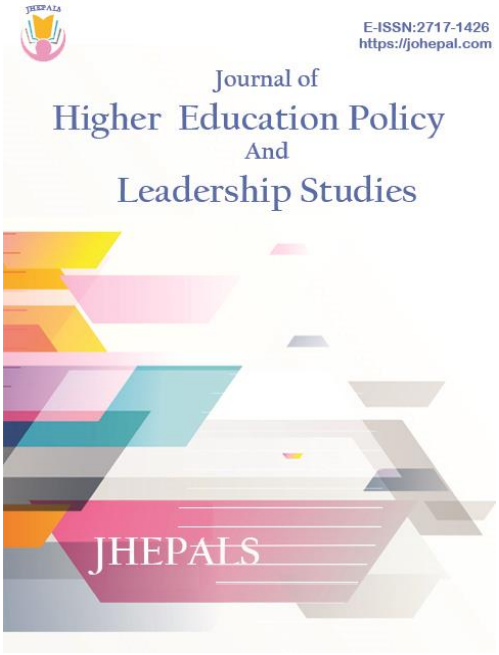
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Service Quality and Students' Satisfaction in Private Lebanese Higher Education Institutions: The Case of X University

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Abstract

Service quality and students' satisfaction have become global buzzwords in the higher education (HE) literature in the past 20 years. Research studies on service quality and its effect on students' satisfaction in the Lebanese HE sector are still very limited. This quantitative study aims to measure quality of service provided for students at X University from students' perspective. It also aims to assess the extent of students' satisfaction with their educational experience at X University and investigate the effect of service quality on their satisfaction. Data were collected from 4,004 X University students across Lebanon through an online survey questionnaire adapted from the modified Higher Education Performance-only (HEDPERF) model (Abdullah, 2006b) and student exit survey (Lebanese American University, 2017). Results revealed that good quality service is provided for students, who are mainly satisfied with their educational experience at X University. The results also showed that service quality has a significant effect on students' satisfaction, with reputation dimension as the strongest predictor of students' satisfaction and academic aspects dimension as the weakest predictor. Limitations of the study and directions for future research are provided.

Keywords: Service Quality; Students' Satisfaction; Higher Education; HEDPERF; Lebanon

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Introduction

Higher education (HE) institutions are responsible for preparing their graduates for job market. The university degree has become a critical factor for getting a job today, especially with the big increase in the number of job seekers worldwide. Harvey (2011) argues that HE sector is witnessing expansion globally, which is accompanied by a rising interest in quality, growing consumerism of HE, and increased competition (Abdullah, 2006a). Maguad and Krone (2017) highlight that rapid and dramatic changes are striking HE sector which obligate HE institutions to sustain excellence of their students' experiences. They suggest that for these institutions to meet their stakeholders' needs, regardless of their past or present good reputation, they should proactively ensure implementing student-centered and quality-focused programs. They claim that the success of HE institutions will highly depend in the future on the extent to which they ensure satisfaction of their customers, with students considered as the main internal HE customers. Harvey (2011) contends that the processes enacted by HE institutions for obtaining students' feedback about their HE experiences are significantly increasing and becoming more sophisticated. He defines students' feedback as opinions that students express about the services provided for them by their HE institutions. He emphasizes that the majority of these institutions gather their students' feedback in terms of satisfaction with the provision of these services.

Quality assurance has become an essential systemic process in HE sector all over the world. It targets different aspects of activities and operations enacted by HE institutions, and it is periodically carried out to ensure greater competitiveness and sustainable growth. There is a growing interest for public and private HE institutions in Lebanon in conducting quality assurance reviews for ensuring high level of service quality (Saliba & Gorenc Zoran, 2019). This interest is growing significantly particularly in the private Lebanese HE sector due to the fierce competition among HE institutions for attraction of new students and retention of old ones. However, according to the Mediterranean Network of National Information Centres on the Recognition of Qualifications [MERIC-Net] (2019) and Hasrouny (2011), Lebanon has no national agency and system for assuring quality in education, including HE sector; in particular, there is no standard assessment tool for HE service quality in Lebanon (Khattab, 2018), with unsystematic and speedy expansion of the HE sector in the past 10 years (Hasrouny, 2011) to reach 47 institutions (MERIC-Net, 2019). As a result, these factors impede the development of overall performance of Lebanese HE institutions (Khattab, 2018), and lead to poor quality and threatened reputation (Hasrouny, 2011).

The number of empirical research studies on service quality and its relationship to students' satisfaction in HE in many Arab countries in the Middle East is continuously increasing. However, these studies are still very limited in Lebanon. In line with this, Khattab (2018) argues that insufficient number of research studies have been conducted at HE institutions in Lebanon. Moreover, Salloum (2019) declares that little knowledge is available in this area. He adds that the majority of universities in Lebanon are not aware of the satisfaction level of their students with their universities. In addition, Nasser et al. (2008) highlighted the need for conducting more future research on students' satisfaction within private Lebanese HE.

This research study aims to measure quality of service provided for students at X University, a private Lebanese HE institution, from students' perspective. It also aims to

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assess the extent of students' satisfaction with their educational experience at X University and investigate the effect of service quality on their satisfaction.

This research study is the first to measure service quality in the Lebanese HE sector in general, and investigate its effect on students' satisfaction, using the modified Higher Education Performance-only (HEDPERF) model developed by Abdullah (2006b), in specific. It also helps in bridging the gap of lack of research on HE, in general, and on service quality and its effect on students' satisfaction in Lebanese HE context, in specific. This research study will provide X University administration with feedback on the performance of X University, service quality, and students' satisfaction and its predictors at X University; this feedback is crucial for guiding and implementing improvements, where needed, which would raise competitiveness of X University in the industry of HE locally, regionally and internationally and enhance retention of students.

Literature Review

Service Quality in HE

Service quality has caught the attention of both service providers and customers in all industries, including HE. It has become mandatory for HE institutions to survive and keep ahead of competition in the market. Evans (2011, p. 11) defines service as "any primary or complementary activity that does not directly produce a physical product". Maguad and Krone (2017) note that quality is a concept full of complexity, whose meaning has variations with organizations and people. They add that quality has many definitions that have universal acceptance. A comprehensive definition of quality is provided by Goetsch and Davis (2014, p. 2) as "a dynamic state associated with products, services, people, processes, and environments that meets or exceeds expectations and helps produce superior value". Maguad and Krone (2017) refer to service quality as the extent of meeting customers' expectations towards a service. Thus, service quality in HE can be simply defined as the degree to which the needs and aspirations of students receiving HE services are fulfilled by their universities.

Essaoudi and Lotfi (2021) measured quality of service provided for 100 student-inspectors at the Training Center for Educational Inspectors in Rabat, Morocco. The study showed that service quality was relatively acceptable (average quality). Saliba and Gorenc Zoran (2019) surveyed 500 undergraduate students at the Faculty of Public Health, branch four, at the Lebanese University on their evaluation of service quality. They found that students' perceptions on all five service quality dimensions were below their expectations. Omidian and Golchin Nia (2018) assessed quality of educational service provided for master's students at Islamic Azad University, a private university in Iran. The results revealed low quality of service. Hasbolah et al. (2018) examined quality of service delivered to undergraduate and postgraduate students at University of Selangor in Malaysia. The results revealed that there were negative gaps in all five quality dimensions between students' perceptions and expectations towards service delivery. Muthamia (2016) revealed the presence of various quality dimensions of service delivered to 43 students at the United States International University in Kenya, which met students' expectations. Saba 'Ayon (2015) investigated perceptions of 185 students at a private Lebanese university on the academic advising they received at the university. She found that a lot of students perceived

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academic advising poorly because of the negative experiences they had with academic advising and their advisors, as well. Finally, Kajenthiran and Karunanithy (2015) found that quality of service provided for 200 undergraduate and professional studies students at two private external HE institutions in Jaffna, Sri Lanka, was favorable.

Measuring Service Quality in HE

Measuring service quality in HE context is a complex task requiring comprehensive tools, which can capture all aspects of service quality in this sector. Turner (2011) contends that quality in HE is a multifaceted concept having many interpretations. He adds that many theoretical models and performance indicators have been developed for measuring and evaluating quality. According to Lazibat et al. (2014), the Service Quality (SERVQUAL) scale developed by Parasuraman et al. (1988) is the most popular instrument used for measuring service quality from customers' perspective. The SERVQUAL scale comprises 44 items (22 for customer's expectations and 22 for their perceptions) divided into five dimensions: tangibles, reliability, responsiveness assurance and empathy (Parasuraman et al., 1988). The 44 items are measured on a 7-point Likert scale ranging from strongly disagree (1) to strongly agree (7) (Parasuraman et al., 1988). The SERVQUAL scale measures service quality by calculating the gap between customers' expectations and perceptions of service quality (Parasuraman et al., 1988). Cronin and Taylor (1992) developed a scale named Service Performance-only (SERVPERF), based on the SERVQUAL scale (Parasuraman et al., 1988), for measuring customer's perceptions of service quality. Cronin and Taylor (1992) note that the SERVPERF scale is comprised of 22 items capturing only customers' perceptions with the same dimensions of the SERVQUAL (Parasuraman et al., 1988). Abdullah (2006a) criticizes generic instruments of service quality for being inadequate and irrelevant to HE sector, with an overemphasis on academic aspects of HE experience and too little focus on non-academic aspects. As a result, Abdullah (2006a) developed a 41- item scale, HEDPERF, based on the SERVPERF scale (Cronin & Taylor, 1992), for measuring students' perceptions of service quality in HE. The items are measured on a 7- point Likert scale ranging from strongly disagree (1) to strongly agree (7) (Abdullah, 2006a). The six dimensions are the following: non-academic aspects (nine items), academic aspects (12 items), reputation (nine items), access (seven items), program issues (three items), and understanding (two items) (Abdullah, 2006a). Abdullah (2006b) modified the HEDPERF scale for more superiority in its measurement capability of service quality in HE sector. Abdullah (2006b) retained the first five dimensions with all their 39 items, and dropped the 2- item dimension of understanding for its low reliability score. It is clearly noticed that the use of the modified HEDPERF scale (Abdullah, 2006b) for empirical measurement of service quality in the HE sector has been on the rise in the past decade. This is due to its better capability and appropriateness for the HE context than the widely known SERVQUAL (Parasuraman et al., 1988) and SERVPERF scales (Cronin & Taylor, 1992), which were not basically developed for the HE context.

Students' Satisfaction in HE

Customers' satisfaction has become a top priority for product and service providers globally regardless of the type of industry they work in, especially in the past few decades. Saif (2014) defines satisfaction as a feeling of pleasure that people have when their human desires and needs are met. According to Weerasinghe and Fernando (2017), "Students' satisfaction can

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be defined as a short-term attitude resulting from an evaluation of students' educational experience, services and facilities." (pp. 533-534). Students' satisfaction in HE refers to students' feeling of contentment with the quality of educational experiences and services provided for them by their universities. According to de Oliveira Santini et al. (2017), much research has been carried out on students' satisfaction in HE sector in the recent decades for many purposes. Nauffal (2009) examined the satisfaction of 1,470 students at seven public and private Lebanese universities with their overall experience at their universities. She found that students were generally satisfied with the quality of education provided by their universities for them. Nasser et al. (2008) revealed that 870 students at Notre Dame University, a coeducational Lebanese Catholic HE institution, were generally satisfied with university services delivered to them.

Nauffal and Nasser (2007) examined the satisfaction level of 840 students at four private Lebanese universities following the American HE model with their educational experience at their universities. They inferred that students were satisfied with their overall educational experience. Al Khattab and Fraij (2011) measured the satisfaction of 260 undergraduates at Al-Hussein Bin Talal University in Jordan with the electronic student information system services. They indicated that students were satisfied with these services. Baniya (2016) found that 241 undergraduate and graduate business administration students at School of Management at Kathmandu University in Nepal expressed satisfaction with overall service quality. Birhanu (2018) found that 343 senior students at Oromia State University in Ethiopia were dissatisfied with perceived service quality in three dimensions out of five dimensions. Yahaya et al. (2020) sought to determine the level of satisfaction with quality of service provided for 384 students at the University for Development Studies in Ghana. The results showed that most students were very satisfied. Finally, Twum and Peprah (2020) assessed satisfaction with services for 86 business students at Valley View University in Ghana. The results indicated that students were very satisfied with service quality.

Effect of Service Quality on Students' Satisfaction in HE

Service quality and students' satisfaction have emerged as twin terms in HE literature at the global level in the last 20 years. According to Weerasinghe and Fernando (2017), students' satisfaction is a complex process which is affected by various factors. The body of literature on the relationship between service quality as a predictor and students' satisfaction as an outcome has significantly grown globally in the past two decades. Việt (2021) measured the impact of service quality dimensions on students' satisfaction for 1,825 students at Nong Lam University, Vietnam. He found that the four tested dimensions, namely academic aspects, non-academic aspects, reputation, and access, were significant determinants of students' satisfaction. Ali et al. (2020) examined the effect of three service quality dimensions, namely academic aspects, non-academic aspects, and reputation, on satisfaction for 260 undergraduate students at a public university in the East Coast of Malaysia. They found that the dimensions of academic aspects and non-academic aspects significantly contributed to students' satisfaction.

Kajenthiran and Karunanithy (2015) investigated the relationship between service quality and students' satisfaction for 200 undergraduate and professional studies students at two private external HE institutions in Jaffna, Sri Lanka. It was found that service quality, particularly the dimensions of assurance and responsiveness, influenced students'

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satisfaction. Osman and Saputra (2019) examined the influence of service quality on students' satisfaction for 310 fourth-year business students at different private HE intuitions in Bangladesh. They revealed that service quality did not influence students' satisfaction. Dib and Alnazer (2013) sought to determine the effect of service quality on students' satisfaction for 170 undergraduate and postgraduate students at the Higher Institute of Business Administration in Syrian universities. They found that service quality has no effect on students' satisfaction. Truong et al. (2016) sought to identify the impact of service quality on students' satisfaction for 463 students at private colleges in Vietnam. The study found that all dimensions of service quality, including tangibility, guarantee (assurance), reliability, responsiveness and empathy, contributed to students' satisfaction. Baniya (2016) aimed to study the effect of service quality on students' satisfaction for 241 undergraduate and graduate business administration students at School of Management at Kathmandu University in Nepal. It was found that service quality affected students' satisfaction, with empathy and responsiveness as critical factors contributing most to students' satisfaction.

Azam (2018) investigated the influence of three service quality dimensions, namely academic service, administrative service and physical evidence, on students' satisfaction for 160 undergraduate students at private HE institutions in Saudi Arabia. The study revealed that three aspects pertaining to academic service dimension, namely assurance, empathy and reliability, had an influence on students' satisfaction. The study also revealed that administrative service dimension, with its all four aspects, influenced students' satisfaction. It was also found that only one aspect pertaining to physical evidence out of four aspects, namely employees' appearance, had an influence on students' satisfaction. Banahene et al. (2018) examined the impact of service quality on students' satisfaction for 412 undergraduate students at six private Ghanaian universities. The study found that service quality, particularly the dimensions of academic aspects, reputation, and program issues, impacted students' satisfaction. Finally, Muhammad et al. (2018) investigated the effect of service quality on students' satisfaction for 384 students from 28 universities in Pakistan. They found that service quality, especially the dimensions of academic aspects, non-academic aspects, reputation and access, were significant predictors of students' satisfaction.

Conceptual Framework of the Study

This research study is underpinned by the following conceptual framework based on Abdullah's (2006b) modified HEDPERF model, as shown in figure 1.

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Service Quality and Students' Satisfaction

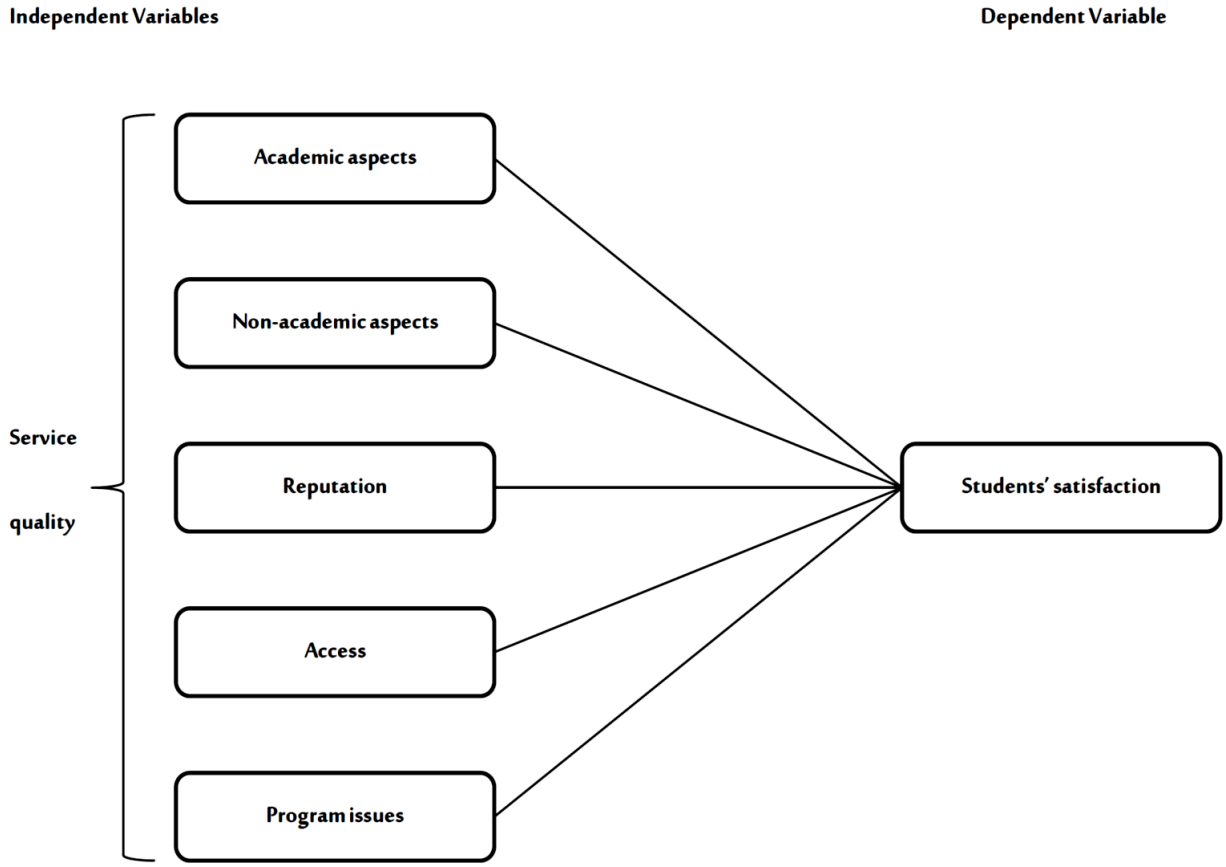


Figure 1. Conceptual Framework of the Study

Research Questions and Hypotheses

1. What is the quality of service provided for students at X University?
2. To what extent are students satisfied with their educational experience at X University?
3. What is the effect of service quality on students' satisfaction with their educational experience at X University?

   H_A: Service quality affects students' satisfaction with their educational experience at X University

   H_{A1}: Academic aspects affect students' satisfaction

   H_{A2}: Non-academic aspects affect students' satisfaction

   H_{A3}: Reputation affects students' satisfaction

   H_{A4}: Access affects students' satisfaction

   H_{A5}: Program issues affect students' satisfaction

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Research Methodology

Research Context and Site

The private Lebanese HE sector includes universities and university colleges and institutes following the American and French HE models. Many of those HE institutions have religious affiliations, whereas the rest do not. X University is a private Lebanese HE institution following the American HE model. It offers both undergraduate and graduate degrees in five programs of study: arts and sciences, business, education, engineering, and pharmacy. Its language of instruction is English. It adopts a semester-based academic calendar divided into three semesters: fall, spring, and summer. It has nine branches distributed among the eight Lebanese governorates. It also has six branches outside Lebanon: four in Yemen, one in Senegal, and one in Mauritania. It has no religious affiliation.

Research Design and Sample

This study adopted quantitative methodology and used questionnaire survey design. Data were collected from 4,004 students in the five schools from all X University branches across Lebanon during fall semester, 2020/2021. Table 1 presents demographics of participants.

Table 1.
Demographics of Participants

Demographic Variable		Frequency (N)	%
Gender	Male	1235	30.8
	Female	2769	69.2
Age	20 years and below	2343	58.5
	21-30	1480	37
	31-40	150	3.7
	41-50	28	.7
	51 years and above	3	.1
Level of Study	Undergraduate	3274	81.8
	Graduate	730	18.2
School	Arts and Sciences	1230	30.7
	Business	723	18.1
	Education	1391	34.7
	Engineering	527	13.2
	Pharmacy	133	3.3

Research Instrument

The researchers employed a questionnaire to collect data from participants. The draft questionnaire consisted of three sections: demographics of participants, measurement of service quality, and assessment of the extent of students' satisfaction. The first section was developed by the researchers and covered four variables: gender, age, level of study, and school. The second section was adapted from Abdullah (2006b). This section consisted of 38 items divided into five subsections: academic aspects (9 items), non-academic aspects (12 items), reputation (8 items), access (7 items), and program issues (2 items). The 38 items were measured on a 5-point Likert scale ranging from 1 for 'very poor' to 5 for 'very good'. The third section consisted of six items measured on a 5-point Likert scale ranging from 1 for 'to a very little extent' to 5 for 'to a very large extent'. The first four items were adapted

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from the Lebanese American University (2017), and the last two items were developed by the researchers.

Validity of the Research Instrument

The draft questionnaire was checked for content validity by five jurors. Three of them were instructors with Ph.Ds (two education instructors and one business instructor) at two private Lebanese universities, and the rest were Ph.D. holders and candidate in education at the Lebanese University. Content validation of the draft questionnaire consisted of two consecutive phases: qualitative then quantitative.

The qualitative phase comprised the following areas: appropriateness of directions for the questionnaire, appropriateness and completeness of content areas, appropriateness and clarity of questionnaire items, adequacy of response options, opportunity for revision, deletion, and addition of items, and opportunity for additional comments. The qualitative review resulted in revision of 15 items in all dimensions except program issues, breaking one item in reputation dimension into two distinct items, deletion of two items from the dimensions of non-academic aspects and student satisfaction, and addition of one item to the dimension of access.

The quantitative review required jurors to rate the relevance of items of the revised questionnaire to the measured dimensions using a 4- point Likert scale ranging from 1 for 'not relevant' to 4 for 'highly relevant'. The relevance score of 1 or 2 was recorded as 0, and the relevance of score of 3 or 4 was recorded as 1 (Yusoff, 2019). Content validity index (CVI) was then calculated for each item (I-CVI) and scale (S-CVI/Ave). According to Polit et al. (2007), a scale should have I-CVIs of .78 or higher and an S-CVI/Ave of .90 or higher for three or more experts to be considered of good content validity. All items got an I-CVI ranging from .80 to 1 and an S-CVI/Ave of .95. Hence, the revised questionnaire had high content validity.

The revised questionnaire was also checked for face validity by six X University SoED students. Face validation were conducted based on the following criteria: reasonableness and clarity of items, adequacy of instructions, accuracy of language, and appropriateness of layout (Oluwatayo, 2012). Consequently, the revised questionnaire was found to be having high face validity.

Reliability of the Research Instrument

A pilot study was conducted on 41 undergraduate and graduate SoED students for estimating reliability of the revised questionnaire. Split-half reliability was assessed by dividing the revised questionnaire into two equal halves, odd and even. The scores of those 41 students on the two halves were correlated (r=.910) and then adjusted using Guttman Split-Half Coefficient (.952). Thus, the questionnaire was highly reliable.

Data Collection Procedures

After obtaining ethical approval of the Institutional Review Board (IRB) at X University for conducting the study, the survey link was disseminated to students through stream on Google classroom with assistance of deans, assistant deans, and instructors in the five schools across Lebanon. Students were assured of the anonymity and confidentiality of their responses. Data collection lasted for five weeks from 9 January to 13 February 2021.

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Data Analyses Procedures

The researchers performed data analysis using SPSS 24. The researchers used frequencies and percentages for describing demographics of participants. The researchers used descriptive statistics (mean and SD) for answering the first and second research questions and multiple regression analysis for answering the third research question and testing its hypotheses.

Results

RQ1: What is the quality of service provided for students at X University?

Table 2 shows mean score and SD for each item in service quality dimensions, each dimension as a whole, and all dimensions combined. The dimension of academic aspects received the highest rating (Mean=4.04, SD=.69), followed by reputation dimension (Mean=3.94, SD=.65), program issues dimension (Mean=3.92, SD=.76), access dimension (Mean=3.91, SD=.69), and non-academic aspects dimension (Mean=3.85, SD=.73). The overall mean score for the five service quality dimensions combined is 3.93 with a SD of .62.

Table 2.
Mean and SD of Participants' Responses to Service Quality Items

#	Dimension/Item	N	Mean	SD
	A- Academic Aspects			
1	Instructors are knowledgeable for answering my questions regarding course syllabi.	4,004	4.10	.85
2	Instructors assist me in a careful and polite manner.	4,004	4.24	.82
3	Instructors are never too busy to refuse my requests for assistance.	4,004	3.90	.94
4	When I have a problem, instructors are keen to solve it.	4,004	4.00	.95
5	Instructors have positive and high expectations for students.	4,004	4.09	.86
6	Instructors communicate positively in the classroom.	4,004	4.26	.83
7	Instructors return graded tests and assignments within a reasonable amount of time.	4,004	3.79	1.01
8	Instructors office hours are sufficient and convenient for me.	4,004	3.88	.92
9	Instructors are highly qualified and experienced in their respective field of specialization.	4,004	4.16	.83
		4,004	***4.04***	***.69***
	B- Non-Academic Aspects			
10	When I have a problem, the university's administrative staff is keen to solve it.	4,004	3.79	.98
11	The university's administrative staff provides individual attention to my inquiries.	4,004	3.76	.94
12	Questions and complaints are dealt with quickly and effectively.	4,004	3.71	.94
13	The administrative staff is never too busy to take my requests for assistance.	4,004	3.68	.95
14	The administrative staff keeps accurate records that can be referred to.	4,004	3.82	.87
15	When the administrative staff promises to do something within a certain time, they do it.	4,004	3.87	.92
16	The working hours of administrative services are convenient.	4,004	3.85	.86
17	The administrative staff has a positive attitude towards their work and the students.	4,004	3.93	.88
18	The administrative staff communicates well with the students.	4,004	3.95	.90
19	The administrative staff is knowledgeable of the university's systems and/or procedures.	4,004	3.98	.83
20	I feel secure in my relationship with this university.	4,004	4.05	.90
		4,004	***3.85***	***.73***
	C- Reputation			
21	The university has a professional image.	4,004	4.14	.84
22	The academic facilities are adequate and convenient.	4,004	4.01	.80
23	The university executes academic programs of excellent quality.	4,004	4.04	.84
24	The recreational facilities are adequate and convenient.	4,004	3.90	.84
25	The sizes of groups allow personal classroom assistance.	4,004	3.88	.85
26	The university location is ideal.	4,004	4.09	.88

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27	The layout and appearance of campuses are excellent.	4,004	4.07	.87
28	The university provides market-oriented academic programs.	4,004	3.88	.82
29	The university's graduated students are easily employable.	4,004	3.51	1.01
		4,004	***3.94***	***.65***
	D- Access			
30	The students are treated equally and respectfully by the university.	4,004	3.97	.92
31	The students are free to express their opinions.	4,004	4.00	.92
32	The administrative staff respects the confidentiality of information I disclose to them.	4,004	3.98	.82
33	It is easy to contact the administrative staff by telephone and/or email.	4,004	3.79	1.05
34	The university fosters and promotes the creation of student organizations (e.g. recreation and sports organizations, community service organizations...etc.).	4,004	3.73	.90
35	The university appreciates feedback from students in order to improve the delivery of services.	4,004	3.86	.90
36	The university has a standardized and simple procedure for providing services.	4,004	3.89	.81
37	The university provides directions and information on its website for students to conduct transactions online (e.g. register, request a transcript, apply for a scholarship …etc.).	4,004	4.07	.85
		4,004	***3.91***	***.69***
	E- Program Issues			
38	The university provides a wide range of academic programs with several specialties.	4,004	3.90	.81
39	The university provides academic programs with flexible structures and study plans.	4,004	3.95	.84
		4,004	***3.92***	***.76***
	All service quality dimensions	***4,004***	***3.93***	***.62***

To interpret the mean scores for the five service quality dimensions and the overall mean score, the 5-point Likert scale on level of quality was corrected according to Algahtany et al. (2011), which resulted in a new scale with equal intervals, as shown in table 3.

Table 3.
Correction of the 5-point Likert Scale on Level of Quality

Interval	Point on Scale
1.00-1.80	Very poor
1.81-2.60	Poor
2.61-3.40	Average
3.41-4.20	Good
4.21-5.00	Very good

As the mean scores for the five service quality dimensions in decreasing order and the overall mean score are 4.04, 3.94, 3.92, 3.91, 3.85, and 3.93 respectively, which all fall within the fourth interval (3.41-4.20), this means that the quality of service provided for students at X University is good.

RQ2: To what extent are students satisfied with their educational experience at X University?

Table 4 shows that mean score and SD for each item in the dimension of student satisfaction and for that dimension as a whole. In total, it received a mean score of 3.80 with a SD of .83. Item 40 (Recommending the university to friends) received that highest rating with a mean score of 3.88 and a SD of .97, whereas item 42 (Joining and becoming an active member of the university's Alumni Association) received the lowest rating with a mean score of 3.64 and a SD of 1.12.

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Table 4
Mean and SD of Participants' Responses to Students' Satisfaction Items

#	Dimension/Item	N	Mean	SD
	A- Student Satisfaction			
40	I would recommend the university to my friends.	4,004	3.88	.97
41	I would like to continue my master's/doctoral studies at the university if the major and degree I require is offered.	4,004	3.87	1.11
42	I would like to join and be an active member of the university's Alumni (former students) Association.	4,004	3.64	1.12
43	I am satisfied with my overall experience at the university.	4,004	3.83	.978
44	The academic degree offered by the university is worth the effort.	4,004	3.81	.96
		4,004	***3.80***	***.83***

To interpret the mean score for student satisfaction dimension, the 5-point Likert scale on extent of satisfaction was corrected according to Algahtany et al. (2011), which resulted in a new scale with equal intervals, as shown in table 5.

Table 5.
Correction of the 5-point Likert Scale on Extent of Satisfaction

Interval	Point on Scale
1.00-1.80	To a very little extent
1.81-2.60	To a little extent
2.61-3.40	To a moderate extent
3.41-4.20	To a large extent
4.21-5.00	To a very large extent

As the mean score for the student satisfaction dimension is 3.80, which falls within the fourth interval (3.41-4.20), this means that students are satisfied to a large extent with their educational experience at X University.

RQ3: What is the effect of service quality on students' satisfaction with their educational experience at X University?

H_A: Service quality affects students' satisfaction with their educational experience at X University
H_{A1}: Academic aspects affect students' satisfaction
H_{A2}: Non-academic aspects affect students' satisfaction
H_{A3}: Reputation affects students' satisfaction
H_{A4}: Access affects students' satisfaction
H_{A5}: Program issues affect students' satisfaction

Multiple regression analysis was conducted to investigate the effect of service quality and its dimensions (independent variables) on students' satisfaction (dependent variable), i.e. to test H_A and its five sub-hypotheses, H_{A1}, H_{A2}, H_{A3}, H_{A4}, and H_{A5}.

Before running multiple regression analysis, its assumptions were checked. Analysis of multicollinearity statistics showed that the assumption of no multicollinearity was met, as VIF scores were below 5 (2.383, 3.109, 3.588, 4.096, and 2.563 respectively), as suggested by James et al. (2013), and tolerance scores were above .2 (.420, .322, .279, .244, and .390

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respectively), as suggested by Weisburd and Britt (2014). The Durbin-Watson statistic showed that the assumption of independence of values of residuals was met since the obtained value was close to 2 (Durbin-Watson value=1.878). The scatter plot of standardized residuals vs standardized predicted values showed that the data met the assumptions of homoscedasticity and linearity. The P-P plot for the model suggested that the assumption of normality of the residuals was met, as the dots were close to the diagonal line. Finally, the assumption of no influential cases biasing the model was met, as Cook's Distance values were all under 1.

The results of multiple regression analysis are shown in tables 6, 7 and 8. Table 6 shows that R^2=.490, which means that 49% of variance in students' satisfaction was explained by the combination of service quality dimensions: academic aspects, non-academic aspects, reputation, access, and program issues.

Table 6.
Model Summary

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.700[a]	.490	.490	.59296	1.878

a. Predictors: (Constant), Program_Issues, Academic_Aspects, NonAcademic_Aspects, Reputation, Access
b. Dependent Variable: Student_Satisfaction

Table 7 shows that the model was statistically significant F (5, 3998)=769.723, *p=.000*<.0005. In other words, the combination of the independent variables (academic aspects, non-academic aspects, reputation, access, and program issues) significantly predicted students' satisfaction. Therefore, H_A was supported.

Table 7.
Result of ANOVA

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1353.172	5	270.634	769.723	.000[b]
	Residual	1405.696	3998	.352		
	Total	2758.868	4003			

a. Dependent Variable: Student_Satisfaction
b. Predictors: (Constant), Program_Issues, Academic_Aspects, NonAcademic_Aspects, Reputation, Access

According to table 8, the statistically significant predictors of students' satisfaction in decreasing order of strength are as follows: reputation (Beta=.367), access (Beta=.171), program issues (Beta=.131) and academic aspects (Beta=.101). In other words, reputation is the strongest predictor while 'academic aspects' is the weakest predictor. However, 'Non-academic aspects' is not a statistically significant predictor of students' satisfaction (*p=.978*>.05). Therefore, H_{A1}, H_{A3}, H_{A4}, and H_{A5} were supported, whereas H_{A2} was rejected.

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Table 8.
Coefficients of Multiple Regression Analysis

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.118	.061		1.914	.056		
	Academic_Aspects	.121	.021	.101	5.787	.000	.420	2.383
	NonAcademic_Aspects	.001	.023	.001	.028	.978	.322	3.109
	Reputation	.465	.027	.367	17.159	.000	.279	3.588
	Access	.204	.027	.171	7.489	.000	.244	4.096
	Program_Issues	.143	.020	.133	7.340	.000	.390	2.563

a. Dependent Variable: Student_Satisfaction

Conclusion and Discussion

This research study aimed to measure quality of service provided for students at X University from students' perspective. It also aimed to assess the extent of students' satisfaction with their educational experience at X University and investigate the effect of service quality on their satisfaction.

The results of the study indicate that the quality of service provided for students at X University is good. This result is consistent with the following studies: Essaoudi and Lotfi (2021), Muthamia (2016), and Kajenthiran and Karunanithy (2015). However, it is inconsistent with the following studies: Saliba and Gorenc Zoran (2019), Omidian and Golchin Nia (2018), Hasbolah et al. (2018), and Saba 'Ayon (2015). This result may be attributed to the establishment of Quality Assurance, Institutional Effectiveness and Accreditation (QAIEA) office at X University in 2017 and the continuing professional development that both academic and administrative staff receive at X University.

The results also show that students are overall satisfied with their educational experience at X University. This result supports the following studies: Nauffal (2009), Nasser et al. (2008), Nauffal and Nasser (2007), Al Khattab and Fraij (2011), Baniya (2016), Yahaya et al. (2020), and Twum and Peprah (2020). Nevertheless, it differs with the findings of Birhanu's (2018) research. This result may be attributed to the ongoing efforts exerted by X University for promoting better campus experiences and improving aspects of university life for students.

The results indicate that the combination of service quality dimensions, namely academic aspects, non-academic aspects, reputation, access, and program issues, significantly predicts students' satisfaction, as well. This result is similar to the following studies: Kajenthiran and Karunanithy (2015), Truong et al. (2016), Baniya (2016), Azam (2018), Banahene et al. (2018), and Muhammad et al. (2018). Yet it is contrary to the following studies: Osman and Saputra (2019) and Dib and Alnazer (2013). The results indicate that 'academic aspects' are a predictor of students' satisfaction and support the following studies: Việt (2021), Ali et al. (2020), Azam (2018), Banahene et al. (2018), and Muhammad et al. (2018). This result may be attributed to students' belief of the importance of academic staff's role in enhancing their knowledge and preparing them for job market or developing their career skills. The results indicate that reputation is a predictor of students' satisfaction, which is consistent with the following studies: Việt (2021), Banahene et al.

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(2018) and Muhammad et al. (2018). This result may be due to students' belief of the significance of the university's reputation and professional image for them to get employed after graduation. The results indicate that 'program issues' are a predictor of students' satisfaction, which is in agreement with a study by Banahene et al. (2018). This result may be explained by students' belief of the importance of having the option to choose academic programs with flexible structures, study plans, and several specialties for earning a high-grade point average and increasing their employment opportunities. The results indicate that access is a predictor of students' satisfaction, which is in tune with a study by Việt (2021) and a study by Muhammad et al. (2018). This result may be attributed to students' belief of the significance of convenience and accessibility to the university's facilities and services for their learning. The results indicate that 'non-academic aspects' are not a predictor of students' satisfaction, which is inconsistent with the following studies: Việt (2021), Ali et al. (2020), and Muhammad et al. (2018). This result may be due to students' belief that non-academic staff do not contribute to their learning and academic achievement.

X University is a private Lebanese HE institution providing service of good quality to its students, who are to a large extent satisfied with their educational experience at X University. Service quality has a significant effect on students' satisfaction, with reputation dimension as the strongest predictor of students' satisfaction and academic aspects dimension as the weakest predictor.

Contributions of the Study

This study has provided an initial insight as to the role of HE service quality and its effect on students' satisfaction in the Lebanese HE sector, in specific. It is the first study to use the modified HEDPERF model (Abdullah, 2006b) for such purpose in the Lebanese HE context. The results offer further understanding of the quality of service provided for students at X University. They give insight into the extent of students' satisfaction with their educational experience at X University and the effect of service quality on their satisfaction, as well. The results also inform the administration of X University about the two most critical factors for maintaining and enhancing students' satisfaction, namely reputation and access. This will help X University better compete in the HE sector locally, regionally, and internationally; retain old students; and attract new ones.

Limitations

The results of this study are limited to one private HE institution in Lebanon. Accordingly, the results cannot be generalized to all private Lebanese HE institutions. In addition, X University is a private Lebanese HE institution following the American HE model with no religious affiliation. Therefore, the results cannot be generalized to private Lebanese HE institutions that follow the French HE model and to those that have religious affiliations, as well.

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Direction for Future Research

The researchers suggest that future studies target other private Lebanese HE institutions and the Lebanese University, the only one public HE institution in Lebanon. They also suggest conducting a comparative study among private Lebanese HE institutions and other comparative studies between them and the Lebanese University on the same topic, as well.

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