and education experience and retain their primary stakeholders. Examining students' relationships with the university's staff, namely instructors, registrar, admissions officer, and student affairs officer, is significant due to rigid regulations and extended responsibilities affecting students' satisfaction. Hypothesized results verified the significance of students' satisfaction in Lebanese universities since pleased and satisfied employees won't consider changing their universities. Besides, universities retain students until their graduation level.

This article highlights both practical and theoretical contributions. Results underlined that student satisfaction antecedents and retention are crucial aspects for universities. From a practical point of view, high retention rates contribute to the university's stability as an organization. The stability in student numbers benefits universities in prospering. Therefore, student retention ensures an ongoing flow of funding, resource planning and academic development. Students' satisfaction helps improve the university's reputation. Satisfied students recommend their university, contributing to a positive university image and attracting new scholars. Universities invest significant resources in orientation to attract students. Better retention reduces costs associated with replacing lost students and marketing activities. Universities plan and optimize educational resources, such as classrooms, libraries and infrastructure. Universities should analyze this data to identify academic areas requiring improvement. University managers should use student feedback to design personalized support programs to meet evolving needs that alter student satisfaction.

From a theoretical point of view, the conceptual framework provides an understanding of students' satisfaction, retention rate, perseverance and interaction with the university. Student satisfaction is associated with the quality of teaching. Theoretical research on teaching evaluation and teaching quality contributes to understanding how these factors influence student satisfaction and retention. In conclusion, the antecedents of student satisfaction and retention contribute to university success from a practical and theoretical viewpoint. Their in-depth understanding allows universities to implement effective strategies to improve the student experience and promote academic success.

## LIMITATIONS AND DIRECTIONS FOR FUTURE STUDIES

The article's limitations include a relatively low response rate. The research analyzed data from 290 students enrolled in two different private universities. Consequently, results can't be generalized to all students in every university in Lebanon. Besides, time limitations limited the number of the collected questionnaires. In other words, the cross-sectional approach limited the data collection.

This article provides promising avenues for future research. Indeed, it could be interesting to investigate whether the contribution of motivational theories can supplement this model. Introducing motivation could be an effective way to predict effective persistence and academic performance. It is recommended that students' demographics be focused on and introduced as moderating variables in the conceptual framework. It is significant to interconnect socio-demographic characteristics and student dropout. Those variables should be studied regarding their perceptions and experiences, and pedagogical design should be considered. To better understand what drives some students to drop out of the courses or programs they are enrolled in, relationships between students' personal and environmental characteristics, educational design, and the support offered should be questioned. Finally, the social experiences in the classroom (such as student cooperation) are considered a significant predictor of social and academic integration, affecting performance and retention. A classroom is a meeting place between students and teachers, from which social integration can occur. By studying social interactions in intellectual work (primarily through collaborative work), students can find answers to academic and social needs simultaneously without sacrificing one for the other.

## AUTHORS' CONTRIBUTIONS

All authors contributed equally to this research output.

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