

Investigating the Service Quality Dimensions and their Impact on University Students' Satisfaction in a Private Higher Education Institution in Lebanon

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Abstract

Quality is a key word in every context, as it is the major factor leading to high performance delivery of services, and a major condition to attain customer satisfaction. Within a challenging and very competitive academic field and taking into account the large multitude of services provided by different types of higher education institutions, identifying the key dimensions of service quality in the Lebanese higher education is a priority for different higher education institutions in Lebanon, to enhance their overall services and maintain a leading position in attracting top students.

This study is the first of its kind in the Lebanese Higher Education sector, aiming to design, develop, implement and assess a conceptual framework of a service quality model for service quality evaluation in the Lebanese Higher Education. In addition, the study aims to determine the most important service quality dimensions from a students' perspective. The framework proposed is based on the initial service quality model developed by Parasuraman et al. (1985), while considering the three qualities highlighted in Gronroos (1983) and Lehtinen and Lehtinen (1982) models: Physical Quality (Campus Physical Facilities), Interactive Quality (Interactions with Staff, Administration and other Students on Campus) and Corporative Quality (University Image and Reputation). The framework also aligns well with the Importance-Performance (IPA) model. The final attained model consists of seven major service quality dimensions: Quality of Education, Quality of Students Services Support, Campus Physical Facilities, University Image and Reputation, Students Social Life on Campus, Interaction with Faculty and Interaction with Administrative Staff.

A case study of a private Lebanese university is considered aiming to implement the developed service quality model conceptual framework and evaluate the quality of various services. The Lebanese international University (LIU) has 9 campuses across the Lebanese districts, allowing a wide implementation of the framework and provides a good basis for data collection and analysis. To characterize and communicate the developed framework, a questionnaire was developed to collect data from students and help in assessing and analysing gaps between level of importance and their perception of the performance for each dimension. 1,223 questionnaires were distributed using proportionate stratified random sampling, 107 returned questionnaires or failed to complete and return the respective questionnaire. Thus, a total of 1,116 questionnaires were employed in the assessment and analysis.

Based on the data collected and the students' feedback, an overall analysis and evaluation process was performed. A holistic comparison is carried out for various demographic variables against the seven dimensions of service quality. An Importance-Performance matrix was used to identify prioritized areas where LIU needs to act and allocate its resources. Multiple approaches have

been employed and conducted to aid the analysis and assessment in this study including descriptive statistical analysis, one-way analysis of variances (ANOVA), Levene's Test, regression analysis, Confirmatory Factor Analysis (CFA), Structural Equation Model (SEM). In addition, regression analysis is used to test the hypothesis and to determine the existence of relationships between various service quality dimensions, students' satisfaction and student's loyalty. Finally, IBM SPSS AMOS is employed to generate the output using CFA and SEM techniques.

The analysis shows that the critical attributes which need direct LIU attention are offering comfortable accommodation, good internet services, offering affordable accommodation, modern sports facilities, safe accommodation and parking areas for students. The reported results confirmed all the hypotheses defined at the beginning of the investigation except for Campus Physical Facilities. In this regard, it highlighted a positive significant relation between the various dimensions considered and the students' satisfaction except for the independent variable Campus Physical Facilities which had a negative non-significant relation. The reasons for this negative non-significant relation were attributed to the economic situation, past students' experiences and current LIU facilities status. Finally, a model for students' satisfaction was developed using the unstandardized regression weight of each of the seven dimensions proposed in this study.

This study, through the service quality model conceptual framework and yields a multitude of positive impacts and benefits for the considered Lebanese International University on one hand and for the whole Lebanese Higher Education Sector on the other hand. On a holistic level, the current investigation will help improving the overall performance of the Lebanese Higher Education as quality services is at the heart of every single academic institution performance. In general, a systematic service quality assessment tool will lead to better services quality and thus higher university performance and consequently higher students' satisfaction rates. This will help in maintaining the leading position of the Lebanese Higher Education sector in the region.

The current work is a step forward towards improving the overall performance of the Lebanese Higher Education sector through developing the first of its kind conceptual framework for a service quality model for service quality evaluation in the Lebanese Higher Education. From a holistic perspective, a reliable and systematic service quality assessment tool is a major condition to attain better services quality, and thus higher university performance and consequently higher students' satisfaction rates. The current investigation is a step forward towards maintaining the leading position of the Lebanese Higher Education sector in the region.

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Chapter 1 Introduction

1.1 Introduction

This first chapter provides a platform to introduce and characterize the current investigation. A comprehensive background is provided with an overview of the Lebanese educational sector along with the main models and systems adopted in Lebanon and the holistic Lebanese educational environment. In addition, the chapter highlights the main purpose of the study with the major objectives and the research problem. The added value of the current investigation is also provided along with the main impacts and benefits for the Lebanese higher education sector. Finally, an overall description of the thesis outline with each chapter content and contribution is briefly provided.

1.2 Higher Education in Lebanon

Shedding the light on the higher education (HE) sector, Lebanese universities are among the oldest and most distinguished in the Middle East region. In overall, the HE sector in Lebanon comprises 41 private higher education institutions (HEI) and one public university (Naufal, 2004). Although Lebanese universities are randomly scattered all over Lebanon, around 70% of college students are registered in HEI located in the capital, Beirut (Naufal, 2004). Similar to other developing countries, the educational systems in the Lebanese HEI were first initiated and developed by the former colonial powers (Naufal, 2004). In this context, the Lebanese educational system is a mix of multiple educational models, mainly the French, American and British models. Saying that, there is no one major dominant educational system in Lebanon, and universities have adopted a variety of educational systems including the American, French, and Egyptian systems. An assessment of the Lebanese educational sector published by BankMed (2014) stated that in the 2011-12 academic year, a total of 192,522 students were enrolled in private and public universities in Lebanon. Among these, around 61.7% were enrolled in private universities (Soueid et al., 2014).

Before the Lebanese civil war in 1975, the higher educational system was considered one of the most reputed systems in the Middle East (Ghezaoui, 2001). In 1972, the higher education system in Lebanon had a 54.4% foreign students (CERD, 1973). The war ended in 1992 but its upsetting effects are still influencing the country on various levels, including societal, economic and political

impacts. Considering this, the war had large negative impacts on the Lebanese educational sector as a whole and on the HEI in particular. Among the effects, a drastic decrease by around 29.5% in the number of foreign students attending Lebanese HEI was reported (CERD, 1993). Nevertheless, Lebanon is still acknowledged for its leading role in education in the Middle East, taking into account the different types of services provided by various academic and higher education institutions. This is reflected on many levels, with the large number of successful Lebanese young graduates with high competences and potential in various industries and academic fields. In addition, the Lebanese HEIs have extended their network in the last two decades, resulting into collaboration agreements with top class intentional universities and industrial companies in different fields.

The higher education sector in Lebanon is one of the most established and reputed sectors in the Middle Eastern region. However, nowadays countries like Qatar, Saudi Arabia and UAE are providing a competitive service quality for their students. These are considered rich oil countries with plenty of resources and huge economic potential for development and flourish, contrary to Lebanon who has no such economic or energy resources and relies solely on its human resources to drive the change and promote the diverse fields. A member of Qatar's ruling family, Sheikh Abdulla bin Ali Al-Thani, stated that Qatar needs a viable and advanced economy in case oil runs out in the region (Coughlan, 2012). So now these countries are competing against Lebanon to enhance their educational sector and attract more international students.

Despite the high level of challenge and competitiveness of the academic environment nowadays, the Lebanese higher education sector lacks a tool which could aid carrying out a systematic and effective service quality assessment. In recent investigations, quality was reported being one of the most important factors for educational institutions success on the long term (Athiyaman, 1997 and Petruzzellis et al., 2006). There has been a considerable debate about the definition of service quality in higher education (Becket and Brookes, 2006). Peters et al. (1982) have defined quality as the excellence in education. According to Crosby (1979), quality is the conformance of education output to the planned goals. Nevertheless, Holdford and Patkar (2003) stated in their investigation that educational service quality is the assessment of services the students were offered in their educational experience. Ramaiyah and Ahmad (2007) added that students' learning abilities improve with good quality education, as their levels of satisfaction and dissatisfaction have a big impact on their education results, whether being a success or a failure. On the other hand, the increasingly competitive academic environment has urged the majority of higher education institutions to become increasingly more responsive to students' needs. Dissatisfied students might have low performance or might even withdraw from their universities. In this case, the process of attracting new customers (students) costs more than retaining old students (Anderson and Mittal, 2000). Also, students who are

dissatisfied could negatively impact the image of the university through “word of mouth”, and they are unlikely to recommend their educational institution to the upcoming potential students. Therefore, private universities in Lebanon should be concerned about the quality of their services. In order for the higher education institutions to succeed and flourish, including service quality assessments to evaluate their services’ efficiency is a key factor to consider (Sirvanci, 2004). Thus, a systematic and reliable quality assessment of a service delivered by an institution should be on the top of the selected priorities for any higher education institution and different academic practitioners in the area. The most crucial challenge educators have to face is to recognize and implement the most proper model of service quality and the most suitable dimensions for service quality (Ford and Bach, 1997). Saying that and considering the efforts devoted to improving the overall performance of public and private Lebanese HEIs, the Lebanese higher education sector still lacks a valid and reliable service quality assessment tool. Such tool is an indispensable requirement towards attaining a systematic and methodical assessment of the services provided by different institutions along with ensuring a satisfactory quality level to achieve the academic goals.

1.3 Outline of the History and Development of Lebanese International University

The Lebanese International University (LIU) was established under Presidential Decree No. 5294 in April 2001 as the Bekaa University. The university name was changed afterward to the Lebanese International University (LIU), as the founders wanted to change the university image from being a regional institution to a Lebanese nationwide university present in all the Lebanese districts. LIU has a mission to provide high quality higher education for Lebanese students, training and preparing them to be an active part in the professional workforce. The university wanted to democratize higher education so eight additional campuses were established in different regions in Lebanon between 2003 and 2013: Saida, Nabatieh, Tripoli, Mount Lebanon, Tyre, Rayak, and Halba-Akkar. LIU has now established its national reputation with nine campuses spread across Lebanon, playing a major role in shaping and leading higher education in the country.

LIU is also uplifting the university’s prominence with widespread improvement and significant academic achievements under the leadership of the founder Mr. Abdul Rahim Mourad. The founder ambitions were so high that he wanted LIU to be successful not only in Lebanon, but also in the Middle East region and in the whole Arab World. So, three additional campuses were established in Yemen (Sanaa, Aden and Taiz); one in Mauritania and Senegal since 2006. As a motive, LIU aims to be always a ground-breaking institution that is known for innovative education whether in Lebanon or other parts of the Arab world.

LIU has currently 28,462 students enrolled in its five schools; Arts and Science, Business, Education, Engineering and Pharmacy. LIU has approximately 13% of the overall number of students enrolled in private HEIs in Lebanon (Soueid, M. et al., 2014). To deliver high quality education and training, LIU has more than 1,000 faculty and staff members in different faculties. The standard academic year at LIU is comprised of three semesters; fall and spring semesters that last for around sixteen weeks, and a summer semester of a six weeks-period.

The Lebanese International University mission is to provide affordable higher education with excellence. LIU looks forward to training students to be responsible citizens and committed learners. LIU invests in its students to cultivate a cultural and environmental awareness through the best of resources. Moreover, LIU spreads diverse learning experiences by offering the students a safe environment that permits the dynamic relationship between students and instructors. To maintain a high-quality education experience, LIU focuses on its values and commitment to student support and constantly assess curricula for innovative results.

In addition, LIU has a vision of being recognized as Lebanon's leading innovative educator that endorses its students' success through excellence learning and career development. This is achieved through continual development, reliability, opportunity, partnership and joint endeavours with both the society and its businesses. LIU is committed to grant its students educational access to knowledge, life skills and ethics that are essential for succeeding in a knowledge-based community. Considering the job market and the relation with graduates, LIU is dedicated to providing intellectual development and develop alumni relations that will motivate and empower its graduates to adopt a noteworthy change in the job market.

1.4 Purpose and Value of the Research

Most Lebanese institutions today found themselves in a position where they aim for the highest possible intake of new students. At the same time, the students have an increasing number of universities and colleges to choose from and thus raising the level of competition among higher education institutions (Seeman and O'Hara, 2006). In addition, the competition in the educational sector is forcing higher education institutions in Lebanon to shape their service quality dimensions and adopt a marketing strategy to provide better and unique services compared to other competitors. With this large pool of HEIs to select from in Lebanon and in the Middle East, it is necessary for universities to identify the key drivers of student satisfaction and loyalty in order to improve their services, maintain a high retention rate, and ensure they remain appealing and attractive to incoming students. There is a need to determine the ever-changing service requirements of customers and the

current service quality level provided (Wisner & Corner, 1997). In overall, the more we know about what aspects of higher education matter for the majority of students, the better we are able to improve the effectiveness and quality of educational services.

Nevertheless, one of the most widely used service quality models is the SERVQUAL model, where it has been successfully implemented and assessed in different developing and developed countries in the world. Moreover, the model was used as a basis for service quality evaluation in a large number of higher education institutions of different types and academic fields. On the other hand, and despite the wide implementation of the SERVQUAL model, it has been a matter for critics and discussions by many researchers. The initial SERVQUAL model developed and implemented by Parasuraman et al. (1988), having the famous five service quality dimensions (reliability, empathy, tangibility, assurance and responsiveness) was criticized being not universal in its default scheme, where other researchers went too far with criticizing it as a model which is inapplicable to higher education (Hampton, 1993; Gatfield, 2000; Kerlin, 2000). In addition, other studies dealing with the SERVQUAL model highlighted that the initial model needs an upgrade so it would be able to consider the cultural aspects of the environment where it is implemented. So, a number of upgraded and modified versions of the standard SERVQUAL model have been presented and successfully implemented to assess service quality in the higher education sector in many countries. Moreover, the dimension 'university image and reputation' was highlighted and implemented by many researchers (Sohail and Shaikh, 2004; Abdullah, 2006 a; and Randheer, 2015), along with 'quality of education' and 'quality of student's services support' (Athiyaman, 1997; Hadikoemoro, 2002; Lee et al., 2000; Nguyen and Leblanc, 2001; and Pereda et al., 2007) as key dimensions in the assessment of service quality in the higher education sector.

Based on the comprehensive literature review carried out and presented in this study, and considering the main challenges faced by the Lebanese private higher education institutions and the lack of systematic and valid service quality assessment tools, a modified and upgraded SERVQUAL model is proposed in this work to be employed as a basis for service quality assessment and student satisfaction evaluation in Lebanese private higher education institutions. The proposed model takes into account the three key qualities presented by the Grönroos (1984) and Lehtinen and Lehtinen (1982) models: physical quality (physical campus facilities), interactive quality (interaction with administrative staff, faculty and other students) and corporative quality (university image and reputation) in addition to the recommendations of the Importance-Performance (IPA) model. Moreover, the dimension 'quality of education' and 'quality of student's services support' were highlighted as key service quality drivers in higher education sector by many researchers (Athiyaman, 1997; Hadikoemoro, 2002; Lee et al., 2000; Nguyen and Leblanc, 2001;

and Pereda et al., 2007). As a result, the proposed model adopts the following seven service quality dimensions: ‘university image and reputation’, ‘quality of education’, ‘quality of student’s services support’, ‘campus physical facilities’, ‘students’ social life on campus’, ‘interaction with faculty’ and ‘interaction with administrative staff’.

This proposed study acknowledges the existence of different stakeholders in higher education, but it focuses on the students as the main and primary customer in higher education (Gruber et al., 2010). While each organization should serve their main customer’s needs and desires (Nadiri et al., 2009), the most critical challenge facing educators is developing the most suitable service quality models and identifying the most convenient dimensions for service quality (Ford & Bach, 1997; Palese and Piccoli, 2016).

In this work, a case study of the Lebanese International University (LIU) is considered. LIU is a private university with the highest students’ enrolment in Lebanon, approximately 28,462 students in 2018. LIU was chosen as the main field of application of the current investigation as the researcher is as a full time Lecturer, a course coordinator, school events coordinator and a student advisor at the university. Thus, the investigation attempts to evaluate the service quality at Lebanese International University considering the perspective of its current students. The proposed study will also help Lebanese International University leaders and administrators in tracking and benchmarking their quality performance over time, and thus evaluating the quality of services provided under various circumstances. The findings of this research will also be very useful for other universities in Lebanon along with LIU since the research approach is generic enough, relying on modified universal models. Thus, it could be applied in different contexts and environments.

In the absence of enough studies concerning service quality within the Lebanese higher education sector, this work forms an important basis in the development of the first of its kind service quality assessment tool, which is valuable to ensure proper function and continuous development of higher education institutions in Lebanon. In addition, the work aims at investigating the service quality dimensions and their impact on students’ satisfaction.

Being the case study in our investigation, the study will provide useful feedback and valuable recommendations to improve the holistic framework of service quality assessment in the Lebanese International University and subsequently improve the level of students’ satisfaction. Nevertheless, the proposed model could be implemented to assess service quality in other Lebanese private higher education institutions in order to set guidelines and provide recommendations for leaders, managers, planners, designers, consultants, university professors and administrators within the Lebanese higher education sector. Overall, this work is a major leap in promoting the overall status of higher education in Lebanon, aiming to conserve and even improve its strong position in the Middle East region within

a challenging academic environment.

1.5 Research Problem

Despite the fact that Lebanon has a leading role in education in the Middle East, there is an absence of a reliable and effective service quality assessment tool. Therefore, with the increase in the number of higher education institutions in Lebanon, it is well noted that there is a large gap in the level and quality of services provided in addition to different levels of student's satisfaction among the Lebanese universities. This problem is growing and becoming more visible with the variety of services provided by universities aiming to establish themselves among the top in the country and the region. While various researchers have targeted and investigated ways to improve the performance of the Lebanese higher education institutions from the academic perspective aiming to satisfy students' desires, less has been mentioned on the impact of other variables including, students-staff relationships, university reputation and campus facilities. On the other hand, there is a limited or even in many cases an absence of a constructive feedback from university students in the Lebanese higher education institutions to leaders, managers and administrative staff. This study is considered the starting point in developing a service quality model to evaluate service quality in higher education institutions in Lebanon as there is no such service quality assessment models currently implemented. The work is the first of its kind in the Lebanese higher education sector. As a part of the work, a comprehensive and detailed review of the recent studies investigating different service quality models along with their characteristics and major aspects was conducted. In addition, service quality dimensions presented under various models are presented and discussed, allowing the establishment of good basis to develop an assessment tool for the Lebanese higher education sector. In addition, the work aims at identifying the variables that best describe the key dimensions of service quality in private higher education in Lebanon. In doing so, variables that mostly affect students' satisfaction are considered and further analysed. Moreover, an assessment is carried out to evaluate the relationships among these variables and between service quality and students' satisfaction. The primary research question underpinning the current study is:

What is the most reliable and valid assessment tool for service quality in HEIs in Lebanon, and what are the key drivers of service quality dimensions and their impact on students' satisfaction at HEIs?

1.6 Research Objective

From a holistic perspective, this study deals with the development of a conceptual framework for a service quality model for service quality evaluation in higher education. Moreover, the work aims to

determine the dimensions of service quality which are considered to be the most important from the point of view of students. The specific objectives of the study are:

- 1) To investigate and determine the impact of the service quality dimensions on students' satisfaction at private Higher Education Institutions in Lebanon.
- 2) To examine the relationship between service quality, students' satisfaction and students' loyalty.
- 3) To evaluate and analyse gaps between the level of importance given by students to each service quality dimension and their perception of the current performance.
- 4) To develop a conceptual framework for a service quality model for Higher Education Institutions in Lebanon.

1.7 Organization of the Thesis

The thesis composed of five main chapters as presented in Table 1.1. Chapter ONE presents an overview of the educational environment in Lebanon, including the background of the study, the purpose and value of the research, the research problem and objectives, and the outline structure of the thesis. Chapter TWO provides a comprehensive literature review on several quality concepts such as service definitions and characteristics, service quality, total quality management and the association between service quality and customer satisfaction. Then, a comprehensive literature review of service quality models and dimensions will be discussed focusing on service quality in higher education, presenting a conceptual framework for the proposed service quality model and dimensions and identifying the dependent and independent variables and the research hypothesis. Chapter THREE, covers the research methodology adopted in this study, the research philosophy driving the investigation, the research design, main research questions targeted, in addition to sampling and data collection procedures employed in this study. Chapter FOUR covers the presentation and analysis of data. The main results of investigation are presented, and a comprehensive evaluation and assessment of the attained data is carried out and reported. Finally, Chapter FIVE is a conclusive chapter, with an overall discussion and evaluation along with recommendations and conclusive remarks resulting from the study.

Table 1.1 Thesis organization and chapters

Chapter	Content
Chapter ONE	Overall background, study purpose, research value, research problem and objectives and thesis organization
Chapter TWO	Comprehensive literature review on various service quality models and dimensions
Chapter THREE	Research methodology, philosophy, design, questions, and sampling procedure
Chapter FOUR	Data and results presentation, analysis and evaluation
Chapter FIVE	Conclusions, overall discussion, results evaluation, recommendations, limitations and future work

Chapter 2 Literature Review

2.1 Introduction

In order for the higher education institutions to succeed and flourish, including service quality assessments to evaluate their services' efficiency is a key factor to consider (Sirvanci, 2004). Thus, a systematic and reliable quality assessment of a service delivered by an institution should be on the top of the selected priorities for any higher education institution and different academic practitioners in the area. The most crucial challenge educators have to face is to recognize and implement the most proper model of service quality and the most suitable dimensions for service quality (Ford and Bach, 1997). The Lebanese higher education sector still lacks a valid and reliable service quality assessment tool. Such tool is an indispensable requirement towards attaining a systematic and methodical assessment of the services provided by different institutions along with ensuring a satisfactory quality level to achieve the academic goals.

This chapter will present and discuss several quality aspects such as service definitions and characteristics, service quality, total quality management. In addition, a comprehensive literature review of service quality models and dimensions is provided focusing on service quality in higher education to identify the most suitable and prominent service quality dimensions, which could form the basis for the development of a successful and effective service quality assessment model.

2.2 Service Definition and Characteristics

Generally, there are certain specifications and characteristics that distinguish services from goods. Services are not tangible but quite behavioural products (Rathmell, 1966 & Brochado, 2009), while goods are tangible products that can be formed and transferred (Saser et al., 1978, p. 8). In this regard, service production can be attached to a tangible product. Services can be identified as actions, deeds or performance (Rathmell, 1966 and Parasuraman et al., 1988). Moreover, Kotler & Armstrong (2006) and Lovelock & Wirtz (2007) defined service as an intangible activity or assistance rendered by one party to another without any ownership transferred. Similarly, Grönroos (1990) defined service as an activity or a series of activities agreeing with Kothari (1988) who also defined service as any activity offered to a customer, which is produced and consumed simultaneously. Despite the slight differences in service definitions, there is an agreement in literature regarding the nature and distinctive characteristics of services differentiating it from goods. Products and services are differentiated by many characteristics like inseparability of production and

consumption, intangibility, heterogeneity and perishability (Parasuraman & Grewal, 2000; Kasper et al., 2006; Lovelock & Wirtz, 2007), all of which have important effects on service delivery (Hill, 1995).

The first services characteristic is inseparability which means that services are consumed while they are produced. Thus, inseparability highlights the proportionality and synchronization between production and consumption of services (Carman & Langeard, 1980 and Zeithaml et al., 1985). For example, in the education sector, service quality is created in the delivery process between students and higher education service providers. Nevertheless, customers influence the quality of the service provided (Mills et al., 1983, p. 302) because they are highly involved in the service delivery process. For instance, students failing to do the needed preparations for seminars, working less for assessment and talking during lectures, makes quality management and assessment quite problematic and challenging (Hill, 1995).

The second characteristic of services is intangibility. Caruana et al. (2000), reflect that the most substantial dissimilarity between goods and services is intangibility. While goods can be sensed, felt, smelled, tasted, heard, or touched, services can't. A complementary study was provided by Hill (1995) who stated that service intangibility means that it cannot be mentally sensed. For instance, teaching is classified as highly intangible, because it is a performance rather than an object. However, Oldfield and Baron (2000) and Caruana (2002) stated that in many cases intangible products can be linked with tangible products. An example is the education, being an intangible product, linked to many tangible products including information brochures or booklets.

The third service characteristic is heterogeneity. This means that each service is unique, considering the intensity of the human interaction involved in the delivery of most services. Heterogeneity reflects the potential of the irregularity in service delivery (Zeithaml et al., 1985). The consumer is a part of the service process which makes the service dependant on the consumer's personnel traits and mood. This explains the customers' diverse reactions to the same offered service under different circumstances. In addition, the service also depends on the date and time of the delivery. Brochado (2009) analysed the customer expectation levels of the same service and their perceptions towards it at different times and environments. He highlighted that the customers have different expectations under various circumstances. According to Angell et al., (2008), in the morning period, students have higher abilities to understand lectures compared to their capability in the afternoon sessions. This variation in the students' service quality perception levels leads to a lack of standardisation. Thus, service quality can change significantly from one context to another (Berry et al., 1991).

The fourth characteristic of services is perishability, meaning that services have time constraints

such as flight seats and hotel rooms and they cannot be stored like tangible goods. Onkvisit & Shaw (1991) stated that services are perishable because they are time dependable. Unlike physical goods, services are not storable (Berry et al., 1988) which is considered a limitation that cause intrinsic problems for services (Abdullah et al., 2006a). For example, education is perishable because it is impossible to store regardless of the rise of new technologies such as video recording (Cuthbert, 1996). In this context, Brochado (2009) argued that perishability is not a limitation in education anymore since lectures can be recorded; however, the personal interaction when attending a class cannot be compensated. Thus, the perishability aspect of services is still conserved nowadays, totally or partly.

Considering these characteristics, education has all the aforementioned four characteristics of a service. Educational services are in principle inseparable, intangible, heterogeneous and perishable. These four characteristics have significant effects on the delivery of service quality in HEIs (Hill, 1995). The way educational institutions manage the limitations associated to service and improve its delivery process, are critical to the whole service quality and customer loyalty (Abdullah, 2006a). Brochado (2009) highlighted that offering a high-quality service can boost the customer's loyalty, improve staff productivity and develop customer referrals. According to Hill (1995), the primary customers in educational-targeted services are the students. Hence, higher education institutions should aim at offering their students total and high-level quality (Douglas et al., 2006).

2.3 Total Quality Management

Total Quality Management (TQM) is the process of managing that motivates people to work harder and with higher intelligence because they are capable and more educated (Evans & Lindsay, 2005). TQM is driven by three factors: customer satisfaction, involvement of employees and continuous quality improvement. Each of these factors should be present in the application of TQM so it can work proficiently (Crosby, 1979; Deming, 1986; and Juran and Gryna, 1988). Evans and Lindsay, (2005) proposed that quality is insignificant if it is not customer-focused. So, every employee should be involved in improving quality process and ensure that it is oriented towards customers with the aim to attain high customers satisfaction rates. TQM adds value by improving customers satisfaction, enhancing relationships with suppliers, reducing waste, and improving internal communication, problem -solving and employee commitment and motivation (Juran and Gryna, 1988; Spechler, 1991).According to Juran and Gryna (1988) and Deming (1986) the top management should also be involved in the quality process in order for TQM application to succeed. Therefore, some limitations of implementing TQM may occur and are directly related to the top management and leadership positions. Some of these reasons hindering a proper TQM application includes: lack of knowledge of

the operation's quality importance, bad leadership and lack of valuing service quality importance at top management level, lack of funds and resources, resistance of employee to change and the failure in comprehending quality processes implementation at the middle management level (Venkatraman, 2007).

Although many of the principles of TQM are about tangible products, they can be applied to services as well (Venkatraman, 2007). By the end of the 1980's, businesses and industries started influencing higher education institutions in their use of quality principles creating quality movement in several higher education institutions. The first three higher education institutions to implement TQM principles were Northwest Missouri State University in 1984, Fox Valley Technical College in 1986, and Oregon State University in 1989 (Freed et al., 1997). Venkatraman (2007) stated that implementing TQM principles will improve quality in the higher education sector. In this context, it shall be noted that the quality of education has a direct impact on the students' satisfaction levels (Parasuraman et al. 1988). Total quality strategy is in full agreement with higher education purposes allowing substantial benefits and sustainable added value to the institutions implementing them (Becket & Brookes, 2006). However, some researchers argued that TQM can only be implemented at the administration level in the educational institutions. Chaffe and Sherr (1992) stated that when implementing TQM, higher education institutions tend to apply it only at the administrative level, leaving academic issues behind.

On the other hand, Venkatraman (2007) stated that the implementation of the principles of quality management will incur high costs. However, Crosby's (1979) disagreed with this statement and argued that quality is free, regardless of the implementation field. He defined quality as any product that constantly duplicate its design requirements, leading to lower manufacturing costs through savings in rework, scraps, and warranty fees. Juran and Gryna (1988) agrees with Crosby and added that organisations can lower poor quality costs and keep its competitive advantage.

2.4 Service Quality

Quality is a key factor of success in the delivery of services and attaining customer satisfaction in a modern, sophisticated and competitive world (Ghobadian et al., 1994). According to Samat et al. (2006), in order to face the challenges of the increasing competitive market, quality should be significantly included in the organization's business plan. Therefore, service quality is an indicator of customer satisfaction and organization performance (Lewis, 1990; Seeman & O'Hara, 2006).

In recent decades, a large portion of research studies has attempted to characterize and provide a clear unique service quality definition, however they are yet to produce a common worldwide definition (Becket and Brookes, 2006; Parasuraman et al., 1985). Some researchers took initiatives

to provide their own definition of service quality. Notable definitions in existing literature include: providing a service that complies with the customers' needs (Boomsma, 1992) and providing a service that meets or exceeds customer expectations (Grönroos, 1984; Parasuraman et al., 1985; Lewis 1989). According to Berry et al. (1988) and Crosby (1979), service quality refers to the response to customer specifications, which is the extent to which essential features of the service provided meet the customer's needs (ISO 9000: 2005).

According to Crosby (1979), quality is defined as compliance to requirements, meaning that quality is static. However, key questions arise here: what qualifications and what requirements shall be considered here where the service is to comply with (Palmer et al., 1998). In addition, who is going to define these requirements, the customers or the organization management?

According to Grönroos (1982, 1984); Parasuraman et al., (1985); O'Neil and Palmer (2004); and Abdullah (2006a) quality is a process that supports the disconfirmation theory where customers compare their expectations with their perceptions of the service or the product. So, customers evaluate if the service has succeeded, failed or exceeded the already determined expectation. Based on this definition, service quality was conceptualized, and this resulted in one of the most notable service quality models, SERVQUAL, developed by Parasuraman et al. (1988). Based on the SERVQUAL model, good quality service is achieved when the service is meeting or exceeding what customers expect (Parasuraman et al., 1985). This means that quality is ultimately driven by customer expectations. A large number of researchers reported that the quality specifications set by the customers are more important and have higher impact compared to the ones determined by organization management or service producer (Berry et al., 1984; Feigenbaum, 1991; Grönroos, 2000). This contradicts with what Crosby (1979) reported earlier, regarding quality being compliance to requirements set by organization.

Regarding HEI, according to Hill (1995), it is rational to assume that undergraduates' experiences at high school influenced their expectations of services to be provided by higher education institutions. Undergraduate students may have idealistic expectations which are crucial to be comprehended and understood by higher institutions beforehand (Palacio et al., 2002). Giving students a realistic response by offering some explanations, for example during orientation days, is necessary in order to avoid the gap between students' expectations and the actual service quality experienced (Hill, 1995). As for postgraduate students, their experiences may be influenced by other higher education institutions at which they obtained their undergraduate degrees. In both cases, information about the students' needs and their expectations of college or university services should be collected, reported and considered in case they are not obvious to service providers (Hill, 1995). In Lebanese International university, an orientation week is prepared at the beginning of

each semester to provide detailed information about the expected university services and requirements to new undergraduate and graduate students.

Many factors such as changes in external environment, previous experience, competitive service providers, and experiencing other kinds of services may affect students' expectations and change their needs over time (Zeithaml et al., 1990). This argument of student's changing needs and expectations is supported by many researchers including Grönroos (1984); Parasuraman et al., (1985), Berry et al., (1988); and O'Neil and Palmer (2004). Those researchers assert that quality is a continuing and dynamic standard and not just static as proposed by Crosby (1979). In this regard, quality is all about understanding the changing customer needs (Grönroos, 1984) because they are an essential element in the service delivery (Hewitt et al., 1999). Therefore, it is significant to fully understand and evaluate the customer needs while forming a strategy that fulfils their expectations on the long term.

Moreover, many researchers have agreed that service quality is key factor for any organization's success (Athiyaman, 1997; Berry et al., 1990; Landrum, et al., 2007). Oldfield and Baron, (2000) said that an organization offering high quality service allowing it to stand out and have prominence and more development opportunities compared to its competitors. Douglas et al., (2006) and Smith et al., (2007) also asserted that offering a better service quality level will help organisations keep their customers satisfied while improving staff productivity at the same time. In the context of higher education institutions, Abdullah (2006c) stated that satisfied students are more encouraged to pursue additional credentials at the same educational institution while promoting it to their friends and their relatives (Parasuraman et al, 1988; Cronin & Taylor, 1992 and Berry & Carbone, 2006). Additional investigations (Aldridge & Rowley, 1998; Rowley, 1998) stated that good quality education provides better learning chances. In addition, it was highlighted that satisfaction or dissatisfaction levels strongly affect the student's success or failure of learning.

2.5 Service Quality and Customer Satisfaction

There is a solid relationship among service quality, customer satisfaction, customer's loyalty and organisational productivity (Parasuraman et al., 1994; Caruana, 2002). Crosby (1979), Deming (1986) and Juran and Gryna (1988) highlighted that customer satisfaction shall be the priority for each organization. In the context of higher education, students are the primary customers. So, when students are satisfied, they will most probably recommend their university to their friends and peers. Sometimes, they may also go back to the university to further pursue their post- and graduate studies (Mavondo et al., 2004; Gruber et al., 2010). Students are likely to be satisfied in their university when the service provided fits their expectations, and even will be more satisfied when the service

exceeds these expectations. On the contrary, students are generally dissatisfied with their university when the service quality is below their expectations, which will result in spreading the negative perception among their peers, friends and family (Petruzzellis, et al. 2006).

The literature on services differentiated between service quality and customer satisfaction (Parasuraman et al., 1988; Bitner, 1990 and Bolton & Drew, 1991). Most of the debate has targeted the proper assessment of service quality, and whether service quality or satisfaction must be prioritized. Perceived service quality is assessed by comparing expectations with performance (Grönroos, 1982; and Lewis and Booms, 1983). Rowley (1996) stated that perceived service quality is a kind of attitude that is similar but not the same as satisfaction. When an organization offers service at a high level, which is greater than customer expectations, the service will be reviewed as a high-quality service. On the contrary, providing a service that fails to satisfy the expectation of the customer will be judged as poor quality (Zammuto et al., 1996). However, Cronin and Taylor (1992) and Buttle (1996) have questioned expectations as a standard of assessing service quality. Cronin and Taylor (1992) backed the notion that service quality is an attitude. On the other hand, they claimed that service quality can be evaluated by measuring performance only rather than measuring the gap between expectations and performance.

Also, there is a lot of debate whether customer satisfaction is a result of service quality or its a predecessor. Multiple studies suggested that customer satisfaction is a clear result of service quality (Parasuraman et al., 1988; Cronin & Taylor, 1992, Oliver, 1993; Spreng & Mckoy, 1996; Browne et al., 1998; Gilbert & Horsnell, 1998; 1999 and Ekinci, 2004). However, other studies like Bitner (1990) and Bolton and Drew (1991) argued that satisfaction is a predecessor of service quality. They backed this by asserting that to reach an attitude, service quality needs to accumulate all satisfaction encounters. This was again opposed by Cronin & Taylor (1992) and Ekinci's (2004), who carried out experimental investigations and revealed that service quality yields customer satisfaction. Oliver (1977) believes that customer satisfaction is a concept that is larger than service quality, where the latter only emphasizes on service dimensions. The current work adapts the framework that supports service quality being a predecessor to satisfaction, similar to recent investigations provided by many researchers, including Cronin and Taylor 1992; Oliver, 1993; Spreng and Mckoy, 1996; Browne et al., 1998; Gilbert and Horsnell, 1998; Guolla, 1999; Lee et al., 2000; Ekinci, 2004; and Carrillat et al., 2007.

2.6 Models for Assessing Service Quality

Despite the large block of investigations targeting service quality, there is still no common agreement on the most appropriate service quality model to implement in higher education. In the recent

decades, conceptualization of service quality perceptions has been the most questioned topic in the literature of services marketing (Brady and Cronin, 2001). The main debate about conceptualization is driven by the need to investigate the nature of service quality, whether it is a perception of performance only or disconfirmation paradigm. Along with the nature of service quality, the content and identification of service quality dimensions has been a hot topic for analysis and evaluation. On the other hand, service quality assessments are very complicated processes that operate at several layers of abstraction (Carman, 1990). The most controversial, but widely applied, tool is the SERVQUAL model developed by Parasuraman et al (1988). This model supports the disconfirmation theory (gap model) which states that customers evaluate quality by comparing their expectations of the service offered by the organisation and their perceptions of the actual performance of the received service. Nevertheless, Cronin and Taylor (1992) and Abdullah (2006) have developed two models based on performance only; service performance (SERVPERF) and higher education performance (HEDPERF) models respectively. They claim that their models address SERVQUAL's limitations and provide a more feasible implementation potential. Considering the SERVPERF and HEDPERF models, the researchers believe that service quality should only be defined and linked to performance. A large number of service quality models have been presented in the literature in the recent decades. The sections below provide an overview of the most popular and widely used models, along with a thorough description of the characteristics and dimensions of each model.

2.6.1 The Grönroos' Model and the Lehtinen and Lehtinen Model

One of the first investigations in the field of service quality assessment was presented by Lehtinen and Lehtinen (1982), who proposed a service quality model with three major dimensions: interactive quality, physical quality and corporative quality as shown in Fig. 2.1. Interactive quality highlights the interaction between the customer and the various provided services, whereas physical quality refers to the tangible nature of the service provided. In addition, the image perceived by customers targeted by the service provider characterizes the corporative quality.

Building on this initial model by Lehtinen and Lehtinen (1982), Grönroos (1984) developed an upgraded model that defines service quality as the gap between expected service levels and customer perceptions of the delivered service. The model, depicted in Fig. 2.2, majorly divides customer perceptions into technical quality, dealing with “what” service is provided, and functional quality dealing with “how” this service is being provided. Grönroos identified a third quality dimension, being the image of the service provider, which moderates both the technical and

functional aspects of quality to arrive at a perceived level of service. With respect to an organization's image, the more positive and brighter the image is, the less impact a mistake has on the perception of service quality (Grönroos, 1990). Nevertheless, it has been highlighted that the level of the service quality perceived is governed mainly by the functional and technical quality along with the difference between the expected and perceived service.

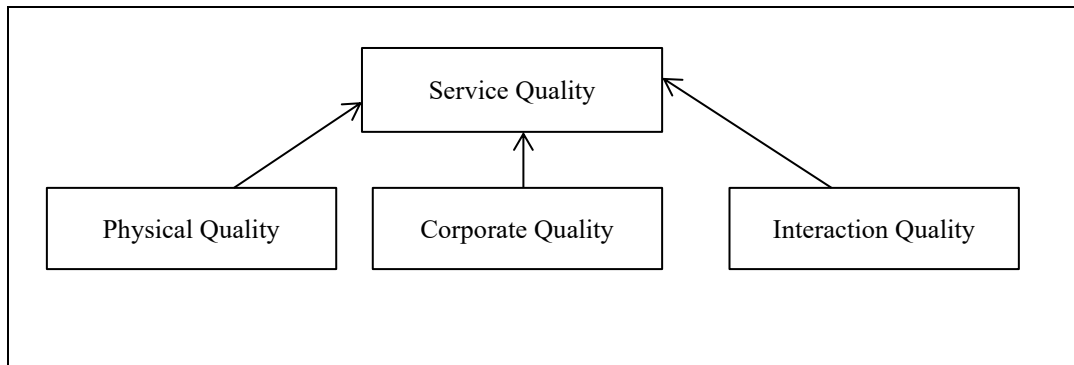


Figure 2.1 Lehtinen and Lehtinen Model (1991, p.289)

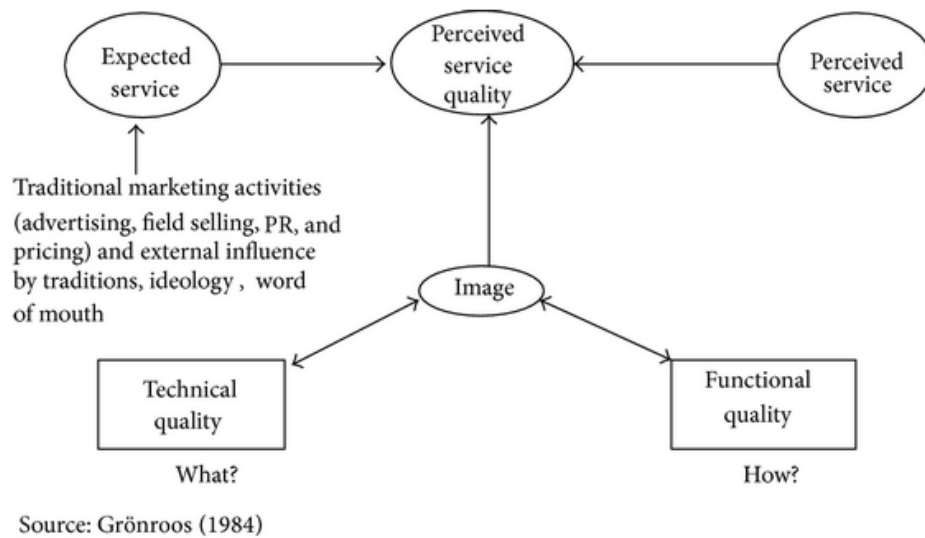


Figure 2.2 Nordic Model (Grönroos, 1984, p.40)

2.6.2. SERVQUAL Model

The SERVQUAL model, developed by Parasuraman et al. (1988), is one of the most widely used service quality models and remains as one of the most controversial models up to date. In their model, Parasuraman, et al. (1988) proposed a more precise criterion for assessing service quality and developed a measurement scale for service quality called SERVQUAL. In the development of SERVQUAL, they supported the gap model that is driven by quality being evaluated by customers.

This evaluation is done through recognizing their expectations of the provided service and comparing them to their perception of the actual performance of the delivered service. Qualitative interviews of 12 focus groups composed of customers and 14 executives in 4 different service businesses were performed to develop the SERVQUAL gap model with the well-known ‘Q=P-E’ equation where:

- Q: the quality
- E: the customers’ expectations
- P: the customers’ perception of the service provider’s overall performance.

Thus, customer satisfaction is directly linked to the quality of the service delivered. As shown in Fig. 2.3, five of the gaps (P-E) are defined in the SERVQUAL model (Parasuraman et al., 1985). Gap 5 represents a dependent variable on the consumer side and the other 4 gaps represent independent variables on the service provider side. A positive gap indicates customer satisfaction, and the higher the gap, the higher the satisfaction rate.

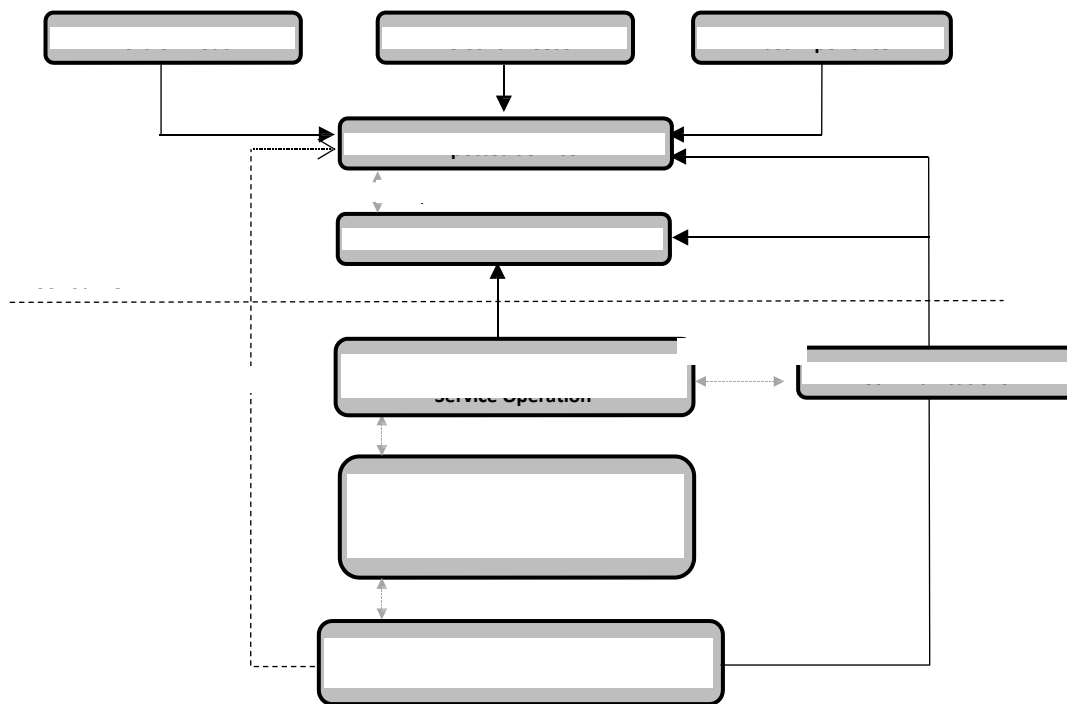


Figure 2.3 SERVQUAL model- Parasuraman et al. (1985)

The five defined gaps in the SEVQUAL model are:

Gap 1: Consumer expectation versus management perception: This gap is between what the customers expect of quality and the perception of the organization’s management. Organisation’s

management view for customers' expectations sometimes not meet the actual expectations of customers (Asubonteng et al., 1996; Parasuraman, 1988; and Carrillat et al., 2007). Saying that, the reason that the customers interpretation and the reality do not match is the lack of marketing research done by the service company in identifying the needs of their customers. Nevertheless, meeting customers' expectations is questionable and unlikely if the supplier does not recognize or understand these expectations (Gabbott and Hongg, 1998).

Gap 2: Management perceptions versus the specifications of service: This gap highlights the difference between management perception and the real designing of service specifications. Even when the management recognizes the customers' needs and expectations, it might be difficult to transform its intentions into service quality specifications. This is mainly due to the limited personnel competences in dealing with such situations, or economic issues that could hinder meeting customers' expectations.

Gap 3: Service specifications versus service delivery: This gap evaluates the difference between service specifications as an abstract description, and the implementation and delivery of the actual service. Although the design of service quality specifications could be accurate, the process of developing a deliverable service may fail due to different reasons. This includes employees' low performance, production problems, financial reasons, management and administrative issues, etc. According to Parasuraman et al., (1985), organisations can try to reduce this gap by implementing a consistent quality enhancement process with activities aiming to check service principles against the true delivery on a continuous manner.

Gap 4: External communication to consumers versus service delivery: This gap addresses the miscommunication of services quality provided to the customers by an organisation. For example, an organization continuously praising its service quality would lead to high and unrealistic expectations by its customer and may end up with a large gap between expectations and real service delivery (Parasuraman et al., 1985).

Gap 5: Expected service versus perceived service: This gap deals mainly with the difference between customers' expectations and the perception of the delivered service. It is the result of the existence of one or more of the preceding four gaps. When this gap arises, managers should focus on addressing or eliminating the other four gaps, so they can eliminate and avoid having Gap 5 (Ekinci, 2004). In addition, it has been highlighted that the expectation's level plays a vital role in service evaluation (Lacobucci et al., 1994). According to customers, this gap is the perfect service delivery measure because it is driven by their expectations and real case perceptions. Also, Parasuraman et al., (1985) linked Gap 5 with service quality dimensions as an evidence of how customers employ all dimensions in their evaluation.

Considering the current situation of the Lebanese higher education and the lack of constructive feedback from university students to leaders, managers and administrative staff, it is obvious that the five gaps presented above are all present with a considerable margin with a large impact in the case of the Lebanese higher education sector. Obviously, the major result is a well-established imbalance between what is offered by the Lebanese universities in terms of services and activities, and what is expected by the Lebanese students in fast growing and demanding academic sector. In addition, the job market is becoming more competitive, where students are expected to have high level of skills and knowledge, which in turn requires high levels of services and training activities delivered by the higher education institutions.

However, the expectations-gap model has a major drawback, mainly its lack of considering the dynamic nature and impacts of expectations, and that they continuously progress and change over time. Initially, Parasuraman et al., (1985) identified 10 dimensions of service quality: Access, Communication, Competence, Courtesy, Credibility, Reliability, Responsiveness, Tangibles, Security, and Understanding. Each of these dimensions is described as follows:

- 1- Access: service is approachable and usable at certain times and places
- 2- Communication: service's explanations are comprehensible
- 3- Competence: employees performing the service are skilful and knowledgeable
- 4- Courtesy: employees' manners being respectful, helpful and forthcoming
- 5- Credibility: organisation cares about customers' best interest by maintaining a good reputation with trustworthy employees
- 6- Reliability: being able to perform the service precisely under different conditions
- 7- Responsiveness: the employees' readiness to provide improvised and direct services
- 8- Tangibles: physical facilities of the service are satisfactory and suitable
- 9- Security: the environment where the service is provided is safe and peaceful
- 10- Understanding: employees have high understanding for customers' needs

In a later study, Parasuraman et al. (1988) correlated those 10 dimensions as shown in Fig. 2.4, and developed 5 dimensions of service quality into the SERVQUAL model as:

1. Reliability
2. Empathy: caring and individualized attention provided to customers
3. Tangibility

4. Assurance: related to manners and knowledge of employees
5. Responsiveness

Along with these five dimensions, Parasuraman et al. (1988) developed 22 corresponding statements. There were four statements for each of Tangibles, Responsiveness and Assurance dimensions, and five statements for Reliability and Empathy. The final version of the SERVQUAL tool was widely implemented and applied in various fields and it was reported to have good reliability and validity (Bojanic and Rosen, 1994).

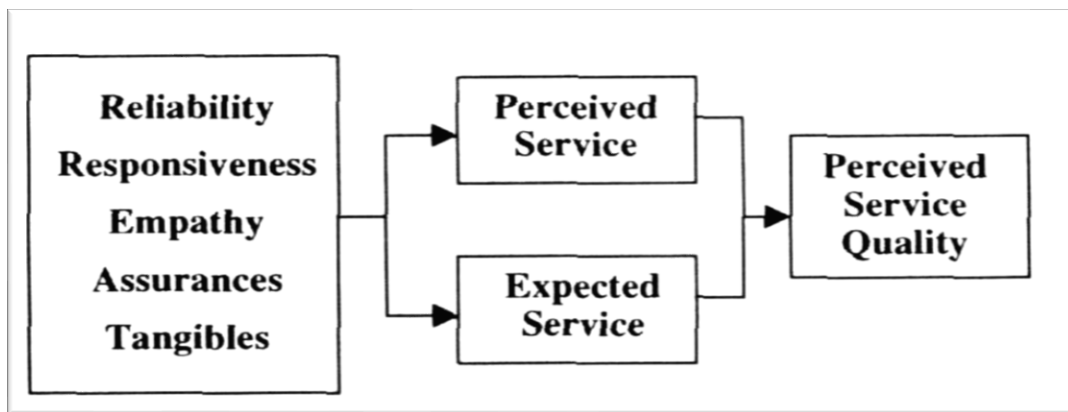


Figure 2.4 SERVQUAL Model- (Parasuraman et al., 1988)

2.6.3 SERVQUAL Model Implemented in Higher Education

In the recent decades, a large number of investigations have been carried out aiming to assess the service quality in the higher education sector using the SERVQUAL model. This section will summarize the most recent studies which have implemented the SERVQUAL model in various educational sectors all around the world.

In a recent study, Moosavi et al. (2017) conducts a comprehensive review and analysis of the quality of educational services in Iran, considering the students' point of view. After completing an analysis of 18 various research studies, they reported that the SERVQUAL model is the most effective model to be used for assessing and measuring service quality in the educational sector. In addition, they concluded that the overall quality of the current educational services in Iran is much lower than the expectations of the students.

In another study, Asefi et al. (2017) employed the SERVQUAL model to assess the gap between student expectations and perceptions of the service quality in the school of Nursing and Midwifery in Shahrekord University of Medical Sciences in Iran. A SERVQUAL questionnaire

was considered using 5 dimensions; Assurance, Responsiveness, Empathy, Tangibles and Confidence. An overall negative gap was reported between the students' expectations and perceptions of service quality. An interesting outcome was reported as the Tangibles dimension resulting in the largest gap.

Moreover, Legcevic (2009) performed a study aimed at investigating student perceptions and their expectation of service quality at the Law Faculty of Osijek University in Croatia employing the SERVQUAL model. Legcevic reported significant differences in the gap between perceptions and expectations among the 5 model dimensions. They concluded that student expectations exceeded their perceptions of the service quality provided.

In assessing undergraduate students' perceptions of service quality, Polycarpou (2007) developed an adapted SERVQUAL instrument for conducting a case study of one of the leading colleges in Cyprus. The SERVQUAL 5 dimensions with the 22 measurement items were considered as a basis for the questionnaire. The author reported a wide gap in 20 out of the 22 items, where the Tangibles dimension had the smallest gap and the Empathy dimension had the largest gap.

Al-Alak and Alnaser (2012) studied the interdependencies and relationships between the 5 SERVQUAL dimensions of service quality, considering the undergraduate students' satisfaction at the Business Faculty at University of Jordan. In their investigation, Assurance and Reliability were found to be the most important service quality dimensions in the context of the higher education sector in Jordan.

In another study, Yousapronpaiboon (2014) investigated service quality in the Thailand higher education sector. A case study of a private university in Thailand was considered, and an investigation was carried out using the 5 dimensions of the SERVQUAL instrument; Reliability, Assurance, Tangibles, Empathy and Responsiveness. The SERVQUAL questionnaire was distributed to 350 undergraduate students. Based on the study results, the author reported that higher education in Thailand does not meet the expectations of the students at the undergraduate level. This conclusion was based on a negative gap reported between the students' perceptions and expectations for the 5 dimensions employed. To reduce the gap, an upgrade in the university facilities and equipment was recommended by the investigator.

In addition, Zeshan et al. (2010) selected 8 business schools in Pakistan to serve as a case study to assess service quality employing SERVQUAL. Based on the study outcomes, they reported an overall low level in all schools, concerning all the service quality dimensions.

Recently, a study by Owino (2013) used a 56-item scale instrument based on performance only by consolidating the 5 dimensions of SERVQUAL into 2: human elements (Reliability,

Responsiveness, Assurance and Empathy) and non-human elements (Physical Evidence). Two other dimensions were introduced and tested; core service and service blueprint, where the corporate image was considered as a moderator.

2.6.4 Criticism of SERVQUAL

Even though the SERVQUAL model has been widely implemented and applied by many researchers, still the model has been heavily criticised in some studies. Buttle (1996) questioned expectation as a suitable paradigm in service quality assessment. Babakus and Boller (1992) and Cronin and Taylor (1992) also stated that the discrepancies between expectations and perceptions do not provide any additional value to the performance only instrument. In addition, Gabbott and Hongg (1998) claimed that even perfect service falls short of meeting customer expectations, resulting in a negative gap, which leave the SERVQUAL model inapplicable as it relies on the gap evaluation.

Another criticism addressed to the SERVQUAL model was concerning its questionnaire's structure. In the initial SERVQUAL model, each perception and expectation have the same 22 statements giving the questionnaire a sum of 44 obligatory questions (statements). Some researchers claimed that having to answer forty-four statements may require long time and may result in inaccurate responses (Carman, 1990; Bitner et al., 1997). In addition, the nature of the statements provided was questioned, as thirteen statements were positively phrased while nine statements were negatively phrased (Babakus and Boller 1992). In principle, Parasuraman et al. (1988) applied the negative statements to avoid orderly responses. Several researches including Likert (1932); Mehrens & Lehmann, (1983); Rossi et al., (1983) agreed with the critique of the statements' nature, and they recommended the use of statements with opposite wording. Still this approach was described by some researchers as complicated to the respondents (Wason & Johnson-Laird, 1972). On the other hand, Chamberlain and Cummings (1984) found that the reliability score was higher when all positively worded statements were used. Parasuraman et al. (1991) responded to these criticisms and rephrased all the negative statements in his model to positive statements.

Nevertheless, Carman (1990) discovered that SERVQUAL was consistent in many areas but required some changes in implementing the tool to a certain setting. Some studies also believed that the five dimensions are not steady through all service industries (Cronin and Taylor, 1992; Brown et al., 1993; Chen et al., 2006; Smith et al., 2007). For instance, Cuthbert (1996) stated that the dimensions of service quality recognized in the SERVQUAL model are inappropriate for service quality measurement in higher education. They recommended the use of a better tool within the Higher Education sector which will characterize and respond well to the sector interactions and

needs. Parasuraman et al. (1991) agreed that the SERVQUAL model requires modification in order to be applied in specific contexts and environments. According to Parasuraman et al., (1994), SERVQUAL offers a simple skeleton for assessing service quality. But they recommended that the questions in SERVQUAL instrument need to be designed to fit the specific service industry. This could be done through using terminology that the respondents can relate to (Parasuraman et al., 1991), as the education sector terminology is totally different compared to hotels or the banking sector.

Concerning the higher education sector, various studies have modified the SERVQUAL model, stating that the standard model structure is not entirely applicable to the education sector (Hampton, 1993; Gatfield, 2000; Kerlin, 2000). Moreover, most of the researches are driven by how students in developed countries like the United States, United Kingdom, Australia, and New Zealand perceive quality. However, the environmental differences between developing and developed countries can influence service quality determinants suitable for students of these countries (Malhotra et al., 1994). Imrie et al. (2002) indicated that SERVQUAL model needs to be modified depending on the culture where it will be implemented. Considering, these critiques and comments concerning the SERVQUAL model and its applications, it is clear that the initial SERVQUAL model as it is, is not appropriate for assessing service quality in the Lebanese higher education sector. Thus, a major work is needed in this regard, aiming to develop a convenient model where it fits with the needs and specifications of the Lebanese higher education institutions.

2.6.5 Other Service Quality Models Applied in Higher Education

In addition to the widely implemented SERVQUAL model, various models have been developed and implemented to assess service quality in the context of higher education. A service performance model (SERVPERF) was developed by Cronin and Taylor (1992), derived from SERVQUAL initial model, using all 5 major dimensions but concentrating solely on customers' perception, denoted by (P) in SERVQUAL, and ignoring expectations (E). The SERVPERF model has been adopted by different researchers (Oliver, 1993; McAlexendder et al., 1994). Based on their feedback, they claimed that measuring the perception of the customer using performance only (SERVPERF model) outperforms the perception-expectation gap model (SERVQUAL model). However, Parasuraman et al. (1996) questioned SERVPERF practicality. This is against what Taylor and Cronin's findings who stated that performance-based measure (SERVPERF) has the edge compared to SERVQUAL measure. According to Parasuraman et al. (1996), a perfect service quality scale is psychometrically correct and diagnostically vigorous enough to give insights to the managers for curative conducts in the event of shortcomings. The authors stated that managers are more

interested in the identification of shortfalls and the gaps between customers' perceptions and expectations than the accurate identification of perception of service quality only.

In their study, Abdullah et al. (2006a) modified the SERVPERF model, so it could fit more the higher education context. Thus, they have developed an upgraded version based on performance-only measures, called the higher education performance (HEDPERF) model. The model has 2 sections; the first targets the participants information and profile and the second deals with various aspects of higher education services. They identified 6 dimensions being suitable for the Malaysian higher education sector: reputation, understanding, academic aspects, non-academic aspects, program issues and access.

Considering the different service quality models developed by various researchers, Brochado (2009) compared the performance of different service quality models including HEDPERF, SERVPERF, and importance-weighted SERVQUAL. In terms of the reliability and validity criteria, the author reported that the HEDPERF and SERVPERF models yield the highest scores.

Nevertheless, a combined HEDPERF-SERVPERF model was developed in 2006 by Abdullah (2006b). The dimensions of the new model included academic aspects, non-academic aspects, empathy and reliability. However, Abdullah (2006c) compared the three models (HEDPERF, SERVPERF and HEDPERF-SERVPERF) and found that the HEDPERF model was a better fit for the higher education sector. However, most of Abdullah (2006) study was concentrated on the Malaysian higher education institutions only, and thus limits the generalization of his research's result across the overall context of higher education. Therefore, his studies require additional investigation and testing to evaluate the feasibility and validity of the HEDPERF model as an effective model for the higher education sector.

Moreover, Martilla and James (1977) proposed the Importance-Performance Analysis (IPA) model derived from the SERVQUAL model. Following some criticism, this initial IPA model was later adjusted by O'Neil and Palmer (2004) in order to suit the education sector. Despite the fact that the IPA model is based primarily on performance, it also considers the priority that the customers give to each of the service features. Thus, it relies on what customers perceive as being important and attempts to categorize the importance of service quality dimensions with respect to the customers. In the regard, the importance aspect is what makes IPA model more convenient because it depends on consumers' perceptions of what is important. In addition, service quality was evaluated largely using importance or performance paradigm (Ennew et al., 1993). Unlike SERVQUAL model, the scale was customized to a five-point scale rather than a seven-point scale. According to Cox III (1980) there is no single number of points for a scale that is appropriate for all

situations or under all circumstances. However, according to Cronbach (1951), the seven-point scale has proved to be more reliable as it allows for a wider differentiation of responses (Finn, 1972; Masters, 1974; Alwin, 1992). For this reason, the seven-point scale will be implemented in this study.

Compared to the previous models, O'Neil and Palmer (2004) considered the IPA model more convenient for higher education, as past, current and future student perceptions of actual performance can be correlated. IPA develops research results to look like a graph to aim at exact service improvement, considering that the quality cannot be improved unless it is regularly measured (Reichheld & Sasser, 1990). The model dimensions are divided into 4 quadrants as shown in Fig. 2.5, where each quadrant characterizes simultaneous relations between importance and performance, being either high or low. Low ratings are not expected to have a big impact on the overall perceptions, but higher ratings are most probably going to have a crucial role in determining customer satisfaction (Barsky, 1995). Items in Quadrant 1 need exceptional attention since they rank high in importance but rate low in performance. In Quadrant 2, both importance and performance are ranked highly which means that keeping up the good work is crucial at this point. Items in Quadrant 3 are rated lower in both importance and performance. These services are not high priority which requires no additional resources to be assigned to them. Items in Quadrant 4 are rated high in performance, but low in importance. This indicates resources overloading. This also explains the need of having to move the resources that are specifically assigned to these items to a different aspect.

Therefore, IPA is considered a good management tool that is used to increase market opportunities (Raymond & Chu, 2000). In recent years, IPA model has become increasingly popular due to its simplicity, applicability and diagnostic value (Joseph and Joseph, 1997; Ford et al., 1999). Moreover, IPA was widely applied in several contexts and areas including hospitality and tourism industry, health and education. Nevertheless, IPA was highlighted as a part of a holistic marketing research technique used to analyse the consumer attitudes towards the products or service (Kuo et al., 2011; Lee & Chen, 2015).

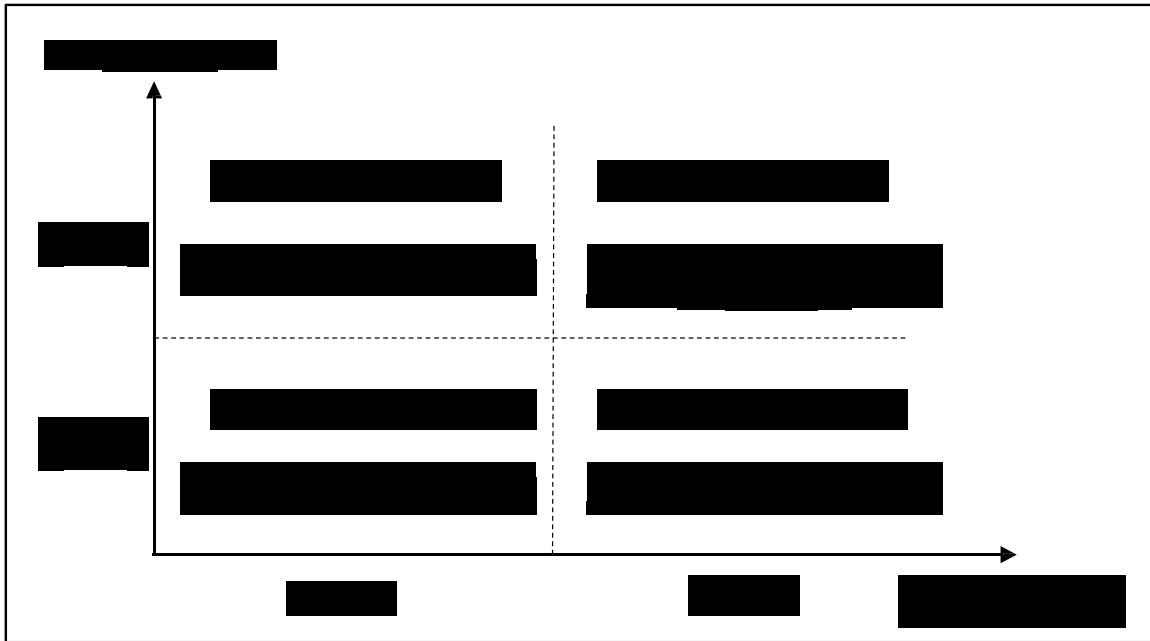


Figure 2.5 IPA model- Martilla and James (1977)

To overcome the weaknesses of the SERVPERF and HEDPERF models, another model was developed by Sultan and Wong (2010), as the performance higher education (PHED) model. PHED model was implemented to measure the service quality performance at different Japanese universities where only international students participated. Based on the findings, the researchers identified 8 service quality dimensions being the most convenient for the context of the investigation: capability, dependability, effectiveness, efficiency, semester and syllabus, competencies, assurance and unusual situation management. However, the study findings could not be generalized as the survey was limited to only international students.

In addition, a recent study by Randheer (2015) adjusted the HEDPERF model by introducing culture (CUL) as an additional dimension of the service quality model, in addition to the 6 dimensions in HEDPERF. As the Arab Gulf cultural aspects and traditions are rooted into the educational system with a very high impact, Randheer (2015) considered and implemented the Arab cultural aspects within the existing HEDPERF model to measure service quality in higher education for 750 business students in 5 different Saudi Arabian universities. They found that the CUL-HEDPERF model with its 7 dimensions: culture, reputation, understanding, access, academic aspects, non-academic aspects and program issues, is more suitable than HEDPERF and SERVPERF models in assessing service quality in higher education institutions in the Gulf region.

Analysing and evaluating the above models developed for service quality assessment, none of these models is completely suitable for service quality measurement within private higher education

institutions in Lebanon. With the urgent need for such instrument within the Lebanese higher education sector, modifying an existing model, or proposing a new model by combining two or more models together appears to be more reliable in obtaining a more convenient model.

2.7 Service Quality Dimensions in Higher Education

A large block of studies has been presented in the literature aiming to investigate, characterize, assess, evaluate and discuss service quality dimensions in the context of higher education. Peters et al. (1982) defined quality in education as excellence, whereas Crosby (1979) stated that quality in education is directly related to the output of compliance with set goals. In addition, Holdford and Patkar (2003) defined service quality in educational environments as an assessment of the services offered to the students in their educational journey.

Defining and characterizing service quality dimensions is a major challenge, and there is extensive debate surrounding the nature, specifications and number of dimensions (Parasuraman et al., 1985 and Strombeck & Shu, 2014). A major issue linked with service quality is the number of dimensions that compromise this quality. Sometimes the same researchers, after revising and testing their model validity and reliability, end up with different number of dimensions compared to previous studies. Some studies summarized these into only two dimensions (Cronin, 1992), while other studies listed three dimensions (Lehtinen & Lehtinen 1982), four dimensions (Gatfield, 2000; Angell et al., 2008), five dimensions (Parasuraman et al., 1988; ;Carmen, 1990; Sangeeta et al., 2004), six dimensions (Cronin & Taylor, 1992; Sohail & Shaikh, 2004; Abdullah, 2006a), seven dimensions (Hampton 1993; Randheer, 2015), eight dimensions (Owlia & Aspinwall 1997; Ford et al., 1999), nine dimensions (Joseph & Joseph, 1997; Sultan & Wong, 2010), ten dimensions (Athiyaman, 1997; Joseph & Joseph ,1997; Parasuraman et al., 1984) and some have even reached a total of nineteen dimensions (Carney, 1994). Cultural diversity, demographic variables and personal factors all contribute to the variation in service quality dimensions in various studies, considering the location, situation and environment targeted. Another factor leading to such variation is the difficulty to generalize in many studies due to inappropriate sampling methods and unrepresentative sample sizes.

In overall, culture influences the consumers' expectations for each of the dimensions of service quality (Donthu and Yoo, 1998). With the high levels of concern that the Gulf cultural aspects and characteristics are rooted into the educational system as well as higher education, Randheer (2015) considered culture as a dimension of service quality model in addition to HEdPERF (2006) six dimensions. In upgrading the HEdPERF model, Randheer included the Arab (Gulf) cultural aspects within the existing model. The study concluded that CUL-HEdPERF and its seven dimensions,

culture, reputation, academic aspects, non-academic aspects, understanding, program issues, and access is more suitable compared to other models in higher education in gulf region.

A study done in Egypt by El Rawas and El Sagheir (2012) employed the SERVQUAL model, but they suggested that the “empathy” dimension should be replaced by the “image” dimension in when the SERVQUAL model is to be used in an Arab country. This is supported by their assertion that the image of the university is more significant to students’ evaluation for service quality in Egyptian higher education institutions while “empathy” dimension is not. The finding of this study was supported by Azoury et al. (2013) who conducted similar investigation in Lebanon and by Randheer (2015) study conducted in Saudi Arabia.

In a recent study presented by Sohail and Shaikh (2014), 310 Saudi Arabian students (males only) pursuing business studies were surveyed in the public King Fahd University of Petroleum and Minerals. The authors identified six major service quality dimensions: physical evidence, responsiveness, curriculum, contact personnel, reputation, and access to facilities. Physical environment such as lighting, classrooms, layout, appearance of buildings and grounds and the general hygiene contributed tremendously to students’ evaluation for service quality. On the other hand, ‘contact personnel’ was the most influencing factor in student’s evaluation of service quality. The generalization of the study outcomes is limited because the sample was taken from one public university, with one gender (males) considered and only business students surveyed. Students of different majors or of different gender, might most probably have different satisfaction levels (Abouchedid and Nasser, 2002). In this regard, several studies found that there is a significant relationship between the students’ gender and the perceived service quality (Soutar & McNeil, 1996; Oldfield & Baron, 2000; Umbach & Porter, 2002; Tessema et al., 2012). It was highlighted that females have a tendency to both expect and perceive higher levels of service quality than males (Ruby 1998).

In their investigation, Fernandes et al., (2013), employed a national student survey (NSS) with a sample of 187 graduate students at a British university campus in UAE (United Arab Emirates). Teaching quality and the fundamental academic variables of the programme had the most significant impact on students’ satisfaction. On the other hand, factors including academic feedback, IT resources and library had no substantial impact on students’ satisfaction. The study was limited to one university in UAE and therefore it cannot be generalized even to other universities inside UAE. This claim is supported by the fact that generally UAE universities adopt different educational systems (i.e. American, British, and French).

Another study in this regard was conducted by Senthilkumar and Arulraj (2010), where they recognized three major dimensions in Indian universities: exceptional resources, good faculty and a

variety of disciplines. The authors used a convenience and judgmental sampling although the purpose of their study was to develop a new model to measure service quality in higher education in India. Therefore, their sampling methods limits the generalization of their study findings.

Douglas et. al., (2006) conducted a study in Liverpool John Moores University's in UK- Faculty of Business and Law. They found that the most significant service quality dimensions are the ones related to teaching and learning, while the dimensions related to the physical facilities are the least important. However, Douglas et al., (2006), covered only one university in UK, and the study was limited to only students studying a business major. Although students of different majors have different satisfaction levels (Abouchedid and Nasser, 2002), the authors of this study didn't claim that the results could be generalized. Instead, they asserted that the findings are only targeting business students' satisfaction at Liverpool John Moores University and not to be generalized across all UK universities.

Considering this debate surrounding service quality dimensions in higher education and the large number of investigations discussing dimensions of various natures and specifications, Table 2.1 summarizes the service quality dimensions highlighted and employed in major studies targeting service quality assessment in higher education in various countries.

Table 2.1 Service Quality Dimensions Reported in the Literature

Study	Country of Investigation	Service Quality Dimensions
Abari et al. (2011)	Iran	Guarantee, Sympathy, Facilities, Responsibility and Reliance
Abdullah (2006a)	Malaysia	Reputation, Access, Program issues, Academic aspects, Non-academic aspects and Understanding
Aldridge and Rowley (1998)	United Kingdom	Services and facilities for students, Equal opportunities, Teaching and learning, Feedback and complaints, Communication, Consultation, Teaching and learning support, Disability and environment and Teaching and learning development
Annamdevula and Bellamkonda (2012)	India	Administrative services, Campus infrastructure, Support services, Teaching and course content and Academic facilities

Asefi et al. (2017)	Iran	Assurance, Responsiveness, Empathy, Tangibles and Confidence
Athiyaman (1997)	Australia	Quality of Teaching, Recreational facilities, Library services, Availability of staff for student consultation, Computing facilities, Class size, Student workload and Level of difficulty of subject content
Carman (1990)	United States	Assurance, Responsiveness, Reliability, Tangibles and Empathy
Cronin and Taylor (1992)	United States	Assurance, Responsiveness, Reliability, Tangibles, Empathy and Customer Satisfaction
Gatfield (2000)	Australia	Guidance, Academic instruction, Recognition and Campus life
Hadikoemoro (2002)	Indonesia	Academic services, General attitudes, Readiness and Attentiveness, Fair and Impartial and Tangible
Hampton (1993)	United States	Quality of education, Social life-personal, Teaching, Campus facilities, Student Advising, Social life-campus and Effort to pass courses
Joseph and Joseph (1997)	New Zealand	Academic reputation, Program issues, Word of mouth, Time, Location, Program aspects, Campus opportunities, Family, Physical aspects and Peer influence
Lee et al. (2000)	Korea	Overall impression of the university and Overall impression of the education quality
Nguyen and Leblanc (2001)	Canada	Administration, Responsiveness, Curriculum, Physical evidence, Access to facilities, Functional quality, Technical quality
Owino (2013)	Kenya	Human elements, Non-human elements, Core service, Service blueprint and Corporate image
Parasuraman et al. (1985)	United States	Access, Courtesy, Communication, Tangibles, Responsiveness, Reliability, Credibility, Security Understanding and Competence

Parasuraman et al. (1988)	United States	Assurance, Reliability, Empathy, Tangibles and Responsiveness
Pereda et al. (2007)	United Kingdom	Reliability, Tangibility, Sufficiency of resources and Quality of faculty
Randheer (2015)	Saudi Arabia	Reputation, Access, Program issues, Academic aspects, Non-academic aspects, Understanding and Culture
Sohail and Shaikh (2004)	Saudi Arabia	Reputation, Access to facilities, Contact personnel, Physical evidence, Curriculum and Responsiveness
Sultan and Wong (2010)	Japan	Assurance, Dependability, Effectiveness, Competencies, Capability, Efficiency, Unusual Situation Management, Semester and Syllabus
Yusof et al. (2012)	Malaysia	Reliability, Assurance, Empathy, Responsiveness, Tangibles, Communication, Knowledge/ Expertise, Systems/Secondary Services, Social Responsibility and Self-Development
Lodesso et al. (2018)	Africa	Reliability, Assurance, Empathy, Responsiveness, Tangibles
Mohammed (2014)	Mogadishu	Reliability, Assurance, Empathy, Responsiveness, Tangibles
Khan and Fasih (2014)	Pakistan	Reliability, Assurance, Empathy, Responsiveness, Tangibles
Mang'anyi and Govender (2017)	Kenya	Reputation, Access, Program issues, Academic aspects, Non-academic aspects and Health Service Aspects

2.8 Proposed Conceptual Framework

Building up on the large body of research reviewed and analysed in the previous sections, this study proposes a conceptual framework for a service quality model for quality evaluation in the Lebanese higher education sector. The framework proposed is based on the initial service quality model developed by Parasuraman et al. (1985), in addition to considering the three qualities highlighted in

Gronroos (1983) and Lehtinen and Lehtinen (1982) models: Physical Quality (Campus Physical Facilities), Interactive Quality (Interactions with Staff, Administration and other students on Campus) and Corporative Quality (University Image and Reputation). Nevertheless, the current framework aligns well with the recommendations of the Importance-Performance Analysis (IPA) model. A large number of researchers have recommended and employed 'Quality of Education' and 'Quality of Students Services Support' as two key dimensions in the assessment of service quality in the higher education sector (Athiyaman, 1997; Hadikoemoro, 2002; Landrum et al., 2008; Lee et al., 2000; Nguyen and Leblanc, 2001; and Pereda et al., 2007).

As a result of a through extensive literature review of Service Quality literature review of recent investigation for Service Quality, the proposed model depicted in Figure 2.6, is built up with seven service quality dimensions as follows:

1. Quality of Education
2. Quality of Students Services Support
3. Campus Physical Facilities
4. University Image and Reputation
5. Students Social Life on Campus
6. Interaction with Faculty
7. Interaction with Administrative Staff

The SERVQUAL model five service quality dimensions: tangibility, reliability, responsiveness, assurance and empathy are highlighted as captions of the seven dimensions suggested, where 10 statements out of the SERVQUAL twenty-two Statements were used in the proposed instrument as shown in appendix page 175, 176 and 177. In the absence of such studies within the Lebanese higher education context, this work forms an important basis to develop an effective service quality assessment tool which is valuable and beneficial in higher education institutions in Lebanon.

The need for such framework is driven by the challenges faced by the private higher education institutions in Lebanon and the absence of systematic and effective service quality assessment tools. In this conceptual framework, the independent variable is the service quality and the depending variable is the customer satisfaction. Saying that, the independent variable is a precursor to the dependent variable. Thus, this study will examine the casual relationship between service quality and customer satisfaction.

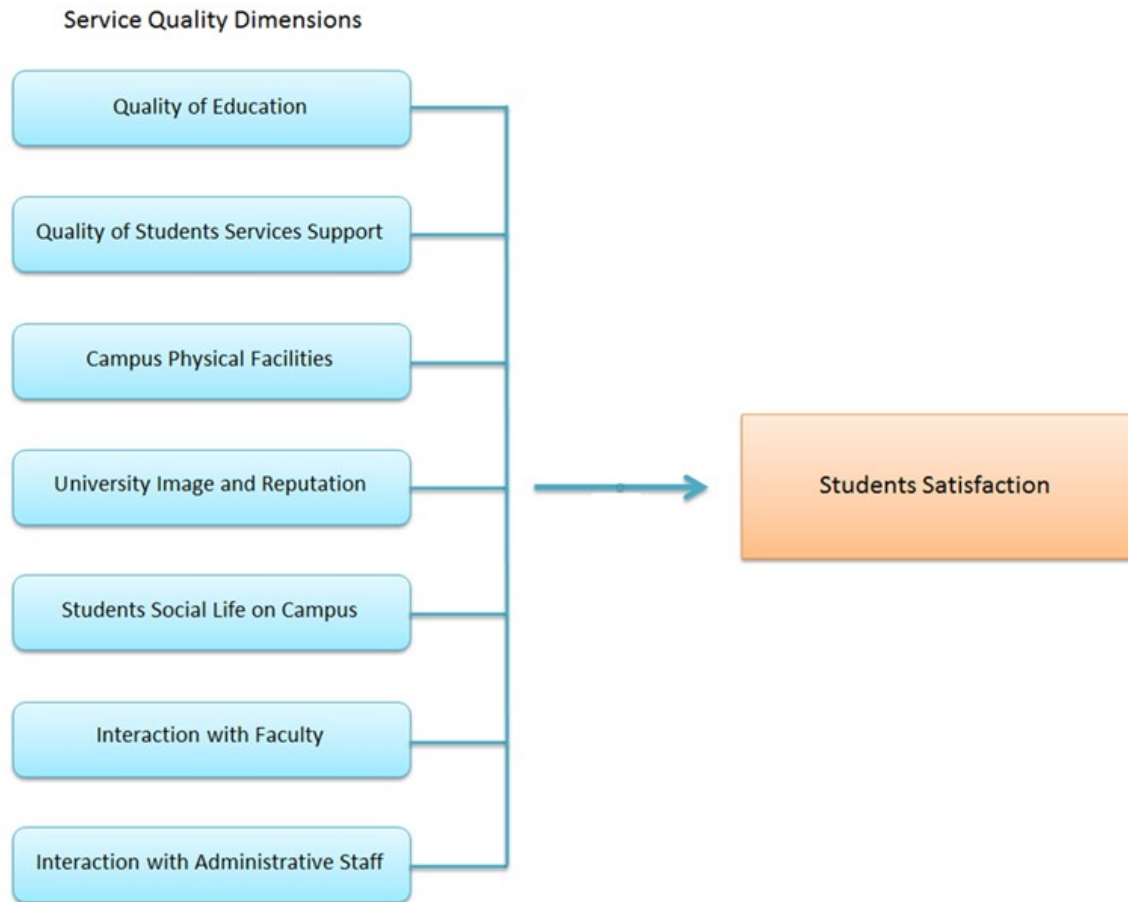


Figure 2.6 Proposed Service Quality Model

2.9 Conceptual Hypothesis

From a holistic perspective, the following hypotheses were developed as basis of this investigation, considering the research framework and research objectives. The hypotheses are directly linked to the seven service quality dimensions proposed in the previous section.

- Hypothesis 1 (H01): There is no significant influence of campus physical facilities on student satisfaction.
- Hypothesis 1 (H1): There is a significant positive influence of campus physical facilities on student satisfaction.
- Hypothesis 2 (H02): There is no significant influence of student interaction with the faculty on student satisfaction.
- Hypothesis 2 (H2): There is a significant positive influence of student interaction with the faculty on student satisfaction.

- Hypothesis 3 (H03): There is no significant influence of student interaction with administration on student satisfaction.
- Hypothesis 3 (H3): There is a significant positive influence of student interaction with administration on student satisfaction.
- Hypothesis 4 (H04): There is no significant influence of student social life on campus on student satisfaction.
- Hypothesis 4 (H4): There is a significant positive influence of student social life on campus on student satisfaction.

Hypothesis 5 (H05): There is no significant influence of university reputation and image on student satisfaction

- Hypothesis 5 (H5): There is a significant positive influence of university reputation and image on student satisfaction.
- Hypothesis 6 (H06): There is no significant influence of Quality of education on student
- Hypothesis 6 (H6): There is a significant positive influence of Quality of education on student.
- Hypothesis 7 (H07): There is no significant influence of Quality of Students Services Support on student satisfaction.
- Hypothesis 7 (H7): There is a significant positive influence of Quality of Students Services Support on student satisfaction.

2.10 Summary

This chapter presents a theoretical foundation of the study, reviewed literature on service quality models and service quality dimensions and customer satisfaction. Based on the review presented in the previous sections and the thorough discussion and critical analysis regarding different service quality models, it was found that the SERVQUAL model has been successfully and widely implemented in different countries around the world and in different types of higher education institutions to assess service quality. Building up on Grönroos and Lehtinen & Lehtinen service quality models, various studies have highlighted the potential and the effectiveness of the SERVQUAL model in the assessment of service quality in universities and academic institutions aiming to measure the gap between students' perceptions of service quality provided and their expectations.

As highlighted in the literature review, many researchers have stressed that the initial SERVQUAL model presented and developed by Parasuraman et al. (1988), with the five dimensions of service quality, Reliability, Empathy, Tangibility, Assurance and Responsiveness, is not universal in its current format and inappropriate in the framework of higher education. Moreover, additional investigations suggested that the SERVQUAL model needs to be altered to take into consideration the culture and environment where it is implemented. Thus, a large number of modified and adapted versions of the conventional SERVQUAL model have been developed and successfully implemented to assess service quality in the higher education sector in various countries.

Building up on the large number of research investigations reviewed and assessed, this work proposes a conceptual framework for a service quality model for quality evaluation in the Lebanese higher education sector. The proposed service quality model is built up with seven service quality dimensions, aiming to serve as a tool for assessing service quality in Lebanese higher education.

Chapter 3 Research Methodology

3.1 Introduction

This work aims at designing and developing a conceptual framework for a service quality model for quality evaluation in the Lebanese higher education sector. After a thorough literature review and discussion of various service quality models and dimensions, the proposed service quality model has seven key service quality dimensions, as 'Quality of Education', 'Quality of Students Services Support', 'Campus Physical Facilities', 'University Image and Reputation', 'Students Social Life on Campus', 'Interaction with Faculty' and 'Interaction with Administrative Staff'. Thus, this chapter will present, report and discuss the major features and stages of the research process adopted to implement and evaluate the proposed conceptual framework. It will thoroughly present the research philosophy adopted, approach implemented, methodology choice, strategies employed, time horizon and some ethical issues concerning the research. Moreover, the corresponding questionnaire design, sampling method and data collection are also discussed in this chapter.

3.2 Research Process

TerreBlanche and Durrheim (1999) stated that a research process generally has three major dimensions: Ontology, Epistemology and Methodology. Burrell and Morgan (1979) highlighted that during such research process, the researchers tend to consider and make a large number of assumptions, aiming to simplify the investigation. These include assumptions that deal with either the real-actions encountered in the research (ontological assumptions), the human knowledge (epistemological assumptions), and the extent and ways the researcher's morals would impact the research process (axiological assumptions) (Saunders et al., 2015). A well-formulated and consistent set of assumptions will lead to a reliable research philosophy. This reliable philosophy will aid in reinforcing the research methodological choice, research strategy, data collection methods and analysis procedures (Saunders et al., 2015). According to Hudson and Ozanne (1988), ontology is the nature of reality. In philosophy, ontology is concerned with reality study and the different ways and angles from which the researchers could approach various phenomena (Saunders et al., 2009). In addition, it investigates whether the reality is objective in nature, meaning that it exists without any regard of our perception of it, or it is subjective and exists just because we believe that it does (Saunders et al., 2009). Saunders et al. (2015) highlighted that the researcher ontological assumptions dictate the way he perceives his research objects. They added that objectivism integrates natural science's assumptions, however they discussed that the research of social reality is external to

everyone including the researcher (Saunders et al., 2015). In ontology, objectivism adopts realism. In its most radical shape, it deems social entities to be like physical ones in the natural world. These entities exist independent of how we recognize them, think of them and label them.

On the other hand, subjectivism integrates assumptions of arts and humanities. In ontology, subjectivism adopts nominalism (Saunders et al, 2015). For nominalists, there is no fundamental reality to the social world other than what people (social actors) ascribe to it. Saying that, each person experiences and perceives reality differently. Some would prefer talking about several realities rather than one reality which is same for everyone else (Burrell and Morgan, 1979).

Nevertheless, the objectivist considers that in an organisation, customer service has a separate reality from the customers who perceive that reality (Saunders et al., 2015). This study is similarly considering students' satisfaction in private higher education institutions in Lebanon as independent with one reality and is separate from the students who perceive that reality. The objective of the research is to determine the key drivers of service quality dimensions and their impact on students "the customers" satisfaction among private universities in Lebanon "organisation". Ideologically, objectivists consider that social entities and social actors exist independently of each other. Objectivists attempt to keep their research value free, because they believe their values could bias their findings to some extent (Saunders et al., 2015). Nevertheless, scientists are ideally responsible for putting aside and isolate their views and beliefs during any investigation, so they can see the reality in a clear and unbiased perspective (Saunders et al., 2015). Similarly, in this study, the researcher will lay aside the values and beliefs (conscious and unconscious biases) that might have been developed from interacting with students in the past, in order to avoid having his previous work or personal experience affecting his research conclusions and outcomes.

In addition, an argument to objectivism would be that customer satisfaction is subjective and it is hard to measure, or that human personality is too rich and complex to reduce to numbers (Field, 1980). Besterfield et al., (2011) stated that customer satisfaction is a feeling or an attitude and therefore it is subjective by nature. According to Liu (2008), service quality is the subjective assessment that customers make after they receive a service. However, human behaviours are predictable (Heiner, 1983) and most of the time they follow certain patterns (Stern & Spoerl, 1938). People as a social group follow patterns of behaviour which can be measured by surveying individuals and aggregating results. In this context, this study tends more towards objectivism from the ontological perspective. Researchers in service quality have developed and reported different models with various several service quality dimensions to assess service quality and measure students' satisfaction. In this regard, well established and widely implemented models include: Service Quality Model (SERVQUAL)

(Parasuraman et al., 1988), Hierarchical Model of Service Quality (HMSQ) (Brady and Cronin, 2001), Importance Performance Model (IPA) (Martilla and James, 1977) and Multilevel Model (Dabholker et al., 1996), Lehtinen and Lehtinen Model (1991). Prior to the development of the service quality model proposed in this study, the researcher has carried out an extensive literature review, analysis and discussion of various service quality model and proposed a conceptual framework for a service quality model for quality evaluation in the Lebanese higher education sector. The framework proposed is based on the initial service quality model developed by Parasuraman et al. (1985), in addition to considering the three qualities highlighted in Gronroos (1983) and Lehtinen and Lehtinen (1982) models, while considering the recommendations and notes of the IPA model.

3.3 Research Questions

The proposed service quality assessment model will provide an initial analysis of the students' satisfaction with the service quality offered at a Lebanese higher education on a yearly basis. For the model investigation, implementation and assessment, a case study is considered where one of the private universities in Lebanon, Lebanese International University (LIU), was selected. In addition, the investigation will provide a valuable opportunity for LIU management to compare the findings and assess the impacts of the implemented procedures and measures. This will aid in enhancing the current implemented measures and suggest new procedures to be adopted where needed, aiming to improve student satisfaction in overall. Although this study addresses only one university as a case study, however, the proposed service quality model and the findings of the study are likely to be applicable and generalized to other private universities in Lebanon.

Considering the research objective and deliverables, the main derived research questions of this study can be listed as:

- 1) What is the impact of the different service quality dimensions on students' satisfaction at LIU?
- 2) What is the relationship between service quality, students' satisfaction and students' loyalty?
- 3) Are there any significant gaps between the level of importance given by students to each service quality dimension and their perception of the current performance for each dimension?
- 4) What is the most reliable and valid assessment tool for service quality in higher education institutions in Lebanon?

3.4 Research Philosophy

Choosing the right philosophical attitude is the first step, and in certain environments the most important step, towards designing well-formulated and organized research (Bryman, 2008). Saunders et al. (2009) explained that the most suitable philosophical position depends on the research objectives and questions. The literature is dominated by three different, if not mutually exclusive, views on research process namely interpretivism, positivism and realism (Saunders et al., 2003; Proctor, 2005; Malhotra and Birks, 2007). The literature is dominated by three views on research process namely positivism, realism and interpretivism (Saunders et al., 2015; Malhotra and Birks, 2007).

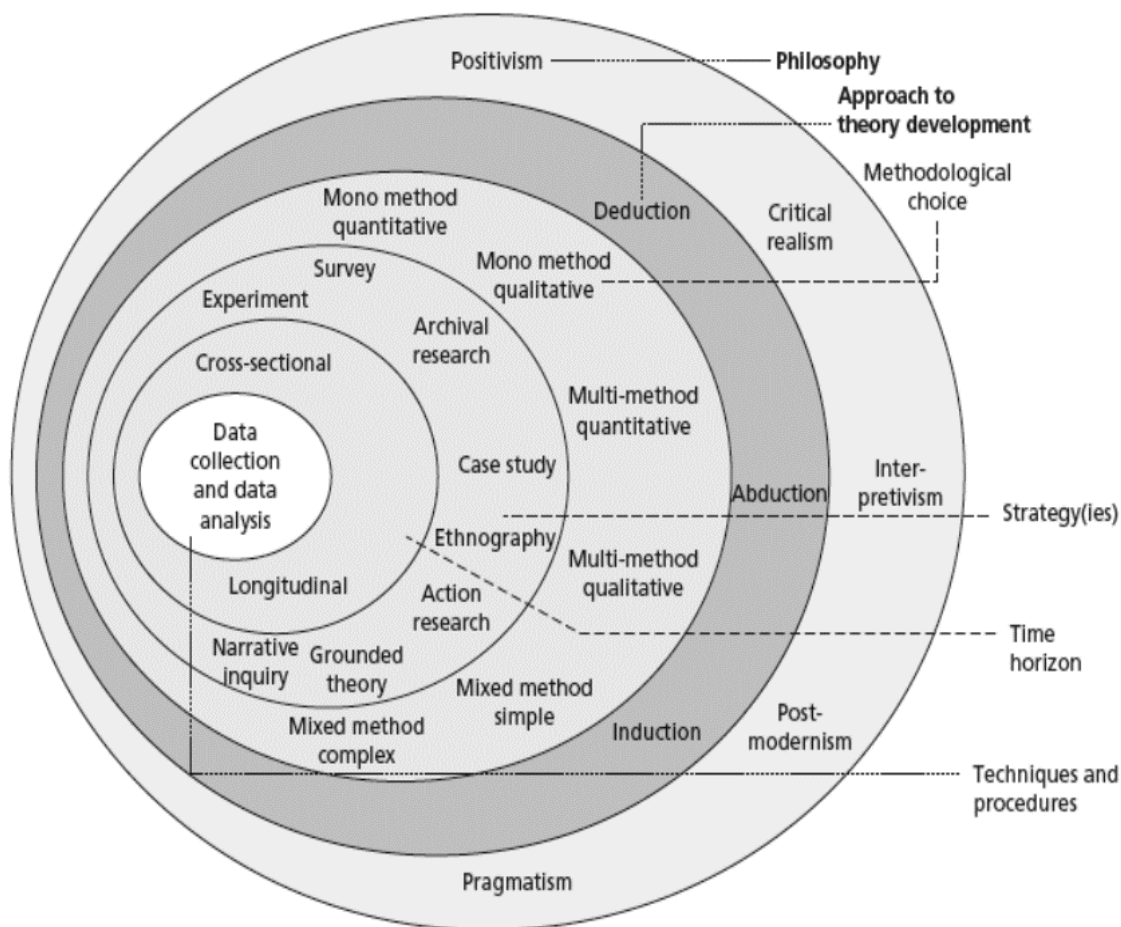


Figure 3.1 The research 'onion'- Saunders et al. (2015, p.124)

Positivism aligns with objectivism, and it is highlighted by the existence of one single reality to any phenomena regardless of the research belief (Hudson and Ozanne 1988). In addition, positivism is linked to natural science's philosophy and necessitates having a tangible observable reality to work with and create law-like generalizations (Saunders et al., 2015). In creating those law-like generalizations, the researcher would try to find causal relationships in his data, like scientists, (Gill and Marcos, 2009) in addition to predicting behaviours (Fisher and Buglear, 2007). Moreover, a

positivist focuses strictly on scientific realist method, designed to yield pure data and facts which is independent of any human interpretation or bias (Saunders et al., 2015). Epistemologically, the researcher would focus on discovering observable and measurable facts and regularities. In this regard, the only phenomena that he could observe and measure, would lead to the creation of credible and meaningful data (Crotty, 1998). Therefore, quantifiable observations that lead to statistical analysis are emphasised particularly within a positivistic philosophy (Gill and Johnson, 1997). Positivist researcher might use an existing theory to produce hypotheses that shall be tested to be either confirmed or disproved. This in turn will result in further development of theory which then may be tested by some extra research (Saunders et al., 2015). In their work, Remenyi et al. (1998, p.33) described the positivist research being a “value free research where positivistic researcher is independent and is not affecting or being affected by the subject of the research”.

Like positivists, critical realists argue that there is an external reality that scientists address their attention to (Bryman, 2008). Contrary to positivists, they do not believe that reality is directly accessible through our observation and knowledge and they accept multiple views of reality (Saunders et al., 2015). A critical realist believes that people themselves are not to be studied, like the case of objects in natural science (Saunders et al., 2003). In addition, critical realist research focuses on providing an explanation for noticeable organisational events by looking for the fundamental causes and mechanisms through which profound social structures shape organisational life (Saunders et al., 2015). Due to this focus, much of critical realist research takes the shape of a comprehensive historical analysis of organisational and social structures, and they tend to change over time (Reed, 2005). Moreover, critical realists embrace epistemological relativism as a result of their concentration on the historical analysis of structures, (Reed, 2005). Madill et al., (2000) stated that critical realism is essentially subjective while producing knowledge and share multiple common features with constructionist stances. In their analysis, Mingers et al. (2013) claimed that critical realists usually use a mixed-method research strategy because they acknowledge the difference in the types of objects of knowledge. Such objects have different features including physical, conceptual and social, in addition to the ontological and epistemological features (Mingers et al., 2013). Ideally, a critical realist is aware of the world biased views and cultural experiences. Thus, he tries to minimize bias and isolate preferences and emotions, aiming to stay as objective as possible (Saunders et al., 2015).

On the other hand, Interpretivism, known as post-positivism, criticizes objectivism. Saunders et al. (2015) highlighted that interpretivism opposes objectivism view of human knowledge. In a similar assertion, Hudson and Ozanne (1998) claimed that interpretivism refuses the one reality stance, and rather it believes in the existence of multiple realities created by different individual and group

perspectives (Hudson and Ozanne, 1988). In addition, interpretivism insists that human beings and their social worlds cannot be studied in the same manner as physical phenomena. Similar to critical realism, interpretivism argues that social sciences research should not be the same as natural sciences research (Saunders et al., 2015). Moreover, interpretivism is doubtlessly subjective as it focuses on complexity, richness, multiple interpretations and meaning-making. In this context, interpretivist researcher does not set out to test hypothesis. Therefore, the interpretivist researcher needs to adopt empathetic stance (Saunders et al., 2015) which requires the social scientist to comprehend the meaning of social action subjectively (Bryman, 2008). In addition, interpretivists recognize their own interpretation of research data and materials, and therefore their own values and beliefs play an important role in the research process (Saunders et al., 2015).

Regarding our investigation in this study, the critical realism philosophy is thought to be inappropriate, because the researcher is neither concerned with explaining the phenomena of customer satisfaction nor in providing an in-depth historical analysis of the social and organizational structures and how they change over time. Moreover, the interpretivism methodology is not suitable for this research since this philosophy embrace subjectivity and does not set out to test hypothesis.

As mentioned earlier, this research adopts the ontology of objectivism that seeks to utilize a scientific approach to reveal reality. As positivism subscribes to objectivism, this research will embrace a positivistic methodology that follows a hypothesis testing approach using assumptions. The general hypothesis is that positive relationships exist among each attribute of service quality dimensions and student's overall satisfaction except for Campus Physical Facilities. The choice with this specific methodological process is also driven by the major aim of this study in terms of the development of an effective and consistent assessment tool for service quality in higher education institutions in Lebanon.

3.5 Research Approach

In general, the outcome of the research regarding theory development distinguishes between the inductive, abductive and deductive approach. The appropriate approach to be chosen for a specific research depends mainly on the deliverables and the aim to be attained (Saunders et al., 2015). An inductive approach is chosen when the research is seeking to generate a new theory, while an abductive approach is selected with the research aims to modify an existing theory or build a new theory. On the other hand, if the research to be carried out is built upon the objective to falsify or verify an existing theory, then a deductive approach is to be adopted. In the case of the deductive approach, research starts with a theory, often developed from reading and reviewing academic literature, and then this is followed by a research strategy which is designed to test the existing theory.

On the other hand, the inductive approach starts with collecting data to explore a phenomenon and generate a new theory (Saunders et al., 2015). Both scientific processes, induction and deduction are shown in Fig. 3.2. In deduction, hypotheses are developed from existing theories and then observations and findings are used to test hypothesis, whereas induction starts with findings and observations to develop new theories (Saunders et al., 2015).

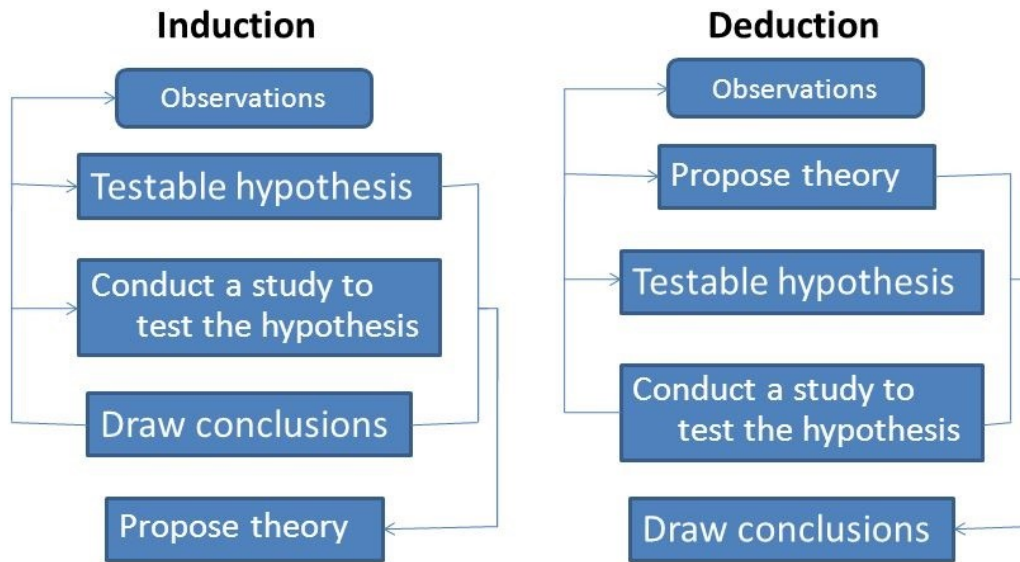


Figure 3.2 Deduction and Induction Processes. Source: Saunders et al. (2015)

In Abductive approach, research starts with a surprising fact being observed (Ketokivi & Mantere, 2010) then collection of data to explore a phenomenon. This is followed by identifying themes and clarifying all the patterns to generate a new theory or upgrading an existing theory which is further tested by collecting additional data (Saunders et al., 2015). Moreover, Bryman has stated that one of the major differences between the three research approaches listed above is the sequence of the research steps implemented (Bryman, 2008).

For the case of this study, the deductive approach is selected, being the most appropriate approach. This is because the researcher seeks to develop hypothesis to be tested for acceptance or rejection. Research undertaken in the area of service quality has been largely quantitative deductive approach such as Athiyaman (1997), Ruby (1998), Douglas et al., (2006), Ilias et al., (2008), Nasser et al., (2008), Govender & Ramroop (2012), Dib & Alnazer (2013), Azoury et al., (2013) and Mang’unyi and Govender (2017). Therefore, there is a large block of literature review dealing with service quality which allows the researcher to outline a theoretical framework, and thus a hypothesis lends itself more readily to be deductive. Saunders et al., (2015) highlighted the major characteristics of the deduction

approach in research. First it explains the casual relationships between concepts and variables. In this regard, concepts should be quantitatively invoked in a way that enables facts to be measured. Another important characteristic of deduction is generalization, and therefore the sample should be carefully selected in order to be able to generalize the research results. Finally, the researcher in the deductive approach should take an independent position of what is being observed. This is perfectly aligned with the objectivism ontology and positivism research philosophy that is adopted in this investigation.

3.6 Type of Study

Adopting the deductive approach, this research aims to be exploratory and descriptive. These categories are not mutually exclusive. As highlighted by Robson (2002), a research is dynamic in nature and could have multiple purposes that might change and develop over time.

Prior to an exploratory research, it is essential to have a clear overall picture of the research subject. This picture formulation shall also precede the data collection phase (Saunders et al., 2015).

Exploratory studies are to recognize ‘what is happening; to seek new insights; to ask questions and to assess phenomena in a new light (Robson 2002, p. 59). Saunders et al. (2015) stated that an exploratory investigation might include reviewing and searching in the literature, collecting expert views and conducting focus group interviews. According to Robson (2002, p.59), exploratory research may follow descriptive studies that aim ‘to portray an accurate profile of persons, events or situations‘.

On the other hand, explanatory studies focus on examining a situation or a problem, aiming to explain the relationships between different variables (Robson, 2002; Saunders et al., 2015). However, this study is not attempting to explain consumer behaviours or the relationships between variables.

Therefore, this study is both a descriptive research, in terms of collecting data by a questionnaire, and an exploratory study with the aim to explore the key drivers of service quality in higher education institutions in Lebanon and determine the relationships between service quality dimensions and student’s satisfaction. In the literature, service quality and student’s satisfaction are not new topics. However, the relationships between the service quality dimensions and student’s satisfaction is very new in the context of the Lebanese higher education and was not investigated before.

To assess the approach selected and implement the framework developed, this research considers a case study of a private university in Lebanon, LIU, with the one of the highest enrolment rates in the country, 28,462 students in Spring Semester 2018. LIU has a total of 9 campuses in various Lebanese districts and regions. The full numbers of students registered in Spring 2018 across campuses are shown in table 3.1. The percentage of students registered in summer semester per campus was approximately similar to the percentage of students registered in spring semester per campus. Students

who prefer not to register full load in fall and spring semester, usually register courses in the summer semester. However, students who graduates in Spring Semester 17-18 won't register for summer courses.

Table 3.1 Students registered in Spring and Summer 2018

Campus	# of Registered Students (Spring 17-18)	%	# of Registered Students (Summer 17-18)	%
Akkar	1078	3.78%	734	5.13%
Beirut	10416	36.59%	5150	36.02%
Bekaa	3651	12.82%	1849	12.9%
Mount Lebanon	998	3.5%	395	2.7%
Nabatieh	2176	7.64%	1106	7.7%
Rayak	1815	6.34%	750	5.2%
Saida	3021	10.614%	1609	11.25%
Tripoli	3149	11.06%	1641	11.47%
Tyre	2158	7.58%	1063	7.43%
Grand Total	28462	100%	14297	100%

The ‘Case Study’, as a strategy, allows the researcher to focus on the phenomena and trends observed in one particular institution, being the field of investigation, with specific characteristics and features. In principle, a case study is an experiment aiming at studying whether an alteration in an independent variable cause change in a different dependent variable (Hakim, 2000). According to Saunders et al. (2009), there are no evident boundaries in case studies. Several similar studies have employed case studies (Bennett, 2003; Douglas 2006; and Pereda, M., et al., 2007) to investigate students’ behaviour under different circumstances and within a multitude of environments.

Concerning the current investigation, choosing LIU university as a case study fits perfectly with the researcher position, competences and background. The researcher is serving as a course coordinator, student’s advisor and campus events coordinator for 9 Campuses at LIU since 2012. The researcher job activities and tasks have significant impacts on developing and improving students experience at LIU from different angles. Being LIU staff member, the researcher has full access to data collection from all schools at 9 Campuses at LIU.

Furthermore, a ‘Survey’ is an instrument which is straightforward and easy to understand. It generally provides a holistic and illustrative picture of the investigated topic, and thus it is regarded as a credible solid research strategy by a large number of researchers (Bryman, 2008). Surveys permit large data collection from a large population but through an economic approach (Saunders et al., 2009).

Moreover, a survey allows using several methods in collecting data such as questionnaires, structured

interviews or observations, and it is practical and beneficial in both quantitative and qualitative research (Saunders et al., 2009).

The current study aims to answer the main research question: “What are the key drivers of service quality dimensions and their impact on business students’ satisfaction among private universities in Lebanon?”. And considering a case study-approach, using a questionnaire, tends to be an appropriate research strategy to find answers for our ‘what’ question and to test the different hypotheses presented earlier. In addition, multiple researchers have linked the use of questionnaires with deductive research approach, where questionnaires were highlighted as the most popular and common research strategy in social sciences (De Vaus, 2002; Saunders et al., 2003).

3.7 Time Horizon

In overall, cross-sectional studies focus on a certain phenomenon at a certain point in time (Saunders et al., 2009; Bryman and Bell, 2007). Such studies might be seeking to describe the occurrence of phenomena or to explain the relation of factors in different organisations (Saunders et al., 2009). On the other hand, it is impossible in cross-sectional studies to observe data through time (Bryman, 2008), therefore they cannot be used to determine causal relationships between variables. Nevertheless, cross-sectional studies can only determine if variables are related to each other in a way or another. According to Robson (2002), cross-sectional studies usually deploy the survey as part of the investigation. In his analysis, Bryman (2008) stated that a cross-sectional study requires a sum of quantitative or quantifiable data on various cases that are connected to multiple variables. Those variables are then studied more in depth to identify association patterns. This is exactly the case in our investigation and therefore, the time horizon appropriate for this study is cross-section.

Furthermore, longitudinal research is capable of studying change and development (Saunders et al., 2009). In longitudinal studies every sample is surveyed more than once (De Vaus, 2002). A longitudinal study could be conducted to determine the impact of the key drivers of service quality on students’ satisfaction or to follow the change in the satisfaction of the same sample of students’ over time. However, this research is considered a preliminary research where cross-sectional study will help investigating whether there are relationships between variables. And then it might serve to guide future longitudinal studies to investigate causal relationships between variables.

3.8 Methodological Choice and Data Collection Technique

In choosing an appropriate methodological approach, it all depends on the research aims and objectives (Silverman, 2005). So, the defined research problem is key in this perspective (Jankowicz, 2005). Saunders et al., (2009) confirmed these claims, and added that choosing an appropriate methodology depends in principle on the study's philosophy, objectives and research questions.

Nevertheless, researchers can choose a single data collection method with a corresponding analysis procedure, either a mono quantitative method or a mono qualitative method as shown in Fig. 3.3. The researcher can also use multiple data collection methods and analysis procedures to answer the research question (multiple methods or triangulation) (Saunders et al., 2009).

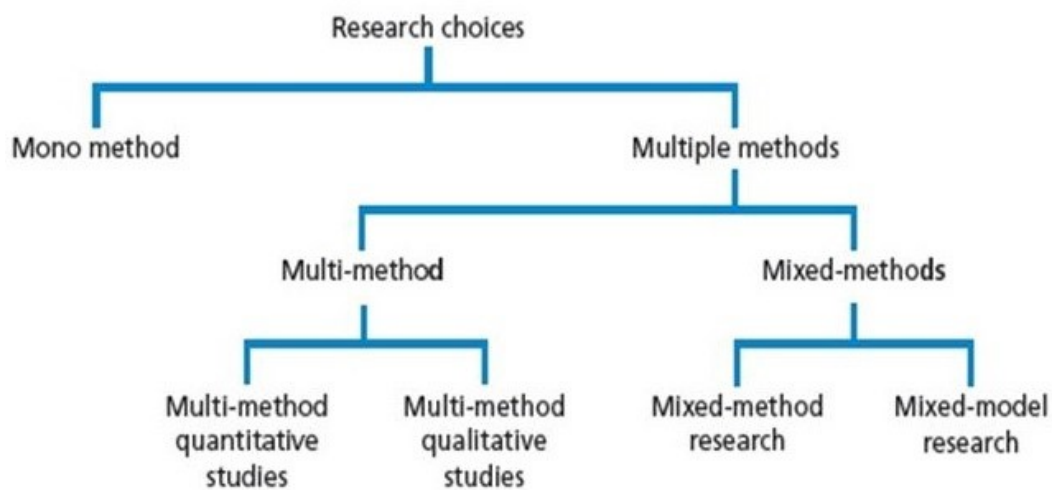


Figure 3.3 Research Choices. Source: Saunders et al. (2009, p.152)

On the other hand, one type of a multiple methods-approach is the multi-method quantitative designs. This allows the researcher to use multiple quantitative data collection methods with parallel analysis measures. The other type is multi-method qualitative designs, which allows the researcher to use more than a single qualitative data collection method but also requires parallel analysis measures (Saunders et al., 2009). In addition, mixed-method is a multiple-method approach, combining both qualitative and quantitative data collection techniques and analysis procedures (Saunders et al., 2009). This means for instance that the researcher could start with a qualitative data collection and analysis, followed by a quantitative data collection and analysis.

Researchers can distribute the questionnaires either personally or electronically. McPeake et al., (2014) claimed that sending questionnaires electronically results in low response rates, although it saves time and costs. Thus, the researcher decided in this investigation to self-distribute the questionnaire manually for students across 9 campuses of LIU.

In addition, research carried out in the area of customer satisfaction and loyalty has been largely quantitative such as the investigations carried out by Athiyaman (1997), Ruby (1998), Douglas et al., (2006), Ilias et al., (2008), Nasser et al., (2008), Govender & Ramroop (2012), Dib & Alnazer (2013), and Azoury et al., (2013). This has led to an extensive number of studies in the literature with defined variables and investigated theories, which could largely support the work to be carried out within the scope of this study. In addition, this large block of studies has confirmed that the quantitative approach is believed to be more suitable for this research problem. In this context, Athiyman (1997) have carried a quantitative study to investigate the relationship between perceived quality and customer satisfaction. He employed a survey among 1432 students from various levels of higher education in Australia. In another study, Ruby (1998) assessed student satisfaction with four areas of support services: academic records, admissions, career services and financial aid. SERVQUAL model was employed and the sample included 748 students in ten different private universities in four states in the USA.

Douglas et al., (2006) surveyed 864 students at Liverpool John Moores University's Faculty of Business and Law. They used questionnaire and then employed SPSS and Quadrant analysis to analyse the results and determine which aspects of the university's services were most important and to which degree they satisfy the students. In another investigation, Dib and Alnazer (2013) used quantitative survey on a sample of 280 undergraduate and postgraduate students in the higher institute of business administration in Syria. They analysed the influence of perceived service quality, perceived value, image on student satisfaction, evaluating the impacts on student satisfaction in Syrian universities. Based on the study outcomes, they recommend studying the effect of tuition fees on students' satisfaction in future researches. According to Ford et al., (1999), the overall students' perceived service quality can be affected to some extent by the tuition fees paid for their education. Therefore, the researcher decided to include a question in the questionnaire concerning tuition fees aiming to assess its impact on the overall students' satisfaction levels. The questionnaire is reviewed by an expert panel, followed up by a pilot study, and finally revised again and finalized.

3.9 Population and Sample

The population in this study consists of undergraduate students registered for Baccalaureate at LIU, with a total number of 28,462 students in Spring 2018 and 14,297 in Summer 2018. Covering the entire population in a survey is not practical and almost impossible in such universities, since it requires long time and huge resources (Saunders et al., 2009). Therefore, a sample of the population has been selected to represent and characterize the larger population.

Sampling can be defined as the process of selecting a sufficient number of elements from the population. The word ‘sufficient’ is not easy and straightforward to describe or evaluate here and that is why common techniques are employed to estimate the appropriate size of the sample to be considered. In this regard, sampling is broadly classified into probability and non-probability sampling as shown in Fig. 3.4. In non-probability sampling, the discrete elements of the population have no probability for being selected in the sample and it is usually less expensive than a probability sampling. Therefore, the findings of the study using a non-probability sampling cannot be generalized. Researchers who might not need to generalize their results and the purpose of their study could implement non- probability sampling and thus saving time and resources (Malhotra and Bircks, 2007). However, probability sampling is often associated with survey and experimental research strategies. In probability samples the chance, or probability, of each case, or element, being selected from the population is known and is usually equal for all cases. This provides the ability to estimate statistically the characteristics of the population from the sample (Saunders, 2009). It is then possible to generalize the properties or characteristics to the population elements by good understanding of the properties and characteristics of the sample (Sekaran, 2000). Based on the objectives of this study and considering that the researcher aims to draw generalized conclusions on the level of the holistic Lebanese higher education sector, a probability sampling technique was selected in this study to collect data form respondents. In this regard, a stratified proportional random sampling technique was adopted. Students were stratified into 9 campuses and a proportionate sample was used to ensure that the numbers of samples drawn from each campus are relative to the size of each stratum.

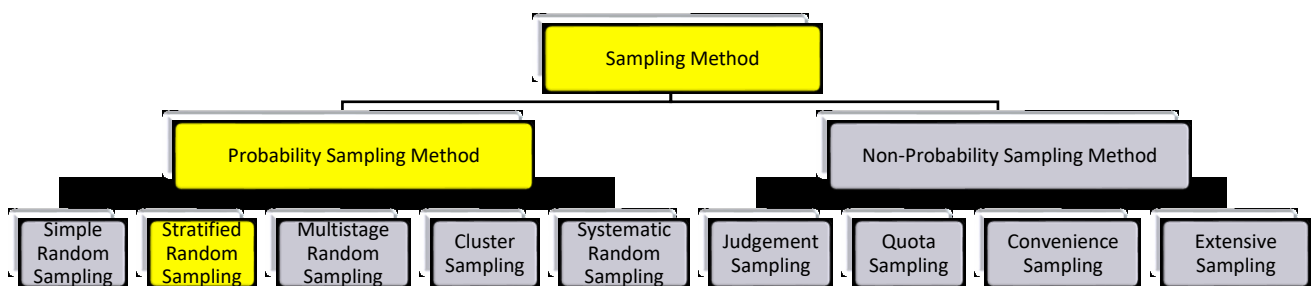


Figure 3.4 Sampling Method

The formula proposed by Israel (2009) is applied to determine the sample size n as:

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

where e = 3%, n is the sample size, and N is the population size. The stratified random sampling method was used in several studies conducted on service quality in higher education such as Lodesso

et al. (2018); Mohammed (2014); Mang’unyi and Govender (2017); Khan and Fasih (2014); and Senthilkumar and Arulraj (2010) and the sample size formula was used by several studies such as Subianto and Hamsal (2013) and Israel (2009). Considering that N is equal to 14,297 students, the resulting sample size is 1,031 students. This students’ number was raised by 30%, leading to 1,343 students. This is to ensure that the needed sample size (1,031 students) is achieved among the surveyed students. The final attained number of 1,343 students was distributed across the different campuses as shown in Table 3.2.

Table 3.2 Sample Size and Distribution

Campus	Number of Registered Students (Spring 17-18)	% of Registered Students (Spring 17-18)	Number of Registered students (Summer 17-18)	% of Registered Students (Spring 17-18)	Number of students that should be surveyed	30% extra	No. of classes where the questionnaire was distributed	Average number of students/ common GER classes in each campus	Number of questionnaires distributed/ Campus	Number of completed surveys
Akkar	1078	3.78%	734	5.13%	53	69	2 classes	39.4	58	55
Beirut	10416	36.59%	5150	36.02%	372	484	11 classes	48	398	375
Bekaa	3651	12.82%	1849	12.9%	133	173	5 classes	38	168	152
Mount Lebanon	998	3.5%	395	2.7%	28	39	2 classes	34	41	33
Nabatieh	2176	7.64%	1106	7.7%	80	104	3 classes	35	104	87
Rayak	1815	6.34%	750	5.2%	54	70	2 classes	48	85	75
Saida	3021	10.614%	1609	11.25%	116	151	4 classes	38	123	117
Tripoli	3149	11.06%	1641	11.47%	118	153	4 classes	44	147	135

Tyre	2158	7.58%	1063	7.43%	77	100	3 classes	34	99	87
Grand Total	28462	99.99%	14,297	99.8%	1,031	1,343	36 classes	39.82	1,223	1,116

A study carried out by Zafiroopoulos and Vrana (2008) on the perception of service quality between the first and final year students suggests that perception of students changes over a period of study. Also, another study carried out by Abouchedid and Nasser (2002) on assessing quality service in private universities in Lebanon, showed that students of different majors have different satisfaction levels. The results showed that students from the faculty of arts and architecture are characterised by higher ratings on the overall satisfaction compared to students from the faculty of business and economics. In addition, it was reported that students from the faculty of arts and architecture are far more satisfied than students from the faculty of engineering.

Therefore, in the current investigation, the researcher aimed to include undergraduate students from all levels and all majors at different campuses of LIU. In principle, six general educational requirement courses (GER courses) are offered at LIU; CSCI 200, Math 245, ARAB 200, CULT 200, ENG 201 and ENG 251. As presented in Table 3.3, four of these six GER courses; ARAB 200, CULT 200, ENG 201 and ENG 251 are common between all faculties and are offered in all campuses where students at different levels and from different backgrounds register for it. This provides a higher research security and a good assurance of having all the majors and levels of students represented in the study carried out.

Table 3.3 Common GER courses at LIU

Arab 200	Arabic Language and Literature
CULT 200	Introduction to Arab - Islamic Civilization
ENG 201	Composition and Research Skills
ENG 251	Communication Skills

The sample was chosen on four stages to ensure that this selected sample is representative.

- The first stage was to determine the number of students to be surveyed from each Campus. This was estimated in proportion to students' number in each of the 9 campuses of LIU.

- Then in the second stage, a list of the four GER common courses offered in summer was prepared along with classes offered for these courses. The total GER courses were offered for 113 classes with a total number of students of 4,514 which is 31.5% of the total number of students registered in summer (14, 297).
- The third stage aims to determine the number of classes to be selected from each campus. Thus, the pre-determined number of students that should be surveyed in each campus was divided by the average number of students in each GER class in each campus.
- In the last stage, 36 GER classes were then randomly selected.

To control data collection, the questionnaire was self - distributed across all LIU Campuses in the period from 18 to 25 July 2018. This increased the response rate and ensured confidentiality. For each of the selected 36 classes, the questionnaire was distributed at the start of the class and students had 20 minutes to answer the questionnaire. Questionnaires were distributed after Test I so that first year students had enough time to familiarize themselves with services provided by the University. The intention was to include students with sufficient exposure to different services offered by the university, so that a better characterization and representation on the different relationships and interactions with services is attained. To ensure that students understand different points in the questionnaire, they were encouraged to ask for clarifications of any questions that may not be clear.

Prior to data collection, approval was sought from the university and a consent form was signed by the university Vice President. A list of selected courses and classes along with different practical information regarding the questionnaire implementation was also shared with the Vice President, Dean of Education School and the corresponding Assistant Deans in the 9 LIU campuses to ensure a smooth distribution process. Each class was characterised by an envelope with the campus name on the envelope, name of the course, instructor name, date and time of the course, number of students registered, number of students attending and absence percentage. It shall be noted that in a couple of classes, there were duplicates of students in classes. So, in order to avoid including duplicate students, students whose name appeared more than once in the registry of the selected classes were asked to complete the questionnaire only once.

3.10 Development of the Research Instrument

In this investigation, the intention is to identify and analyse the gap between the level of importance given by students to each service quality dimension and their perception of the current performance for each dimension based on students' personal characteristics. The study also aims to investigate and

determine the impact of the service quality dimensions on students' satisfaction levels at LIU and to examine the relationship between service quality, students' satisfaction and students' loyalty.

In order to develop the required questionnaire, extensive literature review for service quality models and service marketing literature was carried out. The development of the questionnaire involved the refining and evaluation of two concepts: service quality in higher education institutions and student satisfaction and loyalty. The dependent variables of the study are students' satisfaction and loyalty and willingness to recommend. On the other hand, the considered independent variables are service quality dimensions, and demographic variables. However, service quality dimensions will be the dependent variables when compared against demographic variables.

3.10.1 Questionnaire Design

The questionnaire's cover page included mainly information on the purpose of the study, as well as instructions for participants for a proper completion of the questionnaire. Students were reassured that their participation is completely voluntary and that their answers will be treated with utmost anonymity and confidentiality. The questionnaire was divided into four sections, where specific directions were provided to guide the students within each of the three sections in the questionnaire.

Andrews (1984) reported that the quality of data collected is higher if questions related to the same topic are preceded by 16 to 64 words introduction. Therefore, short instructions were provided at the beginning of each of the four sections. Also, a simple wording and straightforward English expressions were used in the instructions and in the questions to avoid confusing the respondents. It shall be noted that the targeted audience has English as a second language and the level differs from one class to another, as well as among campuses. In order to increase respondents' comprehension, a general advice was followed in the design of the questionnaire, as to keep questions or statements as short as possible (Dillman, 2000).

In his analysis, Knowles (1975) mentioned: 'as a respondent answers a series of questions related to the same underlying construct, the respondent comes to a better understanding of that construct'. Based on this, the researcher divided the questionnaire into four coherent and organized sections with a good flow. In addition, the researcher tried to make the questionnaire look concise and easy to answer, and printing on both sides of the sheet was avoided as suggested by Dillman (2000). The questionnaire main sections consisted of Section A, B and C.

1. Questionnaire Section A

Section A in the questionnaire is composed of fourteen questions, where two questions cover the respondent study experience. Question number (6) would enable the researcher to know if students being surveyed have studied at previous university before being enrolled in their current university. This is driven by the claim that students with previous background experience at previous universities, whether successful or unsuccessful, may likely have different evaluation for university services. Question number (7) will enable the researcher to explore the reasons behind choosing a specific university and therefore it might shed the light on areas where the management in academia should give more attention to. The remaining twelve questions of this section allow the collection of the students' characteristics in terms of their study level, enrolment, major, mode of study, funding, as well as general demographic descriptors. Such variables were investigated for their potential impacts on students' evaluation of the service quality as hinted in the literature.

Descriptive statistics will be used to reflect the characteristics of the sample in this study. Converse and Presser (1986) and Oppenheim (1992) stated that demographic questions about respondents, such as age, education, income, and marital status should be included at the end of the questionnaire rather than at the beginning in order to avoid negative feelings by respondents. This is due to the fact that such questions are regarded quite personal and may affect answering behaviour or participation in the questionnaire completion (Lietz, 2010). In addition, Dillman (2000) also suggested to place demographic questions at the end of the questionnaire. This usually encourages respondents to complete this type of questions because they feel committed after spending time answering a large portion of the questionnaire. However, the researcher considered having the demographic section at the beginning of the questionnaire, because in this specific questionnaire there are 49 statements about service quality. Thus, there is a possibility that respondents will skip the demographic questions on last page due to lack of time or simply because they may feel tired or bored after having answered too many questions.

The researcher further investigated the effect of demographic questions placement in a survey and found that a recent study by Teclaw et al., (2012) dealing with this issue. Teclaw et al., (2012) stated that there was a higher response rate for demographic questions when placed at the beginning of the questionnaire compared to the case when they are placed at the end. A supporting study was presented by Dillman et al., (2009) who stated that depending on the survey design, placing demographic questions at the beginning could be an option. In the current study, demographic questions will provide important information, considering that 9 campuses in different Lebanese districts were considered and thus the researcher wanted to ensure that some demographic information is captured in

the questionnaire by filling up the first questions. Saying that, the researcher aims to use the questionnaire outcome as a basis to establish a correlation between demographic variables against dependent variables (satisfaction and loyalty). This will give a clear indication if there are significant differences in perceptions of satisfaction related to demographic factors. The researcher also aims to compare demographic variables against the seven dimensions of service quality used in the questionnaire. All of these urged the researcher to place demographic questions at the beginning of the questionnaire.

2. Questionnaire Section B

Section B deals mainly with students' satisfaction and loyalty and includes the dependent variables of the study, overall satisfaction and intention to recommend. The students' satisfaction scale measures students' satisfaction level, considering their overall experience at the university, and their willingness to recommend their university to others. Three questions were included aiming to assess student overall satisfaction with the university experience (Bristow et al., 2002), and one question was added to investigate students' behavioural intention towards recommending their university to a friend or family. This section as well as Section C adopted the interval scales for evaluating the variables of service quality. For this, a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree) was implemented. According to Cox III (1980), an odd rather than an even number of response alternatives is preferable under circumstances in which the respondent can legitimately adopt a neutral position.

According to Cox III (1980), the overuse of the neutral category by respondents can generally be avoided by providing them with an adequate number of reasonable response alternatives. The 7-point scale, summarized by Lietz (2010) was found to be highly reliable (Cronbach 1951), as it allows for larger differentiation and a wide range of responses, compared to the initial 5-point scale (Finn 1972; Masters 1974; Alwin 1992). In addition, several researchers (Likert, 1932; Mehrens & Lehmann, 1983; Rossi, Wright, & Anderson, 1983 cited in Barnette, 2000) have recommended the use of statements with opposite wording. However, most of the research over the past two decades highlighted that using negatively worded statements, whether alone or in addition to positively worded statements, has caused researchers many problems. Major reported issues deal with internal consistency, factor structures and statistics. In addition, Barnette (2000), and Chamberlain and Cummings (1984) compared reliabilities for scores on two forms of a course evaluation instrument. They found that score reliability was higher when all items used were positively worded. Therefore, the researcher in this investigation decided to go with positively-worded statements all throughout the questionnaire.

In both sections, B and C, the respondents had the option of not choosing an answer or stating their lack of knowledge by selecting a (don't know) option. The "don't know" option was added to the questionnaire, so it can be selected by respondents who don't know the answer to a given question. In doing so, the researcher wanted to avoid forcing those students to choose an answer that doesn't reflect their actual opinions. The satisfaction variables will be compared against the service quality variables and demographic variables to spot possible impact on students' satisfaction.

As for the loyalty question, "how likely would you recommend this university to your friends?", it is adopted from the net promoter scale (NPS) which was developed by Reichheld (2003). NPS question is the only question in the survey with a 11-point scale with 10 being (very likely) and 1 being (unlikely). The researcher wanted to keep the 11-point scale in order to be consistent with the work of Reichheld (2003) on the original NPS Scale. In this regard, NPS has been correlated with customer behaviour and was adopted by thousands of companies. Satisfaction and loyalty questions were placed before service quality questions to avoid the situation where answers about satisfaction and loyalty might be affected by the preceding questions on service quality. In his analysis, Szwarc (2005) discussed the impacts of placing satisfaction questions at the beginning or at the end of a questionnaire. Szwarc (2005) pointed out that while asking the question at the end of the survey usually elicits the respondent to rationalize and give a considerate answer, asking the question at the beginning of the questionnaire would instead truly reflect the respondent point of view when asked by a friend, colleague or family member. Thus, it could be concluded that the order of questions is important, but the specific order depends upon the nature of the research, the objectives and the respondents background. In this investigation, the researcher decided to place the satisfaction question at the beginning of the questionnaire. In this way, the researcher aims that respondents' answers to satisfaction and loyalty questions would not be influenced by previous performance and importance rating questions of service quality items. The researcher wants the answers to loyalty questions to be from instinctive thought because that would better reflect typical student responses when asked about recommending a university to others, whether being a friend of a family member.

3. Questionnaire Section C

Section C of the questionnaire includes the seven proposed dimensions of service quality presented and discussed earlier by the researcher. The seven service quality dimensions are as follows: 'university image and reputation', 'quality of education', 'quality of student's services support', 'campus physical facilities', 'students' social life on campus', 'interaction with faculty' and 'interaction with administrative staff'. The dimensions were presented as a set of 56 items. They were

presented using a 7-point Likert scale, ranking from 1 (strongly disagree) to 7 (strongly agree), where a midpoint (neutral) was used.

The SERVQUAL model has been successfully and widely implemented in different countries around the world and in different types of higher education institutions with the aim to assess service quality. As highlighted in the literature review, many researchers stressed that the initial SERVQUAL model presented and developed by Parasuraman et al. (1988), with 5 dimensions of service quality (reliability, empathy, tangibility, assurance and responsiveness) is not universal in its current format and is largely inapplicable to higher education. Moreover, additional investigations suggest that the SERVQUAL model is in need for alterations and modifications to take into consideration the culture and environment where it is to be implemented. Thus, a large number of upgraded and adapted versions of the conventional SERVQUAL model have been developed and successfully implemented to assess service quality in the higher education sector in various countries. Building on the large body of research presented and reviewed in this study, and considering the challenges faced by the private higher education institutions in Lebanon and the absence of systematic and effective service quality assessment tools, this study proposes a conceptual model to be used as a basis for service quality assessment and student satisfaction measurement in Lebanese private higher education institutions. In Section C, the researcher aims mainly to assess the proposed model, investigating the impact of the seven suggested service quality dimensions within the Lebanese higher education sector. In more details, the researcher in this section aims to identify and analyse gaps between the importance level given by students to each of the proposed service quality dimensions and their perception of the current performance for each dimension based on students' personal characteristics. In addition, and via the questions included within this section, the researcher plans to determine and evaluate the impact of the seven service quality dimensions on students' satisfaction levels at LIU 9 campuses, and to examine the relationship between service quality, students' satisfaction and students' loyalty.

The final version of Section C includes the seven proposed dimensions, each with a list of developed statements that characterizes the dimension and allows evaluating the corresponding performance and importance. The overall outline of the questionnaire Section C is as follows:

- 1) University Image and Reputation: This dimension includes 8 statements covering, university reputation (Randheer, 2015), if the university is student-focused (Clewes, 2003), university ranking (Mikhaylov and Mikhaylova, 2018), university recommendation (Petruzzellis et al., 2006), university internationalism (Sohail and Shaikh, 2004), support for charitable organizations (Hasan et al., 2008), media reports (Owino, 2013) and tuition payment assessment (Wardi and Trinanda, 2018).

- 2) Student Social Life on Campus: This dimension includes 2 statements covering, extracurricular activities (Lumley et al., 2015), and dynamic student life (Gatfield, 2000).
- 3) Quality of Teaching: This dimension includes 3 statements covering, commitment to academic excellence (Green, 2014), intellectually challenging courses (Hampton, 1993) and university curricula and programs (Sohail and Shaikh, 2004).
- 4) Student Interaction with Faculty: This dimension includes 5 statements covering, lecturers' consultation (Gatfield, 2000), lecturers' knowledge (Pereda et al., 2007), lecturers' efficiency (Fernandes, 2013), lecturers' stimulation of interest (Hampton, 1993) and interest of advisors in student progress (Hampton, 1993).
- 5) Student Interaction with Administration Staff: This dimension includes 5 statements covering, if administration staff are friendly (Miao and Bassham, 2006), if they show interest in solving problems (Nguyen and Leblanc, 2001), if they respond quickly (Waugh, 2002), if they keep students updated (Waugh, 2002) and if they have prompt action (Waugh, 2002).
- 6) Quality of Student Support Services: This dimension includes 16 statements covering, career services and advice (Engelland et al., 2000), financial assistance and scholarships (Hanaysha et al., 2012), registration and enrolment processes (Annamdevula and Bellamkonda, 2012), services security and confidentiality (Annamdevula and Bellamkonda, 2012), services correctness (Parasuraman et al., 1994) and flexible payment plans (Kahnal and Esmaili, 2015).
- 7) Campus Facilities: This dimension includes 17 statements covering, sport facilities (Abdullah and Mohamad, 2016), labs and software programs (Kara et al., 2016), internet services (Kara et al., 2016), library services (Kara et al., 2016), library opening hours (Kara et al., 2016), modern teaching support equipment (Kara et al., 2016), university accommodation (Radder and Han, 2009), accommodation prices (Radder and Han, 2009), accommodation safety (Radder and Han, 2009), parking areas (Deshwal et al., 2014), open campus areas (Athiyaman, 1997), university location (Saleem et al., 2017), campus safety (Hasan et al., 2008), university cafeteria services (El-Said and Fathy, 2015) and cafeteria prices (El-Said and Fathy, 2015).

The table in appendix B provides a reference for each of the questionnaire statements used, highlighting the basis of choosing each statement and referencing the study recommending and supporting each of them.

3.10.2 Piloting

The questionnaire presented in the previous section was reviewed by an expert panel and peers who were invited to comment on the questionnaire first draft. The second draft was then piloted using three focus groups of students. Finally, the questionnaire was piloted again and finalized, and it was then ready for distribution to students.

A panel consisting of fifteen experts in the field of education (Dean, Academic Director, Presidents of two universities, a Professor from University of Southern Denmark, four full time advisors and six Professors from two Schools at LIU) have reviewed the questionnaire first draft. The first draft included 56 items. The panel members were selected based on their experience and involvement in a wide range of academic and administrative services provided to students. Moreover, the collective decision of the panel would eliminate any form of researcher bias or own views. The panel evaluated the content to test face and content validity and some revisions were recommended along with main comments and suggestions. The first questionnaire draft was upgraded based on the received comments. Some statements were removed, others were added, and multiple statements were adjusted to be more appropriate for the Lebanese higher education context, and in line with the research objective. Major modifications implemented in the second draft compared to the first one include modifying statements under Section C as: A statement was added under the ‘Student Social Life on Campus’ dimension regarding making friends on campus, a statement was modified under the ‘Student Interaction with Faculty’ dimension regarding lectures answering course-related questions, few statements were modified, ten statements (statement 7 to statement 16, page 147 in appendix) were deleted under the ‘Quality of Student Support Services’ dimension and two statements (statement 16 and 17, page 149 in appendix) were deleted and a couple of the others were modified under the ‘Campus Facilities’ dimension. Moreover, concerning the relationship of the seven dimensions of service quality highlighted in this study, the expert panel has made a preliminary assessment. Their reported expectations stated that all of the dimensions would have a significant relationship with student satisfaction, except of the ‘Campus Facilities’ dimension, which they claimed it would have an insignificant relationship.

In addition, a whole review for the wording and format throughout the questionnaire was carried out. Thus, a second draft was developed with 48 items and then it was piloted. The piloting allowed the researcher to get feedback on the questionnaire content and questionnaire organization from 58 students (three focus groups formed of 19,19 and 20 students). Students in each focus group were informed about the purpose of the survey and were motivated to provide any comments about the questionnaire along with identifying any unclear or ambiguous question. The questionnaire took

around 20 minutes in average to be completed by a respondent. The general feedback from the three focus groups about the questionnaire was positive. The piloting study was completed, and results were examined. Based on the students' feedback, some revisions were implemented, and issues were addressed, leading to the final draft of the questionnaire (attached in the appendix).

3.11 Survey Administration and Data Collection

The Dean of Education School at LIU informed all faculty members about the intention and scope of the study through a common email with introductory information regarding the survey. The faculty members were informed one week before the survey was distributed that a number of courses will be selected, and they would be asked to allocate class time to assist in the administration and completion of the survey by their respective students.

Classes were selected through the proportionate stratified random sampling methodology. Each questionnaire was accompanied by a cover letter, which explained the purpose of the survey along with identifying the expected time for completion and assured the student of anonymity. The researcher read the script to students in class, assured anonymity again, requested that no question may be left unanswered and asked them not to complete the survey if they had already done so in another class. The same procedure was applied in the 9 campuses, as questionnaire were distributed in all the campuses at the beginning of the classes. The survey was distributed before the distribution of the midterm exams grades so that the student's assessment is not affected by the course grade. According to Dong and Lucey (2013), survey feedback shows a good correlation with the students' academic performance. In total, 1,223 questionnaires were surveyed, 107 returned questionnaires or failed to complete and return the respective questionnaire. Thus, a total of 1,116 questionnaires were employed in the assessment and analysis phase of this study.

3.12 Research Ethics

According to the British Educational Research Association (2011), the confidential and anonymous treatment of participant data is considered as the norm for conducting research. All researchers require the consideration of ethical dimensions of the corresponding research carried out, particularly where human subjects are involved. The ethical consideration that should be taken into account in this study concerns the maintenance of confidentiality and anonymity, which the researcher will ensure by not asking for any contact information from respondents. Matters such as data storage and confidentiality of responses were considered.

Ethical principles are important in research because ethical gaps can significantly harm students and the public. So, it is very important in the research involving humans to ensure that the potential participants fully understand what they are being asked to do, and that they are informed of any potentially negative consequences of such participation. In this study, the questionnaire first page has a short paragraph for informed consent. This includes a short introduction about the researcher background and the purpose of the study. In addition, it stresses that respondents' answers confidential and anonymous.

As for the focus group interviews (when piloting the survey), the interview's time length should be agreed upon beforehand. The interviewer must stay away from questions that may belittle the interviewee or lead to any embarrassment. This could stress the participant and interfere with the interview's purposes (Robson, 2002). The interviewee must also know that he has the right to abstain from answering any question that he finds inappropriate.

According to Staffordshire University guidelines (2014), research ethics is supported by the commonly agreed principles of ethical research (Association of Research Ethics Committees, 2013, p. 5). The major five principles of ethical research are presented below:

1. Autonomy: People taking part in the research must be made aware of the purpose behind the research and be allowed to participate without any compulsion or penalty for not participating. Individuals ought to have the capacity to withdraw whenever they want without justification and without the risk of any negative consequences emerging from their withdrawal. A paragraph was written on the questionnaire's first page stating clearly the research purpose and that participation is completely voluntary with no penalties for skipping the questionnaire completion.
2. Beneficence: This concerns the results of the carried-out research and the added value provided. In principle, valuable results must be provided by the research. In the current study, the beneficial outcomes are highlighted by the introduction of focused variables that would provide information concerning service quality and its contribution to students' satisfaction. In addition, the study will form a basis for service quality assessment within the Lebanese higher education, in addition to setting guidelines for leaders and managers within the education field.
3. Non-maleficence: Any conceivable harm must be kept away. The researcher considered whether there is any possibility for participants or potential participants to get harmed, attacked or abused, and didn't find any.

4. Confidentiality: Unless the participants agree or wish to have their voices heard and recognized, individual data must stay obscure to everyone except the researcher. The researcher considered the protection for participants' information, identity and privacy as a priority. Thus, no personal information will be released.
5. Integrity: Actual or potential conflicts of interest must be recognized by the researcher, and the research should be conducted in a way that recognizes the integrity of research. No conflict of interest was recognized and highlighted in this study.

In this investigation, there was no need for the full ethics approval form to be completed. This is because the study does not include controversial or sensitive topics, does not include animals, children (under 18 years of age) or vulnerable groups, there are no illegal activities linked to the investigation and it didn't receive any external funding. The fast track form was used instead.

3.13 Summary

This chapter provides a detailed research design, analysis and description aiming to develop a conceptual framework for a service quality model for quality evaluation within the Lebanese higher education sector. The research methodology is presented in detail with the corresponding characteristics and specifications. The ontology of objectivism is adopted, considering the aims and deliverables of the current investigation. Thus, the researcher strives to isolate his views and beliefs during the investigation, so he could attain the objectives and see the reality in a clear and unbiased perspective. In addition, the 5 major research questions derived in this study are presented, dealing with the major investigation aims and deliverables.

In terms of the research philosophy, the current study will embrace a positivistic methodology, following a hypothesis testing approach and employing assumptions. This choice is built on the claim that positivism subscribes to objectivism. Furthermore, the deductive research approach is selected, as the researcher aims to design and develop a hypothesis to be later tested and thus accepted or rejected. Following a deductive research approach, the current study will be characterised by an exploratory, descriptive and explanatory process.

Moreover, a case study of a private Lebanese university is selected in this investigation to implement and assess the service quality assessment model conceptual framework developed in this study. The LIU university, with its 9 campuses across the Lebanese districts, will serve as a field of investigation, data collection and analysis. As the study will encompass quantitative data connected to multiple variables, it was highlighted that the appropriate time horizon is cross-section.

Based on the study objectives and with the researcher aiming to draw generalized conclusions on the level of the holistic Lebanese higher education sector, a probability sampling technique was selected to collect data from respondents. The number of students' sample to be targeted in this study was estimated to be around 1343, considering a 30% safety factor.

Considering the proposed service quality assessment model with the seven dimensions highlighted in the previous chapter, a questionnaire was developed to collect data from students and aid in identifying and analysing the gap between the level of importance given by students to each service quality dimension proposed, and their perception of the current performance for each dimension. The questionnaire has 3 main sections, Section A with general questions regarding the respondent, Section B dealing mainly with students' satisfaction and loyalty and Section C with the seven proposed service quality dimensions and a list of associated statements. A 7-point Likert scale, ranking from 1 (strongly disagree) to 7 (strongly agree), where a midpoint (neutral) was used in both sections B and C.

Chapter 4 Case Study and Results Analysis

4.1 Introduction

Considering the research methodology developed and the approach highlighted in Chapter 3, this chapter will present the implementation of the research approach as well as results reporting, analysis, evaluation and assessment. As a part of this, a case study of a private Lebanese university, Lebanese International University (LIU) is highlighted and presented to implement and assess the service quality assessment and conceptual framework in this study. In addition, the questionnaire characterised and developed in Chapter 3 will be employed to aid the framework implementation. Data collected will be further analysed and evaluated. The data was prepared, coded and analysed. The Statistical Package for Social Sciences (SPSS) version 25 and SPSS AMOS are used for collected data preparation, cleaning, coding and analysis. In the evaluation and assessment phase, the objectives are:

1. To investigate and determine the impact of the service quality dimensions on students' satisfaction at LIU.
2. To examine the relationship between service quality, students' satisfaction and students' loyalty.
3. To investigate noted differences in service quality dimensions based on demographic characteristics.
4. To develop a conceptual framework for a service quality model for Higher Education Institutions in Lebanon.

Multiple approaches have been employed and conducted to aid the analysis and assessment in this study including descriptive statistical analysis, one-way analysis of variances (ANOVA), Levene's Test, regression analysis, Confirmatory Factor Analysis (CFA), Structural Equation Model (SEM). Each of these approaches and techniques is directly linked to one or more of the analysis objectives highlighted above. For instance, descriptive statistics is used to describe the study sample profile. ANOVA and Levene's tests are used to investigate the existence of differences in service quality dimensions based on demographic factors. In addition, regression analysis is used to test the

hypothesis and to determine the existence of relationships between various service quality dimensions, students' satisfaction and student's loyalty. Finally, IBM SPSS AMOS is employed to generate the output using CFA and SEM techniques.

4.2 Sample Demographic Characteristics

The developed questionnaire was administrated and completed by the students from 18 to 25 July 2018 in the 9 different campuses of the Lebanese International University in Lebanon. A total of 1,223 questionnaires were surveyed, and 1,116 completed questionnaires were characterised as useful to be employed as a basis for the assessment and analysis phase of this study. The characteristics and profile of the respondents is described in detail in Table 4.1, considering gender, age, marital status, dependents support and nationality. As expected, the majority of respondents are between 18 and 21 years old, almost 70%. The rest are as follows: 27% between 22 and 25 years old, and only 3% are older than 25. This is favourably supporting the parameters of the defined population (undergraduate students).

In terms of the gender, it was to some extent a balanced distribution with a slight excess weight for females with, 45% males and 55% females. It could be said that this provides a very good representation sample of the whole university students, as it aligns perfectly with the enrolment data for the defined population provided by the administration office.

Therefore, considering the reported numbers for the students' sample age and gender distribution, it could be noted that the sample selected covers the whole range of ages corresponding to students at LIU in addition to taking into account males and females' perspective with a balanced distribution to some extent.

Concerning the marital status, 89% of the respondents are single and the rest are either engaged, married or divorced/separated. Around 80% of the respondents has no dependents, meaning that there are no other family members relying on their income to be supported. Lebanese students constituted around 81% of the respondents, where 10% are Palestinians, 7% are Syrians in addition to a minority from Iraq and Yemen. Again, this distribution fits very well with the overall distribution of nationalities across the whole university. With around 19% of the surveyed students being foreigners, this is a very important point which could support the generalization of the obtained results and information. Moreover, LIU has multiple campuses outside Lebanon and thus hearing the views of foreigners in this investigation could aid and assist the overall university services improvement, both inside Lebanon and abroad.

Considering the different aspects analysed in Table 4.1, it can be concluded that the sample chosen represents very well the university students in terms of gender, marital status and age.

Table 4.1 Sample Demographic Characteristics

Sample Size		N = 1116	%100
		Frequency	Percent
Gender	Male	498	44.6%
	Female	618	55.4%
Age	18-21	782	70.1%
	22-25	301	27.0%
	More than 25	33	3.0%
Marital Status	Single	996	89.2%
	Engaged	82	7.3%
	Married	31	2.8%
	Divorced/Separated	7	0.6%
Dependents Support	No	888	79.6%
	Yes	228	20.4%
Nationality	Lebanese	907	81.3%
	Palestinian	116	10.4%
	Syrian	83	7.4%
	Other	10	0.9%
Employment Status	Part Time	735	65.9%
	Full Time	241	21.6%
	Not Employed	140	12.5%

4.3 Sample Academic Characteristics

As a distribution across LIU campuses, 33.6% of the respondents are from Beirut Campus, 13.6% from Bekaa Campus, 12.1% from Tripoli Campus, 10.5% from Saida Campus, 7.8% from Tyre Campus, 7.8% from Nabatiyeh Campus, 6.7% from Rayak Campus, 4.9% from Akkar, and 3% from Mount Lebanon Campus. It is noted from those percentages that the distribution is not balanced across the different LIU campuses. However, all campuses are covered and represented, even with small percentages for some campuses. In addition, away from the campus physical aspects, the majority of the campuses share the same type of services delivered on different levels. So, the unbalanced distribution between the different campuses is not a major hurdle for the study implementation.

On the other hand, 23% of the respondents were previously enrolled in another university. Campus location with 41.8% and financial aid offered with 18.5%, were the two main reasons reported for enrolment in the corresponding university campus. These supporting the two of the three main aspects

governing the choice of a university by a student in Lebanon. Besides the university reputation, the location of the campus is crucial as students are always looking for universities close to where they live. In addition, the economic aspect is key here, considering the whole country economic crisis and the increasing gap between the salaries and the life expenses.

Concerning the students major, 35.6% are studying business, 20.7% from the education course, 20.3% are engineering students, 17.1% are art and science students and 6.4% are pharmacy students. This is again a very important factor which could to some extent help in generalizing the results attained as students from various study majors are surveyed, where services level and type may differ from one major to another. Moreover, around 50.8% of the students surveyed have been in the university for a period ranging from 2 to 5 years, 37% of the students surveyed have been in the university for 1 year to less than 2 years, and the remaining were distributed as shown in table 4.2 below.. In addition, full time students represent around 78% of the total students taking part in the investigation. On a holistic level and based on the academic characteristics' analysis provided in Table 4.2, it is concluded that the sample population chosen is representative in terms of major, enrolment period and student status.

Table 4.2 Sample Academic Characteristics

Sample Size		N = 1116	%100
		Frequency	Percent
Campus	Beirut	375	33.6%
	Bekaa	152	13.6%
	Tripoli	135	12.1%
	Saida	117	10.5%
	Tyre	87	7.8%
	Nabatiyeh	87	7.8%
	Rayak	75	6.7%
	Akkar	55	4.9%
	Mount Lebanon	33	3.0%
Previous Enrolment in another University	No	860	77.1%
	Yes	256	22.9%
Reasons for Enrolment	Campus Location	467	41.8%
	Financial Aid Offered	206	18.5%
	Scholarship Award	104	9.3%
	Affordable Tuition	94	8.4%
	Influence of friends or family	81	7.3%
	Campus Facilities	65	5.8%
	Reputation	58	5.2%
	Entry Requirement	41	3.7%
Major	Business	397	35.6%
	Education	231	20.7%
	Engineering	226	20.3%
	Arts and Science	191	17.1%
	Pharmacy	71	6.4%

Enrolment period at the current University	2 to 5 years	567	50.8%
	1 to Less than 2 years	413	37.0%
	Less than 1 year	127	11.4%
	More than 5 years	9	0.8%
Student Status	Full Time	870	78.0%
	Part Time	246	22.0%
GPA	3-3.49	309	27.7%
	2.5-2.99	258	23.1%
	Above 3.5	240	21.5%
Funding Source	Family	644	57.7%
	Self	216	19.4%
	Scholarships from your University	77	6.9%
	Scholarships from other sources	70	6.3%
	Financial aids from your University	67	6.0%
	Employer	42	3.8%

4.4 Reliability Analysis

The notion of reliability revolves around whether the same research instrument consistently gives the same result if it is used to measure something twice (Heale and Twycross, 2015). For the measure of internal consistency (reliability), Cronbach Alpha is used. Cronbach's alpha reliability is one of the most common used measuring techniques of reliability (Cronbach, 1951). This approach was implemented in this study to test reliability, where Cronbach's alpha (α) was calculated for each service quality dimension and satisfaction. As a key condition, the internal consistency must be between 0.7 and 0.95 to be acceptable.

Table 4.3 Reliability Test Results

Factor	Number of items	Cronbach's alpha	Number of items deleted	Items deleted	Number of remaining items
Satisfaction	3	0.873	0	None	3
University Image and Reputation	8	0.734	2	image_reputation_P_7, image_reputation_P_8	6
Students Social Life on Campus	3	0.709	0	None	3
Interaction with Faculty score	5	0.843	0	None	5
Quality of Education	3	0.761	0	None	3
Interaction with Administrative Staff	5	0.873	0	None	5
Quality of Students Services Support	6	0.823	0	None	6
Campus Physical Facilities	15	0.840	0	None	15

In overall, the reliability analysis conducted seems to provide preliminary support for the homogeneity of the proposed scales. As seen in the reliability test results above, the Cronbach's Alpha exceeds 0.7 for all of the eight factors considered, ranging from 0.709 to 0.873. In addition, two items out of forty-eight were deleted, leading to forty-six items. The two deleted items are:

- Image_Reputation_P_7: *My University has partnerships with international universities.*
- Image_Reputation_P_8: *My University supports charitable organizations and/or organizes charitable events.*

4.5 The Satisfaction and Loyalty Scale

The satisfaction scale constitutes of three variables, measured on a seven-point scale, where (1) refers to strongly agree and (7) to strongly disagree. The Cronbach alpha of 0.873 attained for the Satisfaction factor shows that the three items included in the scale captures a single construct. The individual means are calculated for each of the three variables. The results have indicated a positive evaluation of the 3 items in the Satisfaction Scale.

To evaluate the attained results, around 69.2% of the students have chosen Somewhat Agree, Agree or Strongly Agree, to confirm their satisfaction and that they have truly enjoyed attending LIU. In addition, 76.3% of the students selected Somewhat Agree, Agree or Strongly Agree to highlight that their satisfaction with their decision to attend LIU. A similar percentage, 77.6% of the students somewhat agreed to strongly agreed that their choice to register at LIU was a good one. As for Loyalty scale, a single question represents the net promoter scale ranging from (0) not likely at all to (10) extremely likely. Around 78.7 % of the students is in the upper half of the scale with a mean of 7.13.

Considering the percentages provided above, it could be noted that between 70% and 77% of the students surveyed are satisfied with their enrolment at LIU. In addition, around 79% of the students shows their loyalty to attend and study at LIU. The results attained in this section provides a positive indication that LIU is to some extent succeeding in providing a good academic environment which is translated into high levels of students' satisfaction.

4.6 The Service Quality Scale

This section deals with 43 items for service quality evaluation. The dimensions are classified as follows:

- 6 items for University image and reputation

- 3 items for Student Social Life on Campus
- 5 items for Interaction with Faculty
- 3 items for Quality of Education
- 5 items for Interaction with Administrative Staff
- 6 items for Quality of Students Services Support
- 15 items for Campus Physical Facilities.

The scale of the service quality is 7 point-Likert scale ranging from (1) is strongly disagree to (7) strongly agree, where (0) characterises 'I don't know'.

4.6.1 University Image and Reputation – Performance

Around 76.34% of the students somewhat agree to strongly agree that LIU has a good reputation. Also, 77.6% of the students somewhat agree to strongly agree that LIU is student-focused, where 64.97% of the students somewhat agree to strongly agree that the ranking of LIU is high relative to other universities in Lebanon. In addition, around 66.03% of the students believe that it is important that the university is recommended by an alumnus, or their friends and family. Around 71.32% of the students somewhat agree to strongly agree that LIU has positive reports on media, and 63.98% of the students confirmed that the tuition they pay is worth the quality of services they are receiving from the university. On the other hand, 76.26% of the students somewhat agree to strongly agree that LIU has partnerships with international universities and 76.06% agreed that LIU supports charitable organizations and/or organizes charitable events.

In overall, and considering the students views on the LIU performance regarding the university image and reputation, it could be noted that generally students are satisfied and happy with the overall performance of the university in this field. The highest percentage was given to the points regarding LIU having a good image, the university being student-focused and the partnership with international universities. This is not strange in the current development in the academic sector, where networking and partnerships with other universities is crucial for everyone. On the other hand, there was a relatively lower percentage of students confirming that the tuition paid are worth the quality of services they get. This is a key point which could be considered and monitored by the university. If the percentage goes down in later stages, then this shows that university must lower the tuition fees to reduce the gap between the two aspects.

4.6.2 University Image and Reputation - Importance

Concerning the university image and reputation, around 78.4% of the students stated that it is moderately to extremely important for them that the university has a good reputation. In addition, 80.5% of the students think it is important that the university is student-focused, and 76.2% of the total students surveyed think it is important that the ranking of their university is high relative to other universities in Lebanon. Considering this point, it is worth mentioning that there is a fierce competition between a number of universities in Lebanon to attract students and provide the best service and facilities. On the other hand, 62.4% of the students stated that it is important to have the university recommended by an alumnus, friend or a member of the family. Regarding media impact, 74.1% of the students think it is important for university to have positive reports on media, and 76.3% of the students stated that it is important that the tuition they are paying is worth the quality of services received in the university. Moreover, 75% of the students think it is important that the university has good partnerships with international universities and 74.7% think it is important for their university to support charitable organizations as well as organizing charitable events.

In analysing the results attained, it could be noted that being a student-focused university is of higher importance with respect to students. And thus, LIU should strive to have the student as the point of focus and the driver is to improve every aspect of services delivered.

4.6.3 Student Social Life on Campus - Performance

In terms of the students' social life on campus, around 63% of the students somewhat agreed to strongly agreed that LIU has a variety of extracurricular activities. A similar percentage, 62.7%, also agrees that student's life on campus is dynamic. In addition, around 78.3% of the students somewhat agreed to strongly agreed that it is easy to make friends on Campus.

The results highlight that LIU provides a friendly environment allowing easy routes to making friends and peers. On the other hand, a 62% percentage is deemed to be a bit low when it comes to students' life on campus, and thus LIU could monitor this factor aiming to improve the dynamic aspect of the university life with additional activities on campus.

4.6.4 Student Social Life on Campus - Importance

Around 71.7% of the students stated that it is important for their university to have variety of extracurricular activities and 73.8% reported that it is important for the student life on campus to be dynamic. In addition, 77.6% think it is important to be able to easily make friends on campus.

In this case, the most important factor highlighted by students is making friends on campus, and this is a common aspect between different students on national and international perspectives, especially at the undergraduate level.

4.6.5 Student Interaction with Faculty - Performance

Regarding students' interaction with faculty, 79.7% of the students somewhat agreed to strongly agreed that they can easily contact their lecturer for advising and consultation. A higher percentage, 84.6%, somewhat agreed to strongly agreed that lecturers can answer most of their questions on the course content. On the other hand, 77.4% of the students somewhat agreed to strongly agreed that lecturers are efficient in providing feedback on their performance and progress, and 78.7% somewhat agree to strongly agrees that lecturers stimulate and maintains my interest in the course. On the item related to the academic advisors' interest in progress, 73.7% of the students confirmed to some extent that academic advisors are interested in their progress.

From a holistic perspective, this section scored high where the students in general believe that there is a good interaction between them and the faculty. It is important here to mention that the results include views of students from different majors, and this is supporting the claim that interaction of faculty and students is key in different faculties across LIU.

4.6.6 Student Interaction with Faculty - Importance

Around 83% of the students stated that it is important to have lecturers that are easily approachable for advising and consultation, and 87.3% stated that it is important for a lecturer to answer most of the questions on the course content. In addition, 80.9% of the students confirmed that it is important that the lecturers are efficient in providing feedback on their performance and progress, where 83.8% of the students think it is important that lecturers stimulate and maintain students' interest in the course. On the other hand, 81.3% of the students stated that it is important that academic advisors are interested in their progress.

Again, this section scores very high with percentages lying in the range of 80-88%, highlighting the importance of students-faculty interaction in different faculties and in various campuses across LIU.

4.6.7 Quality of Education - Performance

Regarding quality of teaching, 72.2% of the students somewhat agreed to strongly agreed that LIU has a commitment to academic excellence. In addition, 71.9% of the students confirmed that their courses are generally intellectually challenging, and around 73.1% agreed that the curricula and programs designed by the university are up-to-date.

The results attained shows that the students believe that LIU is to a certain extent succeeding in delivering an acceptable level in the quality of teaching.

4.6.8 Quality of Education - Importance

Around 82% of the students stated that it is important for the university to be committed to academic excellence and 78.8% of them reported that it is important for courses to be intellectually challenging. In addition, 83.4% of the students think it is important that the curricula and programs designed by the university are up-to-date.

A key point to consider in this section is the high percentage of students, 83.4%, highlighting that having up to date curricula across different study majors is of high importance. This is in line with LIU mission in implementing a continuous upgrade and update for the courses' curricula across the different faculties.

4.6.9 Students Interaction with Administration/Staff - Performance

In terms of the student's interaction with the administration and staff, around 67.2% of the students somewhat agreed to strongly agreed that administration staff are friendly. In addition, 69.2% of them confirmed that the administration staff shows sincere interest in solving their problems, where 66.5% of the students somewhat agreed to strongly agreed that administration staff responds quickly to their request for assistance. Moreover, 72.4% of the students somewhat agreed to strongly agreed that administration staff keeps students informed about when services will be performed, where 69.7% of the students reported that administration staff provides services at the promised time.

In overall, the majority of the students surveyed think that there is a good interaction between them and the administration staff. As the administration in the university has various levels, including major, department, faculty and whole university, a good interaction between students and administration staff is crucial for attaining the university goals and attaining students' satisfaction.

4.6.10 Students Interaction with Administration/Staff- Importance

Around 88.5% of the students think that it is important that administration staff is friendly, and 82.4% of them confirmed that it is important that administration staff shows sincere interest in solving their problems. In addition, 80.8% of the students reported that it is important that administration staff responds quickly to their request for assistance and similar percentage, 82% stated that it is important for administration staff to keep students informed about when services will be performed. Moreover, 81.5% of the students think it is important that the administration staff provides services at the promised staff.

This is another section where percentages were exceeding 80% for all the factors. This again highlights the importance of having a smooth interaction between students and administration staff at LIU, where having a friendly staff is the students' most important aspect.

4.6.11 Quality of Students Support Services- Performance

Regarding the quality of the students support services in the university, around 62.3% of the students somewhat agreed to strongly agreed that LIU provides helpful career services and advice. Moreover, 72.2% of the students confirmed that LIU offers variety of scholarships and financial assistance, where 75.6% of them confirmed that the university registration and enrolment processes are smooth and clear. In addition, 72.8% of the students somewhat agreed to strongly agreed that services are provided in a secure and confidential way, and a similar percentage, 72% of the students stated that services are provided correctly at the first time. On the other hand, 67.8% of the students reported that university payment plans are flexible.

Considering the results provided in this section, one aspect should be improved as highlighted by the students which is the career services and advice. It seems that only 62% of the students believe that the career services provide the required advice and help. With a competitive job and work environment, such factor is crucial for students.

4.6.12 Quality of Students Support Services- Importance

Around 81.3% of the students think it is important that LIU provides helpful career services and advice, and 82.9% stated that it is important for LIU to offer variety of scholarships and financial assistance. Moreover, 81.7% of the students reported that it is important that the university registration and enrolment processes are smooth and clear, where 78.5% of them believe it is important that

services are provided in a secure and confidential way. In addition, 80.5% of the students think it is important that services are correctly provided at the first time and 82.3% believe it is important that the university payment plans are flexible.

Analysing the results concerning the quality of students support services, students have listed all the factors in this section as being of high importance with a percentage lying within the range 78-83%. Flexible payment plans and offering scholarships and financial assistance are the most important aspect based on the students' views. This is again understandable and could be devoted to the problematic economic sector in the country and the increase in the life expenses.

4.6.13 Campus Physical Facilities - Performance

Regarding the campus physical facilities provided by LIU, the section below provides the full results of the investigation. Based on the attained results, it was found that only 44.7% of the students somewhat agreed to strongly agreed that LIU has modern sports facilities, where 69.4% of the students confirmed that LIU has a sufficient number of computer labs with the software programs they need. A low percentage of only 42.2% of the students agreed that LIU has good internet services, where 58% of the students somewhat agreed to strongly agreed that LIU library provides access to a wide number of academic journals and books. Regarding the library opening hours, 74.4% of the students reported that LIU library opening hours are generally convenient for them. In addition, 66.2% of the students somewhat agreed to strongly agreed that the classrooms have modern teaching support equipment such as projectors and computers.

On the other hand, a very low percentage of just 26.1% of the students agreed that LIU offers comfortable accommodation (dorms) while around 16.4% of the students responded as 'I don't know'. The reason for this is that many LIU campuses don't provide accommodation to students. Moreover, a very low percentage of just 25.5% of the students somewhat agreed to strongly agreed that LIU offers accommodation (dorms) at an affordable price while 18.7% responded as 'I don't know', and only 28.5% of the students agreed that LIU accommodation (dorms) is safe while 20.2% responded as 'I don't know'. The results were better in terms of campus parking and gardens, where 55% of the students reported that LIU offers parking areas for students and 72.9% of the students somewhat to strongly agreed that LIU has sufficient open campus areas and gardens. Considering the university campus location, 67.9% of the student somewhat to strongly agreed that the university is conveniently located. An acceptable percentage, 72.9% of the students, confirmed that they feel safe anywhere on campus. Finally, the feedback regarding the cafeteria services shows that 64.2% of the students are

satisfied with the university cafeteria food, where 59.2% of the student somewhat to strongly agreed that the cafeteria in university provides food at affordable prices.

This section seems the most problematic, considering the students answers. As the majority of the students think that the university library opening hours are convenient, the other factors under this section looks less encouraging. A major problem is related to the university accommodation where minor percentage of the students believe that they are affordable, safe and comfortable. So, this highlights that the university shall give more effort to improve the affordability and security of dorms. Apart from the dorms, other services that shall be improved based on the students' feedback are internet services and sport facilities. Considering the internet services, this is a common problem not only at the university level but also on the level of the whole country.

4.6.14 Campus Physical Facilities - Importance

Regarding the campus physical facilities provided by LIU, the section below provides the full results of the investigation. The results reported that only 66.8% of the students believe that it is important that LIU has modern sports facilities. A higher percentage, 79% of the students, think it is important that LIU has a sufficient number of computer labs with the software programs they need, where 77.7% of them believe it is important that LIU has good internet services. In addition, it was found that 71.9% of the students confirmed that it is important that LIU library provides access to a wide number of academic journals and books, and 73.1% of the students think it is important that LIU library opening hours are generally convenient for them. Regarding teaching support equipment, 79.7% of the students believe it is important that the classrooms have modern teaching support equipment such as projectors and computers.

In addition, 61.6 % of the students reported that it is important that LIU offers comfortable accommodation (dorms). A relatively lower percentage of only 60.9 % of the students stated that it is important that LIU offers accommodation (dorms) at an affordable price, and a comparable percentage thinks it is important that LIU accommodation (dorms) is safe. For the parking areas, 76.7 % of the students believe it is important that LIU offers parking areas for students. Nevertheless, 80.6 % of the students stated that it is important that LIU has sufficient open campus areas and gardens. In terms of the university campus location, 80.3% of the student reported that it is important that LIU is conveniently located, where 82.2% of the students think it is important that they feel safe anywhere on campus. Moreover, the university cafeteria scored high based on the feedback as 80.7% of the students confirmed that it is important that the cafeteria in university provides good food, and 78.7% of them believe it is important that the cafeteria in university provides food at affordable prices.

In analysing the results attained, it is surprising to see that the factors which have the lowest percentages in the importance scale with respect to the students are the ones related to accommodation. On the other hand, the factors which are listed as the most important by students are safety on campus, having open campus areas and gardens and good cafeteria food. Again, the security issue is a countrywide problem, as people barely feel safe regardless of the place, location or field. In terms of cafeteria food, this is also an expected important factor, considering the importance of having good and well-served meals for the Lebanese people in general.

4.7 Comparison by Demographic Groups

Demographic variables and personal factors all contribute to the variation in service quality dimensions on different levels and under various situations and circumstances. In this section, a comparison of the different demographic variables against the seven dimensions of service quality is performed and reported. In this case, service quality dimensions will be the dependent variables when compared against demographic variables. The main factors of “Performance” data were tested for statistical significance among different demographic groups.

4.7.1 Comparison by Age Groups

The first comparison carried out was to investigate the impact of age groups on the different selected service quality dimensions. As reported in the results, the mean for all the age groups for the different service quality dimensions is greater than 4.69, on a 7-points Likert scale. Considering that 1 represents Strongly Disagree and 7 highlights Strongly Agree, the mean attained in this case is just above average and thus indicates a slightly positive impact.

Anova test was used to compare the means of age groups of different factors. However, in the cases where the Levene’s test indicated a significant difference among the variance, Anova test was substituted by the implementation of Kruskal-Wallis test for comparison.

As noted in the attained results, all the P-values are greater than 0.05 indicating no significant difference between age groups for any factor or score. The results align very well with the findings of Carey et al., (2002), who stated that the age factor is not related to the perception of satisfaction. Also, the reported evaluation is in line with the findings of Ham and Hayduk (2003) who reported that age has no significant relationship with service quality.

4.7.2 Comparison by Gender

The second comparison carried out was to investigate the impact of student's gender on the different selected service quality dimensions. The T-test was used for comparison and it was found that the means for males and females are very close.

Considering the independent sample test performed, the only significant difference between males and females was for the 'Students Social Life on Campus' dimension, with P-value = 0.003. As for satisfaction, females are more satisfied compared to males. Thus, the findings of this study don't stress that the gender factor has a major impact on the perceived service quality. The results attained in this investigation are to some extent different in comparison to the findings of several previous investigations. Such investigations have reported a significant relationship between gender and perceived service quality (Soutar & McNeil, 1996; Oldfield & Baron, 2000; Umbach & Porter, 2002; Perry et al., 2003; Tessema et al., 2012). The reason to having different findings in this investigation could be the gender equilibrium policy adopted at LIU which identifies clear guidelines to attain a full equilibrium between men and women at different levels at the university. Therefore, it could be hard to differentiate between the two genders views towards service quality.

4.7.3 Comparison by University Campus

In addition, a comparison between the different selected service quality dimensions against university campus is performed. Considering the calculated mean for each case, the evaluation of performance was in general positive for all campuses except for Campus facilities where Akkar Campus had the most positive satisfaction level among students in LIU. In addition, the Anova and Kruskal-Wallis tests were used in a similar way to compare the means of performance factors between different campuses. The results indicated a significant mean difference between Campuses along 6 of the 7 service quality dimensions. Only the Quality of Education shows no Significant difference between campuses.

Table 4.4 provides ranking of students' satisfaction across different LIU campuses in relation to service quality dimensions. In comparing the performance, the 9 LIU campuses, students reported the highest satisfaction regarding Social Life on Campus in Akkar Campus, where Mount Lebanon campus have exhibited the highest satisfaction regarding Interaction with Administrative Staff. In addition, students reported the highest satisfaction regarding Quality of Students Services Support in Akkar Campus, and the Bekaa campus scored the highest in terms of Campus Physical Facilities.

Moreover, Students reported the highest satisfaction regarding University Image and Reputation as well as the Interaction with Faculty in Akkar Campus.

Considering the attained results, it is obvious that the students at Akkar Campus are relatively more satisfied regarding the campus services compared to the other campuses, as Akkar Campus ranks first in 4 out of 6 dimensions. On the other hand, students at the Tripoli Campus seems to be the least satisfied where the campus is never higher in ranking and ranks the last in 3 out of 6 dimensions. These results could provide a very useful insight for LIU considering the performance of different campuses and could aid the university in allocation resources and efforts to implement a collective improvement process for the quality of services on a whole university level.

Table 4.4 Comparison of students' satisfaction across different LIU campuses in relation to service quality dimensions

	Students Social Life on Campus score / performance	Interaction with Administration Staff, Interaction with Administrative Staff score / performance	Quality of Students Services Support score / performance	Campus Physical Facilities score / performance	University Image and Reputation Score/ performance	Interaction with Faculty score / performance
P-value	0.002	0.02	0.036	0.000	0.000	0.007
	University Campus Ranking					
1	Akkar	Mount Leb	Akkar	Bekaa	Akkar	Akkar
2	Bekaa	Akkar	Rayak	Akkar	Mount Leb	Mount Leb
3	Rayak	Tyre	Mount Leb	Mount Leb	Nabatiyeh	Rayak
4	Tyre	Rayak	Beirut	Rayak	Tyre	Tyre
5	Nabatiyeh	Nabatiyeh	Saida	Nabatiyeh	Rayak	Saida
6	Saida	Saida	Nabatiyeh	Beirut	Saida	Nabatiyeh
7	Beirut	Tripoli	Bekaa	Saida	Tripoli	Bekaa
8	Mount Leb	Beirut	Tyre	Tyre	Beirut	Tripoli
9	Tripoli	Bekaa	Tripoli	Tripoli	Bekaa	Beirut

4.7.4 Comparison by Marital Status

A comparison between the different selected service quality dimensions against students' marital status is carried out. Considering the means calculated and the T-test results reported, it could be noted

that none of the means difference is significant in terms of the marital status factor, as all the P-values are greater than 0.05. This is in line with Oyewole (2001), Sivesan and Karunanithy (2013), Melkins et al. (2014).

4.7.5 Comparison by Enrolment Period

Also, a comparison between the different selected service quality dimensions against the students' enrolment period in the university is conducted. Based on the results for mean calculations presented, it is shown that there is no major difference in the students' point of view considering different enrolment periods at the university.

In their study, Oldfield and Baron, 2000, highlighted that the final year students' perception of service quality was lower than the perception of the first-year students. However, in this study, and considering the results presented for the Anova test and Kruskal-Wallis test results, it could be concluded that there is no significant difference among enrolment period groups regarding any of the service quality dimensions highlighted.

4.7.6 Comparison by Study Major

A study carried out by Abouchedid and Nasser (2002) on assuring quality service in private universities in Lebanon, showed that students of different study majors have different satisfaction levels. So, the impact of study major on the different selected service quality dimensions against students' study major is investigated. As noted in the results presented for mean calculations along with the Anova tests results, there was a significant difference between the means of different majors, only with dimension Campus Physical Facilities with P-value = 0.012. In addition, it was shown that students from the school of Business gave higher ratings on the satisfaction for Campus facilities than students from the faculty of Engineering. The study also highlighted that students from the faculty of Engineering have higher satisfaction levels compared to students from the faculty of Education, followed by Arts and Science and Pharmacy.

4.7.7 Comparison by Student Status

Moreover, a comparison between the different selected service quality dimensions against student status is completed. It is noted that there is only a very slight difference in the calculated mean in the cases concerning full time and part time students. This was supported by a T-test aiming to compare the means of the two groups. This could be devoted to the special case of Lebanon, where part time

and full-time students are equally devoted and loyal to the university academic promotion and success. However, students tend to go for a part time study, as they must work in the rest of the time to support themselves and their families.

4.7.8 Comparison by Student GPA

In addition, a comparison is done between the different selected service quality dimensions against student GPA. Again, in this case, the means seem to be very close for different GPA rate students. Thus, Anova and Kruskal Wallis tests were conducted as well to compare the attained means statistically.

Considering the results attained for the conducted ANOVA and Kruskal-Wallis tests, significant difference was found concerning the satisfaction levels of students of different GPAs. These findings are supported by the study of Low (2000) who found a positive relationship between satisfaction and grade point averages (GPAs). Similarly, according to Lyons and Pamela (1999) GPA is closely related to satisfaction. Students with a GPA higher than 3.5 are found to be the most satisfied among the different groups of students with a mean of 5.65 on a scale of 7.

4.7.9 Comparison by Funding Source

Students tend to be more conscious of the service they receive when they are paying their own tuition (Oldfield & Baron, 2000). Therefore, a comparison between the different selected service quality dimensions against student funding source is carried out. In addition, Anova and Kruskal Wallis tests were performed to compare the means statistically.

Considering the results of both ANOVA and Kruskal-Wallis tests, it is noted that there is no significant difference among students with different funding sources as all P-values are greater than 0.05.

4.8 Relationship between Customer Satisfaction and Loyalty

The relationship between the customer satisfaction and loyalty has been investigated in this study, considering the case under study. Based on the results attained in Table 4.5, it was found that there is a significant positive correlation between Customer Satisfaction and University Recommendation. If students are satisfied, they tend to recommend their university to friends and families. This is in line

with Dick and Basu (1994) and Woodcock et al. (2003) who stated that satisfaction is a key determinant of loyalty.

Table 4.5 Customer satisfaction vs University recommendation

			University recommendation.	Satisfaction Score
Spearman's rho	University recommendation	Correlation Coefficient	1.000	.624**
		Sig. (2-tailed)		0.000
		N	1044	1044
	Satisfaction Score	Correlation Coefficient	.624**	1.000
		Sig. (2-tailed)	0.000	
		N	1044	1044

** . Correlation is significant at the 0.01 level (2-tailed).

4.9 Importance-Performance Model Matrix

Table 4.6 provides detailed assessment on the top 20 service quality attributes based on the Importance ranking. The attributes were first ranked in descending order from most important to least important. Then the mean of performance for the top 20 important service quality attributes was evaluated. The full list of attributes with a detailed assessment of each is shown in Table 4.6 in Appendix.

Table 4.6 Evaluation of the top 20 important service quality attributes

Item	N-Importance	Mean-Importance	Rank -Importance	N-Performance	Mean -Performance	Rank -Performance
Interaction with faculty: Lecturers can answer most of my questions on the course content.	984	6.05	1	1044	5.77	1
Quality of education: The curricula and programs designed by the university are up- to date.	984	6.00	2	1044	5.48	9
Interaction with faculty: I can easily contact my lecturers for advising and consultation.	984	5.97	3	1044	5.69	2
Student support: My university payment plans are flexible.	984	5.96	4	1044	5.31	21
Student support: My university offers a variety of scholarships and financial assistance.	984	5.95	5	1044	5.40	15
interaction with faculty: Lecturers are efficient in providing feedback on my performance and progress.	984	5.93	6	1044	5.58	5
Interaction: Administration staff shows sincere interest in solving my problems.	984	5.93	7	1044	5.20	24
Facilities: I feel safe anywhere on campus.	984	5.92	8	1044	5.43	12
Interaction with faculty: Lecturers stimulates and maintains my interest in the course.	984	5.91	9	1044	5.58	4
Quality of education: In my university, I feel there is a commitment to academic excellence.	984	5.91	10	1017	5.41	14
Interaction with faculty: Academic advisors are interested in my progress.	984	5.90	11	1044	5.52	7
Interaction: Administration staff provides services at the promised time.	984	5.89	12	1044	5.31	20
Facilities: My university has sufficient open campus areas and gardens.	984	5.88	13	1036	4.95	37
Student support: My university provides helpful career services and advice.	984	5.86	14	1044	5.10	30
Facilities: My university is conveniently located.	984	5.86	15	1044	5.19	25

Facilities: My university has good internet services.	984	5.86	16	1017	4.04	44
Interaction: Administration Staff keeps students informed about when services will be performed.	984	5.85	17	1044	5.36	18
Student support: Registration and enrolment processes are smooth and clear.	984	5.85	18	1044	5.46	10
Interaction: Administration staff responds quickly to my request for assistance.	984	5.85	19	1044	5.16	27
Facilities: The cafeteria in my university provides good food.	984	5.85	20	1021	5.06	34

For the attribute, “Lecturers can answer most of my questions on the course content, it was noted that its Performance ranking perfectly matches its Importance ranking. However, for the other 19 important service quality attributes among the top 20 as rated and evaluated by respondents, a negative gap was reported, meaning that Importance exceeds Performance rating (Importance > Performance). Considering this evaluation, it is beneficial to plot the Importance vs Performance matrix to identify areas where the university needs to prioritize and should allocate more resources. The Importance vs Performance matrix is shown in Fig. 4.1.

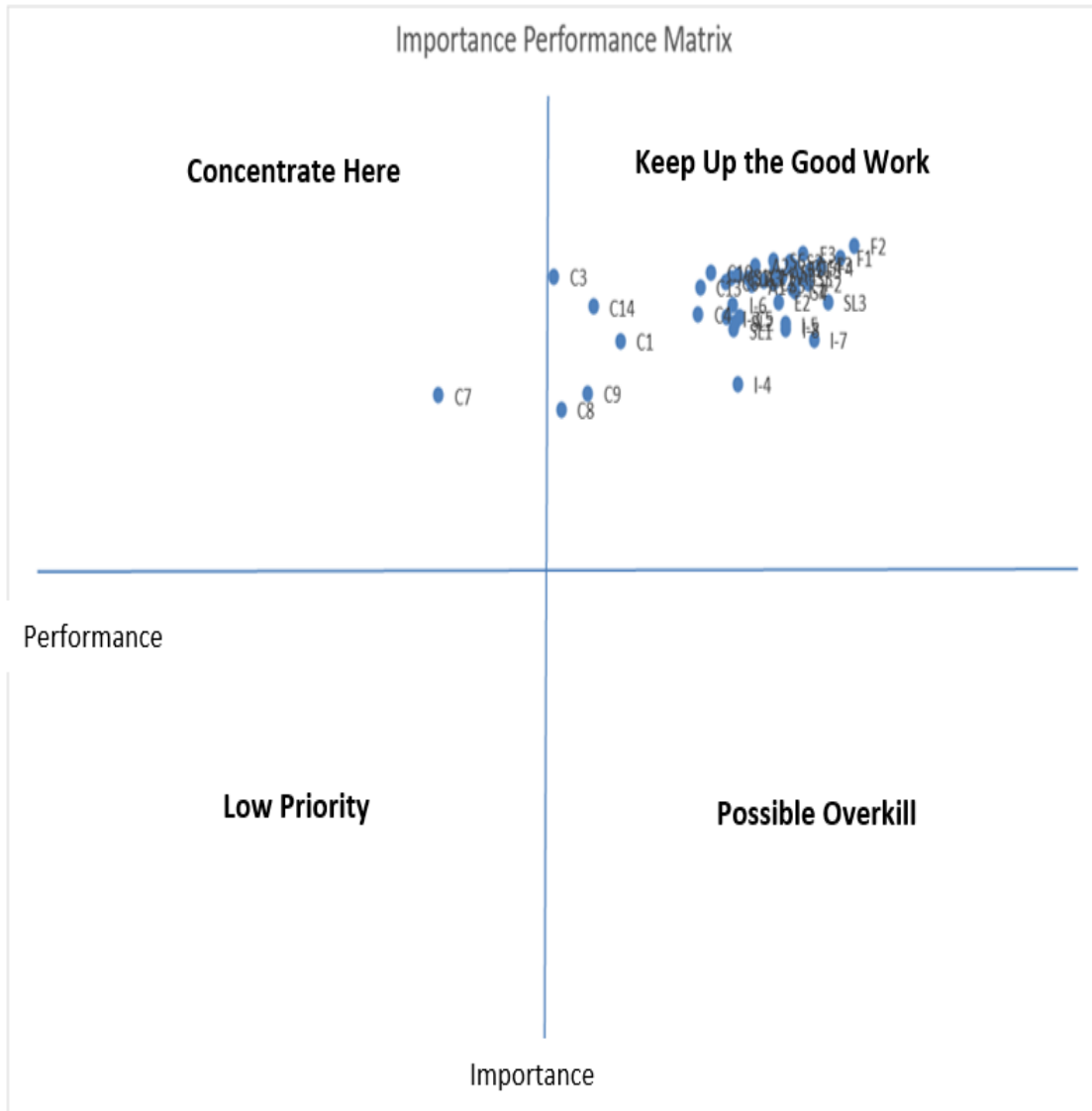


Figure 4.1 Importance – Performance Matrix

In “concentrate here” quadrant, the quadrant on the northwest of the matrix above, students perceive the service quality attributes as very important, but the performance levels are below average. Attribute (C7) which is offering comfortable accommodation (dorms), falls in this quadrant, suggesting that further improvements should be done by the university to provide students with comfortable accommodation in the future. Also, attributes (C3) and (C8), which are good internet services and offering affordable accommodation, seems also to be in need for further improvements as they are almost near the ‘Concentrate here’ quadrant. Other attributes are also close to ‘Concentrate here’ quadrant as (C1), (C9) and (C14), corresponding to having modern sports facilities, safe accommodation and parking areas for students. Therefore, the university should improve the current

delivery of these service quality items; otherwise these services might risk the falling into “Concentrate here” quadrant.

On the other hand, none of the services lies in “low priority” quadrant, where students perceive the university having partnerships with international universities as of low importance and they are as well not satisfied by their university performance. But the university could fix this later as the priority is to focus more on “concentrate here” quadrant. Also, none of the services fall in ‘possible overkill’ quadrant, where attributes are considered as of low importance, but the university performance is very high. For such services, no need for further efforts or allocation of more resources to improve these quality attributes.

In “keep up the good work” quadrant, service quality attributes are considered very important by respondents and they are satisfied by these service items. The remaining 42 service attribute are within this quadrant.

4.10 Structural Equation Model (SEM)

4.10.1 Overview of the SEM

Structural equation modelling (SEM) is a comprehensive statistical modelling tool for analysing multivariate data involving complex relationships between variables (Hoyle, 1995). Opposite to traditional regression models, SEM allows including multiple independent and dependent variables to test associated hypotheses about relationships among various observed and latent variables. SEM has a high capability to explain the reasons behind the results, while reducing misleading results by submitting all variables in the model to measurement error or uncontrolled variation of the measured variables. Some of the common terminologies used in the SEM technique include:

- Exogenous Variables: Variables that are independent and not influenced by other variables in the model
- Endogenous Variables: Variables that are caused by other variables in the model
- Indicator Variables: Variables that are directly observed and measured
- Latent Variables: Variables that are not directly measured
- Measurement Model: Part of the entire structural equation model diagram hypothesized for the study including all observations that load onto the latent variable, their relationships, variances, and errors

- Structural Model: Part of the total hypothesized structural equation model diagram, including both latent and indicator variables
- Structural Equation Model: A model combining the structural model and the measurement model, including everything that has been measured and observed among the variables examined.

In the Structural Equation Modelling techniques, latent variables are depicted with circles, where indicator variables are represented with squares. Lines with arrows in one direction represent a hypothesized direct relationship between two variables. A curved line with arrows in both directions shows a covariance between two variables. On the other hand, only exogenous variables have covariance arrows, while endogenous variables should always have a residual term which is depicted by a circle with the letter E written inside, standing for ERROR. The error term in the endogenous latent variable is called a disturbance and it is depicted by a circle with a letter D inside (Byrne, 2010). Moreover, parameters are the variances, regression coefficients and covariances among variables. Variances are indicated by a two-headed arrow with both ends of the arrow pointing at the same variable, while regression coefficients are depicted along single-headed arrows indicating a hypothesized pathway between two variables. Finally, covariances are represented by double-headed, curved arrows between two variables or error terms.

4.10.2 SEM Sample Size

Structural Equations Modelling (SEM) requires a sample which is large enough in order to provide reliable results for testing the model under investigation. According to Mueller (1997), the ratio of the number of cases to the number of observed variables is recommended to be at least 10:1. For the case of the considered model in this study, the number of observed variables is 48 where the number of cases is 1116. Therefore, evaluating the ratio of the number of cases / number of observed variables will lead to $1116/48 = 23.25$. Considering that the attained ratio is approximately 23:1, then the SEM analysis can be conducted effectively in the current study and reliable results are achievable.

4.10.3 Missing Data

Missing data has not been an issue in the current analysis. This is attributed to the developed questionnaire script which prevented any missing values as answering all survey questions was set to be mandatory. Thus, no missing data was reported. For the Structural Equation Modelling (SEM)

technique, the answer ‘Don’t know’ was introduced as a missing value.

4.10.4 Checking for Outliers

To improve the quality of the collected data, a statistical method of assessing the multivariate outliers was used. The statistical method employed is implemented through computing each case’s Mahalanobis distance. The Mahalanobis distance statistic D^2 measures the multivariate distance between each case and the group multivariate mean. Referring to the χ^2 distribution table, at $p = 0.001$ level of significance and degrees of freedom equal number of measurement items (48), $\chi^2 = 84.037$. According to Tabachnick and Fidell (2001), a case is said to be characterized as a multivariate outlier if the probability associated to its D^2 is equal to 0.001 or less. Using Mahalanobis D^2 to detect multivariate outliers has identified 72 cases being significantly different. Therefore, 72 respondents were deleted to refine the data and the remaining 1044 respondents were used for the final hypothesis tests.

4.10.5 Normality Test Results

To test for the Normality of the variables, skewness and kurtosis were calculated. Skewness is the measure of the symmetry of a distribution and kurtosis is the measure of the flatness of a distribution (Tabachnick and Fidell, 2001). A distribution is regarded to be normal when the values of skewness and kurtosis are equal to zero. According to Tabachnick and Fidell (2001), in order for the variables to be normally distributed, the skewness and kurtosis values should be within the range of - 2 to +2.

As seen in Table 4.7, the results indicated that all the variables have Skewness and Kurtosis within the range -2 to +2. Therefore, the maximum likelihood estimation can be used in testing the structural model in this study (Hair *et al.*, 1998).

Table 4.7 Skewness and Kurtosis evaluation for all variables

Variable	N	Skewness	Kurtosis
I have truly enjoyed attending this university.	1044	-1.04	0.87
I am satisfied with my decision to attend this university	1044	-1.24	1.67
My choice to enrol at this university was a good one.	1044	-1.23	1.60
My university has a good reputation.	1044	-1.07	1.26

My university is student-focused.	1044	-0.89	0.61
The ranking of my university is high relative to other universities in Lebanon.	1044	-0.59	0.13
This university has been recommended to me by alumni or a friend or family.	1044	-0.71	0.19
Media reports on the university are generally positive.	993	-0.70	0.34
The tuition I pay is worth the quality of services I am receiving from my university.	1044	-0.67	-0.06
My university has partnerships with international universities.	1044	-0.76	0.16
My university supports charitable organizations and/or organizes charitable events.	1039	-0.74	0.22
My university has a variety of extracurricular activities.	1044	-0.70	-0.08
Student life on campus is dynamic.	1041	-0.65	0.15
It is easy to make friends on campus.	1044	-1.16	1.21
I can easily contact my lecturers for advising and consultation.	1044	-1.13	1.27
Lecturers can answer most of my questions on the course content.	1044	-0.96	0.84
Lecturers are efficient in providing feedback on my performance and progress.	1044	-0.71	0.07
Lecturers stimulates and maintains my interest in the course.	1044	-0.76	0.35
Academic advisors are interested in my progress.	1044	-0.80	0.24
In my university, I feel there is a commitment to academic excellence.	1017	-0.79	0.52
My courses are generally intellectually challenging.	1044	-0.50	-0.06
The curricula and programs designed by the university are up- to date.	1044	-0.79	0.38
Administration staff is friendly.	1044	-0.89	0.45
Administration staff shows sincere interest in solving my problems.	1044	-0.78	0.43
Administration staff responds quickly to my request for assistance.	1044	-0.61	0.05
Administration Staff keeps students informed about when services will be performed.	1044	-0.80	0.62
Administration staff provides services at the promised time.	1044	-0.84	0.58
My university provides helpful career services and advice.	1044	-0.56	-0.10
My university offers a variety of scholarships and financial assistance.	1044	-0.85	0.39
Registration and enrolment processes are smooth and clear.	1044	-1.01	1.17
Services are provided in a secure and confidential way.	1044	-0.56	-0.05
Services are provided correctly at the first time.	1044	-0.67	0.37
My university payment plans are flexible.	1044	-0.77	0.17
My university has modern sports facilities.	977	-0.36	-0.77

My university has a sufficient number of computer labs with the software programs I need.	1019	-0.88	0.38
My university has good internet services.	1017	-0.24	-1.16
My university library provides access to a wide number of academic journals and books.	1044	-0.50	-0.10
My university library opening hours are generally convenient for me.	1031	-0.69	0.19
The classrooms have modern teaching support equipment such as projectors and computers.	1044	-0.79	0.17
My university offers comfortable accommodation (dorms).	861	0.14	-1.44
My university offers accommodation (dorms) at an affordable price.	835	-0.35	-0.35
My university accommodation (dorms) is safe.	819	-0.43	-0.16
My university has sufficient open campus areas and gardens.	1036	-0.71	-0.24
My university is conveniently located.	1044	-0.89	0.39
The cafeteria in my university provides good food.	1021	-0.78	0.00
The cafeteria in my university provides food at affordable prices.	1023	-0.72	-0.09
My university offers parking areas for students.	1044	-0.26	-1.43
I feel safe anywhere on campus.	1044	-0.98	0.51

4.10.6 Linearity Test

In data analysis, Linearity means that the two variables under question, "A" and "B," are proportionally related by a mathematical function "A = xB," where "x" is any constant number to be identified. The Statistical Package for Social Sciences (SPSS) version 25 was used to study the linearity between couples of independent and dependent variables. As the test for linearity leads to a significance value smaller than 0.05, this indicates that there is a linear relationship in all the studied cases as shown in Table 4.8.

Table 4.8 Linearity test outcome

Independent variable	Dependent Variable	Linearity test P-value
University Image and Reputation Score/ performance	Satisfaction Score	0.00
Students Social Life on Campus score / performance	Satisfaction Score	0.00
Interaction with Faculty score / performance	Satisfaction Score	0.00

Quality of Education score / performance	Satisfaction Score	0.00
Interaction with Administrative Staff score / performance	Satisfaction Score	0.00
Quality of Students Services Support score / performance	Satisfaction Score	0.00
Campus Physical Facilities score / performance	Satisfaction Score	0.00

4.11 Confirmatory Factor Analysis (CFA)

4.11.1 Confirmatory Factor Analysis Basics

Since the measurement model aims to improve the model before the estimation of the hypothesized model, the standardized regression weights for the research indicators were first examined by conducting the confirmatory factor analysis (CFA) for each variable. Using factor loading technique, seven of the items was deleted. Items that have loaded more than 0.50 on their underlying construct are kept and items which have loaded less than 0.5 have been deleted. In general, the attained loads are satisfactory and acceptable (Byrne, 2010 and Hair et al., 2010). Therefore, all the indicators in the present study are related to their particular constructs and there is a satisfactory proof of the convergence validity of the model.

A key factor to consider when implementing Structural Equation Modelling is to determine to what extent does a hypothesized data “fit”, or in other words, if the hypothesized data adequately and satisfactory describes the sample data. Ideally, the evaluation of a model fit should be considered from a variety of perspectives, where the evaluation shall consider various criteria that assess model fit.

An R Square = 0.319 was attained. Moreover, it was concluded that the seven service quality dimensions suggested in this study are devoted to around 32% of the variation in the dependent variable (Satisfaction). The fitness is in general acceptable and satisfactory. This is supported by the values of the CFI and TLI indices.

4.11.2 CFA for Satisfaction

This scale consists of three items, where none of the items were removed as the standardized regression weight for all indicators is higher than 0.5. Considering the analysis results attained, the factor loadings of the observed variables ranged from 0.82 to 0.86 and were statistically significant. This provides a clear evidence of validity.

Table 4.9 CFA Results for Satisfaction

Standardized Regression Weights: (Group number 1 - Default model)				
			Estimate	P-value
Satisfaction_1	<---	Students Satisfaction	0.817	***
Satisfaction_2	<---	Students Satisfaction	0.859	***
Satisfaction_3	<---	Students Satisfaction	0.829	***
***Significant at level of 0.001; P-value at level of 0.05				

In addition, the lowest factor loading was for: Satisfaction_1: I have truly enjoyed attending this university, where the highest factor loading was for: Satisfaction_2: I am satisfied with my decision to attend this university.

4.11.3 CFA for University Image and Reputation

This scale consists of eight items, of which two were removed based on the reliability analysis results. Of the six remaining items, two items were removed due to low factor load, below 0.5. The two removed items are:

- image_reputation_P_6: The tuition I pay is worth the quality of services I am receiving from my university.
- image_reputation_P_4: This University has been recommended to me by alumni or a friend or family.

Table 4.10 CFA Results for University Image and Reputation

Standardized Regression Weights: (Group number 1 - Default model)			
			Estimate
image_reputation_P_1	<---	University Image and Reputation	0.76
image_reputation_P_2	<---	University Image and Reputation	0.66
image_reputation_P_3	<---	University Image and Reputation	0.58
image_reputation_P_4	<---	University Image and Reputation	0.458
image_reputation_P_5	<---	University Image and Reputation	0.52
image_reputation_P_6	<---	University Image and Reputation	0.435

Based on the attained results, the factor loadings of the remaining observed variables ranged from 0.52 to 0.76 and were statistically significant. This provides good evidence of validity. On the other hand, the highest factor loading was for: image_reputation_P_1: My university has a good reputation.

4.11.4 CFA for Quality of Students Services Support

This scale comprises six items. None of these items was removed as the standardized regression weight for all indicators is higher than 0.5. The results showed that the factor loadings of the observed variables ranged from 0.56 to 0.78 and were statistically significant. This provides evidence of validity.

Table 4.11 CFA Results for Quality of Students Services Support

Standardized Regression Weights: (Group number 1 - Default model)			
Studentsupport_P_1	<---	Quality of Students Services Support	0.57
Studentsupport_P_2	<---	Quality of Students Services Support	0.61
Studentsupport_P_3	<---	Quality of Students Services Support	0.78
Studentsupport_P_4	<---	Quality of Students Services Support	0.73
Studentsupport_P_5	<---	Quality of Students Services Support	0.71
Studentsupport_P_6	<---	Quality of Students Services Support	0.60

Moreover, the highest factor loading was for: Studentsupport_P_3: Registration and enrolment processes are smooth and clear, where the lowest factor loading was for: Studentsupport_P_1: My university provides helpful career services and advice.

4.11.5 CFA for Quality of Education

This scale comprises three items, and none were removed as the standardized regression weight for all indicators was found to be higher than 0.5. The results for the factor loadings of the observed variables ranged from 0.68 to 0.77 and were statistically significant. This shows a clear evidence of validity.

Table 4.12 CFA Results for Quality of Education

Standardized Regression Weights: (Group number 1 - Default model)			
			Estimate
Qualityofteducation_P_1	<---	Quality of Education	0.70
Qualityofteducation_P_2	<---	Quality of Education	0.77
Qualityofteducation_P_3	<---	Quality of Education	0.68

Based on the analysis carried out, the lowest factor loading was for: Qualityofteducation_P_3: The curricula and programs designed by the university are up- to date. Moreover, the highest factor loading was for: Qualityofteducation_P_2: My courses are generally intellectually challenging.

4.11.6 CFA for Campus Physical Facilities

This scale consists of fifteen items. Of the fifteen items, five items were removed due to the reported low factor load which is below 0.5. The five items are:

- facilities_P_7: My University offers comfortable accommodation (dorms).
- facilities_P_8: My University offers accommodation (dorms) at an affordable price.
- facilities_P_9: My university accommodation (dorms) is safe.
- facilities_P_14: My University offers parking areas for students.
- facilities_P_15: I feel safe anywhere on campus.

Table 4.13 CFA Results for Campus Physical Facilities

Standardized Regression Weights: (Group number 1 - Default model)			
			Estimate
facilities_P_1	<---	Campus Physical Facilities	0.62
facilities_P_2	<---	Campus Physical Facilities	0.67
facilities_P_3	<---	Campus Physical Facilities	0.59
facilities_P_4	<---	Campus Physical Facilities	0.70
facilities_P_5	<---	Campus Physical Facilities	0.59
facilities_P_6	<---	Campus Physical Facilities	0.64
facilities_P_7	<---	Campus Physical Facilities	0.268
facilities_P_8	<---	Campus Physical Facilities	0.363
facilities_P_9	<---	Campus Physical Facilities	0.403
facilities_P_10	<---	Campus Physical Facilities	0.63
facilities_P_11	<---	Campus Physical Facilities	0.58
facilities_P_12	<---	Campus Physical Facilities	0.57
facilities_P_13	<---	Campus Physical Facilities	0.51
facilities_P_14	<---	Campus Physical Facilities	0.08
facilities_P_15	<---	Campus Physical Facilities	0.117

As presented in the results attained, the factor loadings of the remaining observed variables ranged from 0.51 to 0.70 and were statistically significant. This provides a good evidence of validity. On the other hand, the highest factor loading was for: facilities_P_4: My university library provides access to a wide number of academic journals and books.

4.11.7 CFA for Students Social Life on Campus

This scale consists of three items and none of them was omitted. Based on the attained results, the factor loadings of the observed variables ranged from 0.48 to 0.87 and were statistically significant. This provides a good evidence of validity.

Table 4.14 CFA Results for Students Social Life on Campus

Standardized Regression Weights: (Group number 1 - Default model)			
			Estimate
social_life_P_1	<---	Students Social Life on Campus	0.69
social_life_P_2	<---	Students Social Life on Campus	0.87
social_life_P_3	<---	Students Social Life on Campus	0.48

Moreover, the lowest factor loading was for: social_life_P_3: It is easy to make friends on campus, where the highest factor loading was for: social_life_P_2: Student life on campus is dynamic.

4.11.8 CFA for Interaction with Faculty

This scale comprised of five items, none were removed as the standardized regression weight for all indicators is higher than 0.5. The factor loadings of the observed variables ranged from 0.65 to 0.78 and were statistically significant. This provides evidence of validity.

Table 4.15 CFA Results for Interaction with Faculty

Standardized Regression Weights: (Group number 1 - Default model)			
			Estimate
interactionwithfaculty_P_1	<---	Interaction with Faculty	0.70
interactionwithfaculty_P_2	<---	Interaction with Faculty	0.75
interactionwithfaculty_P_3	<---	Interaction with Faculty	0.78
interactionwithfaculty_P_4	<---	Interaction with Faculty	0.75
interactionwithfaculty_P_5	<---	Interaction with Faculty	0.65

In terms of factor loadings, the lowest factor loading was for: interactionwithfaculty_P_5: Academic advisors are interested in my progress. On the other hand, the highest factor loading was for: interactionwithfaculty_P_3: Lecturers are efficient in providing feedback on my performance and progress.

4.11.9 CFA for Interaction with Administrative Staff

This scale includes five items. None of these five items was removed as the standardized regression weight for all indicators is higher than 0.5.

Table 4.16 CFA Results for Interaction with Administrative Staff

Standardized Regression Weights: (Group number 1 - Default model)			
			Estimate
interaction_P_1	<---	Interaction with Administrative Staff	0.77
interaction_P_2	<---	Interaction with Administrative Staff	0.80
interaction_P_3	<---	Interaction with Administrative Staff	0.83
interaction_P_4	<---	Interaction with Administrative Staff	0.69
interaction_P_5	<---	Interaction with Administrative Staff	0.71

Considering the attained results, the factor loadings of the observed variables ranged from 0.69 to 0.77 and were statistically significant. Therefore, there is a clear evidence of validity in this case. In addition, the lowest factor loading was for: interaction_P_4: Staff keeps students informed about when services will be performed, where the highest factor loading was for: interaction_P_3: Administration staff responds quickly to my request for assistance.

4.12 Analysis and Assessment

4.12.1 Average Variance Extracted

Average Variance Extracted (AVE), characterized in Fig. 4.2, relates to the quantity of variance confined by the construct versus the amount due to the error of measurement (Hair et al., 2010). The AVE ranges between zero and one, but according to Malhotra and Stanton (2004), in order to validate a construct, AVE must be greater than 0.50.

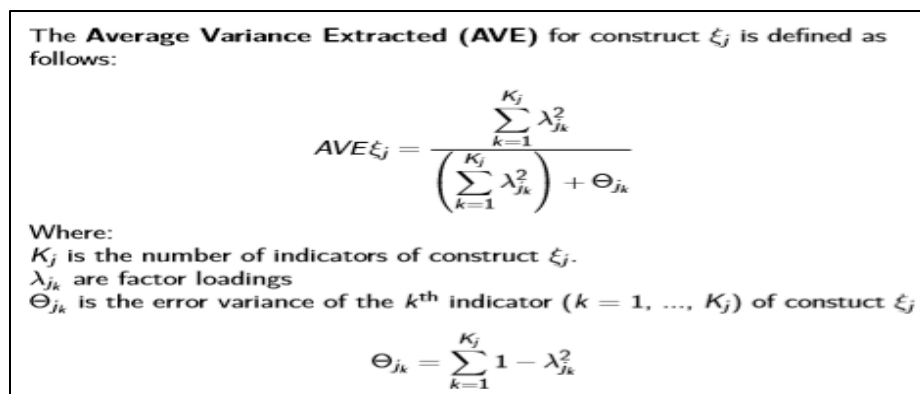


Figure 4.2 Average Variance Extracted

Table 4.17 reports the AVE calculated for the different constructs considered in this investigation. Although AVE is preferred to be higher than 0.5, an AVE of 0.4 can be accepted. According to Fornell and Larcker (1981), if composite reliability is higher than 0.6, the convergent validity of the construct is still adequate, even if AVE is less than 0.5.

As presented earlier, the composite reliability analysis yielded values higher than 0.6 for all constructs. Moreover, the AVE for all the constructs as shown in the table below is equal to greater than 0.4. Therefore, based on the calculated AVE, the validity of all the considered constructs in this investigation is confirmed.

Table 4.17 Calculated AVE for all the constructs considered

Construct	AVE
Satisfaction	0.7
University Image and Reputation	0.4
Students Social Life on Campus	0.5
Interaction with Faculty	0.5
Quality of Education	0.5
Interaction with Administrative Staff	0.6
Quality of Students Services Support	0.4
Campus Physical Facilities	0.4

4.12.2 Composite Reliability

Composite Reliability (CR) defines the extent to which the items consistently represent the same latent construct (Hair et al., 2010). According to Hair et al. (2010), the acceptable threshold for calculated composite reliability is 0.70. Generally, the composite reliability can be calculated using the formula presented in Fig. 4.3.

Table 4.18 presents the calculated CE for all the constructs considered. All the constructs exhibited an excellent level of composite reliability with reported values higher than 0.7. These results further confirm the fitness of the data for the measurements in this study.

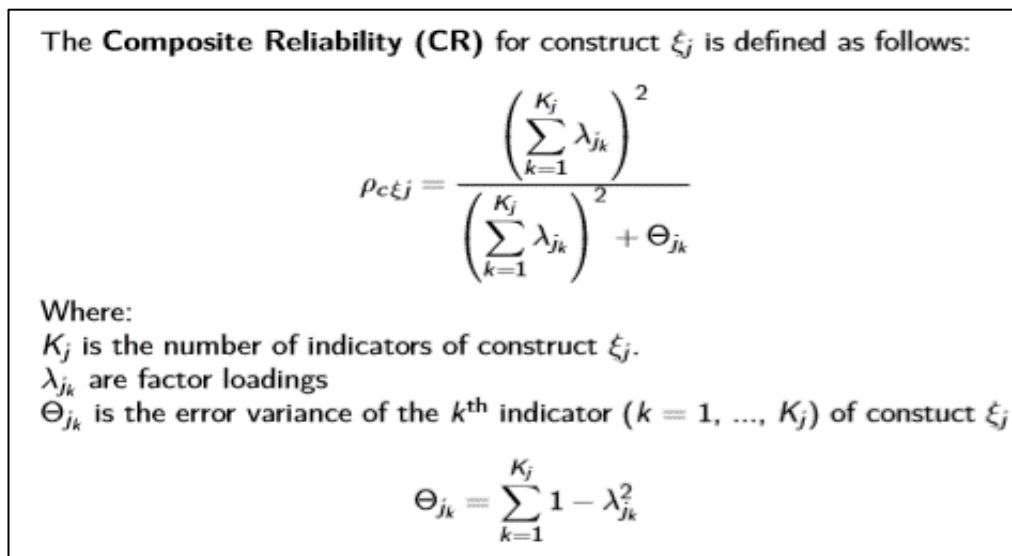


Figure 4.3 Composite Reliability

Table 4.18 Calculated CR for all the constructs considered

Construct	CR
Satisfaction	0.9
University Image and Reputation	0.7
Students Social Life on Campus	0.7
Interaction with Faculty	0.8
Quality of Education	0.8
Interaction with Administrative Staff	0.9
Quality of Students Services Support	0.8
Campus Physical Facilities	0.9

4.12.3 Structural Equation Modelling

The second stage of analysis is to test the proposed hypotheses of the research through advanced analysis of SEM using AMOS 24 software. SEM combines elements of multivariate models such as regression analysis, factor analysis and simultaneous equation modelling (Arbuckle, and Wothke, 2010). Hypothesis will be rejected at the 5% significance level if the p-value of the tests is less than 0.05.

Direct Hypothesis Results/ Structural Model.

- A. Hypothesis 1 (H1): There is a significant positive influence of campus facilities on student satisfaction.

A standardized path coefficient of -0.03 and P-value = $0.35 > 0.05$ are reported. This indicates a negative non-significant relation. Therefore, H1 is not supported.

B. Hypothesis 2 (H2): *There is a significant positive influence of student interaction with the faculty on student satisfaction.*

A standardized path coefficient of 0.15 and P-value less than $0.01 < 0.05$ are reported. The results indicate a positive significant relation. Therefore, the results support H2.

C. Hypothesis 3 (H3): *There is a significant positive influence of student interaction with administration on student satisfaction.*

A standardized path coefficient of 0.08 and P-value = $0.02 < 0.05$ are reported in this case. This indicates a positive significant relation. Therefore, H3 is supported by the attained results.

D. Hypothesis 4 (H4): *There is a significant positive influence of student social life on campus on student satisfaction.*

A standardized path coefficient of 0.12 and P-value less than $0.01 < 0.05$ are calculated. These results indicate a positive significant relation. Therefore, the results support H4.

E. Hypothesis 5 (H5): *There is a significant positive influence of university reputation and image on student satisfaction.*

In this case, the reported standardized path coefficient of 0.50 and P-value less than $0.01 < 0.05$ indicate a positive significant relation. Thus, H5 is supported by the results obtained.

F. Hypothesis 6 (H6): *There is a significant positive influence of Quality of education on student*

A standardized path coefficient of 0.13 and P-value less than $0.01 < 0.05$ are estimated for this case. These numbers indicate a positive significant relation. Therefore, the results support H6.

G. Hypothesis 7 (H7): *There is a significant positive influence of Quality of Students Services Support on student satisfaction.*

In this case, a standardized path coefficient of 0.10 and P-value = $0.01 < 0.05$ are reported. The results clearly indicate a positive significant relation. Therefore, H7 is very well supported by the results obtained.

In overall, the results attained in this study support and are in line with all the hypothesis made at the start of the investigation. Thus, it was found that Students Satisfaction, being the dependent variable in this study, is significantly and positively influenced to a large extent by the following independent

variables University Image and Reputation, Interaction with Faculty, Quality of Education, Students Social Life on Campus, Quality of Students Services Support and Interaction with Administrative Staff. On the other hand, it was found that the independent variable Campus Physical Facilities has a negative non-significant relationship with students' satisfaction. This is also in line with the expectations of the experts' panel during the piloting phase, as they expected that the 'Campus Facilities' dimension would have an insignificant relationship with the students' satisfaction. This can be directly linked with the results attained in regarding the performance and importance of the Campus Physical Facilities. For example, although a relatively low percentage of students confirmed accommodation security and affordability, also very low percentage of students believe that a secure and comfortable accommodation and dorm is of a high importance.

Some studies conducted in developing countries have reported an insignificant relationship between the Campus Physical Facilities factor and students' satisfaction (Douglas et al., 2006; Farahmandian et al., 2013; Kundi et al., 2014; Ibrahim et al., 2014). In a study and aiming to develop a model to understand the dynamics student satisfaction in private universities in Karachi, Pakistan, Baig et al. (2016) have investigated seven dimensions of service quality against students' satisfaction. Based on their analysis, it was reported that six dimensions have significant impact on students' satisfaction, being the quality of campus life, quality of academic service, quality of teaching, quality of management, quality of leadership and assessment and feedback. On the other hand, the quality of university infrastructure was found to have an insignificant impact. The results of this study align well with the findings of our investigation, noting that both studies are targeting private universities in developing countries in Asia. In addition, concerning the negative weighting associated with the campus physical facilities dimension, similar conclusion was also reported by Marzo-Navarro et al. (2005).

Moreover, the multiple regression model showed that the effect of physical facilities on satisfaction was indeed confounded by all the other six independent variables included in the model (image and reputation, quality of student service support, student interaction with administration staff, student social life on campus, student interaction with faculty, quality of teaching). The sign of the effect of campus physical facilities on satisfaction changed in the complex model relative to the bivariate model, meaning that the positive significant effect of campus physical facilities on satisfaction was not attributed to the physical facilities by itself but by the confounding effects of the other variables that were included in the model which were also related to campus physical facilities. It appeared that upon the introduction of confounding variables, the sign of physical facilities on satisfaction changed.

However, although the resulting weighting coefficient of the campus physical facilities is negative, it shall be noted that this coefficient is very small and almost zero, -0.03. As the current study targeted LIU private university in Lebanon, the reasons behind attaining a non-significant relation between campus physical facilities and student satisfaction could be devoted to the following reasons:

- A. **Economic Situation:** The economic crisis in Lebanon and the harsh economic situation of the majority of the Lebanese people is a major factor. This economic situation has a direct influence on every single detail in the Lebanese citizen life. While life expenses are booming, and everything is getting more and more expensive, salaries are almost the same or slightly increasing in some industries. The annual increment rate in salaries in 2019 was 1% for Travel industry, 2% for Banking sectors, 3% for Construction sectors, 4% for Energy sectors, and 5% for Education sectors. However, the cost of living in Lebanon has been increasing since 2012 and reach the highest rate %10.04 in January 2020 which is the highest since 2012 (Trading Economics, 2020). The high cost of living in Lebanon is caused by the poor infrastructure and the lack of proper public services (Yan, 2019). According to Lebanon Trading Economist (2020), Lebanon is facing the worst economic crisis since the end of the civil war in 1990. The cost of living is rising for almost all categories for example, housing and utilities (4.25 percent in January 2020 vs 1.29 percent in December 2012), food and non-alcoholic beverages (14.45 percent in January 2020 vs 9.77 percent in December 2012). Therefore, university students are also affected, as well as their families, by these economic challenges. So, it is becoming more and more uncommon to have students having their own private cars or are part of sports clubs or taking part in leisure activities. Thus, campus facilities as parking lots, modern sports facilities and others fall behind in the priority list of a Lebanese university student. In this regard, some students are even afraid of having modern facilities, considering that this may incur certain additions and increase in the tuition fees, which they are facing hard time in paying.
- B. **Past Experience:** The majority of the students at the Lebanese International University are coming from high schools and academic institutions which in its turn don't have modern student onsite facilities. So, students are raised with this mentality and under those cultural and social constraints, feeling that such facilities are not crucial. So, having such facilities or not at the university will not be the major deciding factor to characterise the student satisfaction.
- C. **LIU Facilities Status:** Compared to other Lebanese universities and considering that it has a very well-planned and modern campuses, the on campus physical facilities at LIU are one of the best on the level of the country. With modern sports facilities, open spaces and gardens,

green areas, modern cafeteria, libraries and well-organized parking lots, LIU provide an excellent level of facility services for Lebanese university students. Thus, a student who is registered at LIU, and although it is not common to have such facilities in the Lebanese universities, takes it for granted that LIU is already providing a very good level and multitude of on campus facilities. So, the student is more concerned with other factors as academic services, administrative help and career services rather than being driven with the availability and level of facilities.

4.12.4 Collinearity Test

In terms of collinearity levels, Hair et al. (2003) highlighted that the level of collinearity is directly proportional to the probability that a good outcome predictor is to be found insignificant and thus being rejected from the developed model. In this study, two methods were implemented to test and evaluate the presence of multi-collinearity among the chosen independent variables. The first technique involves the implementation of a tolerance test, where the second method concerns the calculation of a variance inflation factor (VIF) (Ahsan et al., 2009). In this regard, Hair et al., (2003), stated that the maximum value of VIF is set as 5.0. So, an estimated VIF which is higher than 5.0 indicates a major issue of multicollinearity. The results of the performed analysis are presented in the table below.

Table 4.19 Test of Collinearity

Model	Collinearity Statistics	
	Tolerance	VIF
Independent Variables		
Campus Physical Facilities score / performance	.679	1.473
Students Social Life on Campus score / performance	.637	1.571
Interaction with Faculty score / performance	.487	2.055
Quality of Education score / performance	.487	2.051
Interaction with Administrative Staff score / performance	.578	1.731
Quality of Students Services Support score / performance	.465	2.149

University Image and Reputation Score/ performance	.638	1.567
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Based on the results reported in Table 4.19, VIF values are well below the threshold of 5. It can be noted clearly that VIF data ranges between 1.473 and 2.149. On the other hand, the tolerance values calculated are within the range 0.465 and 0.679. Thus, both methods implemented in this section to assess the selected independent variables show that there is no sign of multicollinearity in this study.

In addition, the Durbin-Watson test was also carried out. The Durbin-Watson test is defined as an evaluation of the null hypothesis assessing if the residuals from an ordinary least-squares regression are not autocorrelated against the alternative that the residuals follow. The Durbin-Watson statistic is generally in the range from 0 to 4. In this regard, a value near 2 indicates non-autocorrelation, where a value close to 0 indicates positive autocorrelation and a value close to 4 hints that there is a negative autocorrelation (Chen, 2016). In overall, the acceptable limit of a Durbin-Watson test is from 1.5 to 2.5. In this analysis, the Durbin-Watson test yield a value of 1.836, which is within the acceptable limit. This is a clear indication that there is no auto correlation problems in the data used in this research.

4.12.5 Student Satisfaction Model

Based on the results obtained in this investigation, Table 4.11 summarizes the factors affecting satisfaction in order of importance. In addition, the table reports the standardized and the unstandardized regression weight of each of the dimensions considered in this study. It could be noted that the University Image and Reputation has the highest weight, with a considerable gap with respect to the other dimensions. Interaction with Faculty comes in the second place regarding weighting vs Students Satisfaction, followed by Quality of Education, Students Social Life on Campus, Quality of Students Services Support and Interaction with Administrative Staff. Finally, Campus Physical Facilities comes with a weighting of -0.03, highlighting the negligible importance given by the students for this factor.

Table 4.20 Regression Weights of different Independents

Dependent	Independent	Standardized Regression Weight	Unstandardized Regression Weight
Students Satisfaction	University Image and Reputation	0.50	0.56
Students Satisfaction	Interaction with Faculty	0.15	0.18
Students Satisfaction	Quality of Education	0.13	0.15
Students Satisfaction	Students Social Life on Campus	0.12	0.14
Students Satisfaction	Quality of Students Services Support	0.10	0.12
Students Satisfaction	Interaction with Administrative Staff	0.08	0.07
Students Satisfaction	Campus Physical Facilities	-0.03	-0.03

Using the unstandardized regression weights of each of the dimensions considered and their corresponding P values, the model equation of Students Satisfaction and the service quality model are developed as follows.

Students Satisfaction

$$\begin{aligned}
 &= (0.56 \times \textit{University Image and Reputation}) \\
 &+ (0.18 \times \textit{Interaction with Faculty}) \\
 &+ (0.15 \times \textit{Quality of Education}) \\
 &+ (0.14 \times \textit{Quality of Students Services Support}) \\
 &+ (0.12 \times \textit{Students Social Life on Campus}) \\
 &+ (0.07 \times \textit{Interaction with Administrative Staff}) \\
 &- (0.03 \times \textit{Campus Physical Facilities}) \\
 &+ e_{44}
 \end{aligned}$$

where $e_{44} = 0.71$, being the estimated variance of Students Satisfaction.

Service Quality Dimensions

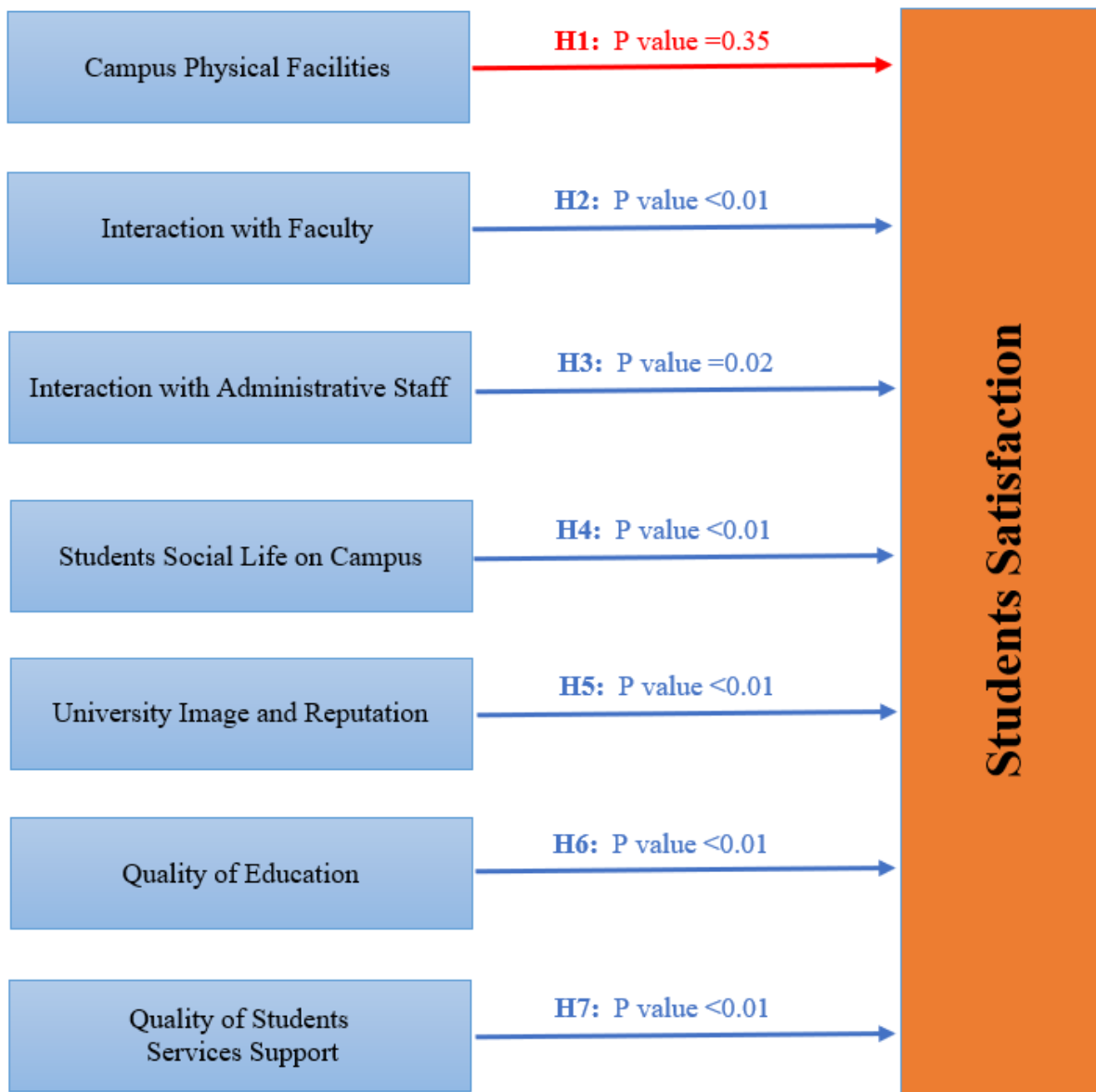


Figure 4.4 Final Service Quality Model

4.13 Summary

After presenting the research design, methodology and approach to be adopted in this investigation in Chapter 3, the actual full implementation of the developed service quality assessment model conceptual framework in the Lebanese International University case study is presented in this chapter and the results are analysed and discussed. Data collected from the different questionnaire forms completed by students is prepared, coded and analysed, using the Statistical Package for Social Sciences (SPSS) version 25 and SPSS AMOS. To aid results assessment and data analysis, various approaches were implemented in this chapter including descriptive statistical analysis, one-way

analysis of variances (ANOVA), Levene's Test, regression analysis, confirmatory factor analysis (CFA) and Structural Equation Model (SEM).

First, the profile and demographic characteristics of the respondents are presented in detail, considering gender, age, marital status, dependents support and nationality. Considering a balanced distribution between males and females and a representation of a wide range of students age and status, it was found that the population sample selected provides a very good representation of the whole university students, aligning perfectly with the enrolment data from the administration office. Furthermore, all LIU campuses are covered in the selected sample, but with different distribution and contribution of each campus.

A Cronbach Alpha technique was used to measure the internal consistency and reliability. The Cronbach's alpha (α) was calculated for each of the service quality dimensions along with satisfaction, and the results confirmed the homogeneity of the proposed scales.

Regarding the students' feedback and answers concerning their satisfaction of studying at LIU, an acceptable percentage ranging between 70% and 77% of the students confirmed their satisfaction, stating that they enjoy attending classes at LIU. Then, each of the service quality dimensions proposed in this study is investigated considering both performance and importance perspectives. In terms of LIU image and reputation, a large percentage of students confirmed that LIU has a good image and that it is a student-focused university with good partnership with international universities. In addition, the results show that LIU provides a friendly environment and perfect conditions to make friends.

Moreover, the interaction between students and faculty was ranked high in terms of importance by more than 80% of the students, in addition to interaction with administration staff which was also highly regarded by students. Another factor which was reported as a priority and of high importance by students is having up to date and well-organized curricula across various LIU majors and faculties. In terms of student support services, two services stand out based on the results of the investigation: career services and advice along with flexible payment plans and financial assistance. This reflects the problematic economic situation in Lebanon as well as the competitive job market.

However, the most problematic section in the study as reported by students was the Campus Physical Facilities. A major problem was highlighted in terms of the students' accommodation and dorms, as the majority of the students think that these facilities are unsecure, uncomfortable and unaffordable. On the other hand, students gave the highest importance to other facilities including open campus areas and gardens and good cafeteria food.

After this analysis, a comparison of the different demographic variables against the seven dimensions of service quality is carried out and presented. As the calculated P-values are greater than 0.05, it was concluded that differences in age, gender, marital status, enrolment period, funding source and student status have no significant impact on the perceived service quality by students. On the other hand, there was a significant mean difference between Campuses along 6 of the 7 service quality dimensions, where Akkar Campus ranks first in 4 out of 6 dimensions.

Furthermore, the Importance-Performance matrix was developed to identify areas where the university needs to prioritize and should allocate more resources. The critical quadrant 'Concentrate here' has the attribute related to offering comfortable accommodation (dorms), highlighting that the university needs to act on this matter. Also, a multitude of attributes fall near the 'Concentrate here' quadrant suggesting that the university need to act on these services as soon as possible. These services include good internet services, offering affordable accommodation, modern sports facilities, safe accommodation and parking areas for students.

As a summary, the case study results support all the hypothesis made at the start of the investigation, including the insignificance claim made in Hypothesis H1, dealing with Campus Physical Facilities. In this regard, it was highlighted that the independent variable Campus Physical Facilities has a negative non- significant relation with students' satisfaction. This could be explained in a Lebanese context considering the current economy situation in Lebanon and the associated problems, the students previous experiences with their high schools and academic institutions and the acceptable facilities status at LIU. Therefore, such facilities are in general not considered a priority for the majority of the students, taking into account the overall cultural and social perspectives.

Finally, the unstandardized regression weights of each of the selected dimensions were used to derive the model of Students Satisfaction. It shall be highlighted that the University Image and Reputation has the highest weighting.

Chapter 5 Conclusions

5.1 Introduction

This chapter concludes the thesis and reviews the contributions of the study to theory and practice. The contribution has been presented in the form of a published paper and the contribution to management will be through the study conceptual model. This chapter also covers the study limitations and future research work.

5.2 Research Conclusions

Lebanon is a small country on the Mediterranean, yet with a large influence on a regional and international levels, where Lebanese highly educated people are scattered everywhere all around the globe and are almost double the number of citizens living on the Lebanese ground. When it comes to the Higher Education sector, the Lebanese universities have been always among the oldest and most reputed in the Middle East region and the Arab world. Apart from the national Lebanese public university, this small country comprises more than 40 private higher education institutions distributed on the country various districts.

Although the Lebanese civil war had incurred major negative impacts on the country as a whole and the Lebanese educational sector in particular, the country is still an attractive destination for international students from all around the world. A key condition of success and flourishing for every higher education institution is having a well-organized and systematic service quality assessment model to assess the services' quality and the delivery efficiency.

In this study, a comprehensive review is carried out and presented considering recent investigations dealing with various aspects of service quality models and the corresponding service quality dimensions. However, based on the analysis and assessment of the different models presented in the literature, none of current standard service quality models were found to be perfectly suitable to be adopted in the Lebanese higher education to evaluate service quality within private higher education institutions. Therefore, this work is the first of its kind in the Lebanese higher education sector, leading to the design, development, implementation and assessment of a conceptual framework for a service quality model for service quality evaluation in the Lebanese higher education. Moreover, the

study tends to determine the most important service quality dimensions from the student's own perspective.

Based on the service quality assessment model suggested in this investigation with the corresponding seven dimensions, a questionnaire was developed to collect data from students and help in assessing and analysing gaps between level of importance given by students and their perception of the performance of each dimension. The developed questionnaire has 3 main sections. Section A has general questions characterizing the respondent, where Section B deals mainly with students' satisfaction and loyalty. On the other hand, Section C characterizes the seven proposed service quality dimensions and a list of associated statements. The questionnaire was reviewed by an expert panel and peers who were requested to comment on the questionnaire initial draft, followed up by a pilot study, and then the questionnaire was finally revised again and finalized.

Furthermore, a case study of a private university in Lebanon, the Lebanese International University (LIU) is considered aiming to implement the developed service quality model conceptual framework and evaluate the quality of various services. LIU has 9 campuses across the Lebanese districts, allowing a wide implementation of the framework and a good basis for data collection and analysis. The questionnaire was manually distributed to the targeted students in 9 campuses of LIU. A total of 1,116 questionnaires were employed in the assessment and analysis phase of this study. Throughout the whole process, ethical principles and confidentiality of data was fully respected.

Moreover, data collected from completed questionnaire was prepared, cleaned, coded and analysed using the Statistical Package for Social Sciences (SPSS) version 25 and SPSS AMOS. Regarding the demographic characteristics of the population sample, data analysis reported that the selected sample shows a very good representation of the whole university students, in addition to covering all LIU campuses with different contribution. Each of the seven service quality dimensions proposed in this study was investigated considering both performance and importance perspectives. Through analysing and evaluating the students' feedback and answers of questionnaires, the following points could be highlighted:

- A good percentage ranging between 70% and 77% of the students confirmed their satisfaction with attending LIU.
- A large percentage of students confirmed that LIU has a good image and that it is a student-focused university with partnership with international universities.
- Students confirm that LIU provides a friendly environment to make friends.

- The interaction with faculty and with administration staff was highly regarded by the majority of students.
- Well-organized curricula across various LIU majors and faculties is a priority for LIU students.
- Two support services have been highlighted by students as their most important services: career services and flexible payment plans and financial assistance.
- Campus Physical Facilities was found to be the most problematic dimension based on students' feedback.
- The security and affordability of LIU accommodation and dorms was raised as a critical point by students.
- The most important facilities for LIU students are open campus areas, gardens and good cafeteria food.

Nevertheless, a holistic comparison is carried out for the different demographic variables against the seven dimensions of service quality. The analysis showed that differences in age, gender, marital status, enrolment period, funding source and student status have no significant impact on the service quality perceived by LIU students. On the other hand, there was a significant mean difference between campuses.

A key part of the evaluation was the development of the Importance-Performance matrix to identify areas which LIU needs to prioritize and allocate its resources. The 'Concentrate here' has the attribute related to offering comfortable accommodation (dorms), stressing that LIU needs to react on this issue as soon as possible. Moreover, six other attributes fall close to the 'Concentrate here' quadrant highlighting that LIU need to monitor those attributes and track the performance as well as trying to improve the current situation. These six considered services are good internet services, offering affordable, modern and safe accommodation, modern sports facilities, and parking areas for students.

All the seven hypotheses defined, except one, at the beginning of the investigation were confirmed by the attained results. The only hypothesis which stands out, claiming an insignificant relationship with student satisfaction, is the one dealing with Campus Physical Facilities. Considering this hypothesis, it was shown that the independent variable Campus Physical Facilities has a negative non- significant relation with the satisfaction of students. This was in line with few studies that were carried in developing countries and explained in a Lebanese context considering three factors, the economic situation, students past experience and LIU facilities current status. Finally, the unstandardized

regression weight corresponding to each of the seven dimensions was used to develop the model of Students Satisfaction, where the University Image and Reputation yields the highest weighting.

Considering this holistic objective, the work provides a good basis to investigate the impact of the service quality dimensions on students' satisfaction at private HEIs in Lebanon. Nevertheless, an overall evaluation and analysis of the major gaps between importance levels given by students for each of the quality dimensions and their own perception of the performance.

5.3 Contribution to theory and practice

The contribution to theory is presented by providing a refined and proposed model and through a published paper and a conference proceeding. The published paper has already been cited by several researchers and papers. The developed model is based on the initial service quality model developed by Parasuraman et al. (1985), in addition to considering the three qualities highlighted in Gronroos (1983) and Lehtinen and Lehtinen (1982) models: Physical Quality (Campus Physical Facilities), Interactive Quality (Interactions with Staff, Administration and other students on Campus) and Corporative Quality (University Image and Reputation). The framework also aligns well with the Importance-Performance (IPA) model recommendations. The final product consists of seven major service quality dimensions as follows: Quality of Education, Quality of Students Services Support, Campus Physical Facilities, University Image and Reputation, Students Social Life on Campus, Interaction with Faculty and Interaction with Administrative Staff.

In terms of the management contribution, this case study, through the service quality model conceptual framework and yields a multitude of positive impacts and benefits for the considered Lebanese International University on one hand and for the whole Lebanese Higher Education Sector on the other hand. Nevertheless, the findings of this research will also be very useful for other Lebanese universities, considering that the developed conceptual framework of service quality model is generic enough and is considered as the first of its kind in the Lebanese context. On a holistic level, the current investigation will help improving the overall performance of the Lebanese Higher Education as quality services is at the heart of every single academic institution performance. In general, a systematic service quality assessment tool will lead to better services quality and thus higher university performance and consequently higher students' satisfaction rates. This will help in maintaining the leading position of the Lebanese Higher Education sector in the region.

Nevertheless, the results of the study have been communicated with LIU top management, leaders and administrators, presenting the major findings and recommendations regarding the main services to be targeted and acted on by the university. This is of course a priority for LIU as the services highlighted

in this investigation and the findings are all based on the students' feedback. In addition, the developed service quality model will help in benchmarking the quality of the university performance over time, and thus evaluating the quality of services provided under various circumstances.

Considering the feedback collected from different students' questionnaires and based on the data analysis carried out, the top management at the Lebanese International University has been made aware about the fact that around 77% of the students taking part in the investigation have expressed their satisfaction with attending LIU. This is obviously one of the positive points noted, characterizing an overall students' satisfaction with the university from the holistic perspective, and is very important for the top management considering the high competition faced from other universities on a national and regional levels. In addition, one of the recommendations that LIU top management should consider as a priority is maintaining the university good image. This was one of the key aspects given high importance and scores by the students taking part in the investigation.

Moreover, another important aspect which is recommended for top management is to consider enhancing the interaction between the students on one side and the faculty and administration staff on the other side. This is regarded as a priority by the majority of students. In terms of the academic services, it is recommended that the top management and LIU leaders give more attention and allocate more resources on organizing and improving the curricula across various majors and faculties. This is a common activity that needs a collaborative effort from the top management, administrative staff and faculty members. In addition, two main support services have been highlighted by students as the most important services: career services and flexible payment plans and financial assistance. Thus, another recommendation for LIU top management is to improve the university career office services through extending the university network with companies and organizations in addition to organizing frequent effective job fairs. On the economic side, it is recommended that the top management would invest more in implementing flexible payment plans and additional financial assistance options for a wide number of students.

On top of the recommendations comes improving the Campus Physical Facilities, which was reported to be the most problematic dimension based on students' feedback. In this regard, facilities including library, parking areas and campus gardens and open spaces are to be considered for enhancement and improvement. Moreover, the security and affordability of LIU accommodation and dorms was raised as a critical point by students. Therefore, it is recommended that the LIU top management act fast on this issue via two routes, reconsidering the cost of campus-based accommodation and improving the safety and security level around the student's accommodations.

The study findings have been communicated with the university Vice President to highlight the major recommendations for actions by the top management and to aid the decision making. Overall, the recommendations would form a basis to improve the quality of the managerial practices regarding various university sections and fields. Moreover, the study findings will establish a continuous feedback and communication loop between the students, university staff and the top management. This fits very well with the Lebanese International University mission in providing high quality higher education for Lebanese students, along with training them to be an active part in the professional workforce. A key condition to attain this mission is a continuous active and healthy communication on various university levels, including students, faculty, administration and top management.

5.4 Limitation

Despite this work holistic perspective and comprehensive design, it has certain limitations in its implementation and outputs. As the current study aims to develop a conceptual framework for a service quality model for service quality evaluation in higher education, along with determining the most important dimensions of service quality as perceived by students, the main limitation lies in the generalization of the data and findings attained. A case study of a Lebanese university was considered as a case study in this investigation. Although the framework developed is generic in its design and format, the results attained for the case study may be specific for the university considered and may not give a clear overview regarding expectations of other higher education institutions. Saying that, the chosen sample demographic characteristics with the fair distribution of students in terms of their age, nationalities and status, provides a good factor supporting generalization of the results attained, considering that the current case study was not limited to a single campus, but was implemented in nine campuses under the Lebanese International University flag.

5.5 Recommendations for future research

The work carried out in this thesis and the results attained have opened the door for future research horizons. One of the major routes to consider is extending the work carried out by considering additional higher education institutions. This would include preferably another private Lebanese university and the Lebanese public university. This will allow a better generalization of the overall results and outcomes and provide an opportunity in assessing and testing the proposed service quality model in another private institution as well as in a public university. Moreover, this work extension will allow making valuable comparisons between the case of a public higher education institution and a private one in terms of the services quality, students satisfaction and the major variables impacting

the services delivery. In addition, considering that this study has targeted a developing country, Lebanon, it would be useful in the future to compare the results and outcomes attained in this thesis work with similar studies carried out in developed countries, considering the societal, environmental, cultural and technical perspectives. One of the major points to consider in such comparison is the negative nonsignificant relation reported in this study between campus physical facilities and student satisfaction.

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Appendices

Appendix A. Questionnaires

First Questionnaire Draft

Investigating the Service Quality Dimensions and their Impact on University Students' Satisfaction in a Private Higher Education Institution in Lebanon

Dear Student,

You are invited to participate in a doctorate research questionnaire on 'Investigating the Key Service Quality Dimensions and their Impact on University Students' Satisfaction in Lebanon'. This research aims to improve students' satisfaction by determining the key service quality dimensions that are most important to students. The results of this research will be used to come up with new strategies that improve students' satisfaction.

It is important to note that your participation is completely **voluntary**. Your answers will be treated with utmost **anonymity** and **confidentiality**. Refusal to participate will **not** result in any penalty. The data collected will only be used for academic purposes. No information from an individual questionnaire will be published separately; only aggregated results will be reported. If any question requests information that you don't wish to provide, please feel free to skip to the next question. You can also choose to **withdraw** from the research at any time without the need to provide any reason or justification. However, once your responses have been anonymised and aggregated, they cannot be withdrawn from the study.

If you would like to further follow this study, please feel free to contact me (k026949e@student.staffs.ac.uk) or to contact my research supervisor (v.maheshwari@staffs.ac.uk) and we will gladly send you a summary of the final results.

Kindly note that by completing and submitting this questionnaire, this imply that you have **consented** to take part of the research. Finally, it should not take more than **20 minutes** to complete this questionnaire. Your participation is highly appreciated.

Section A: About Yourself

In this section of the questionnaire, we would like you to provide us with some personal information. You can be assured that this information will remain **confidential**. Please put (x) where appropriate:

1. Gender:

Female Male

2. Age:

18-21 22-25 More than 25

3. Marital Status:

Single Divorced/ Separated Engaged Married Widowed

4. Do you support any dependents?

Yes No

5. Select the campus you are currently enrolled in:

Saida Tripoli Tyre Nabatiyeh Mount Lebanon
 Beirut Akkar Bekaa Reyak

6. Have you been previously enrolled in another university?

Yes No

7. What is the main reason for choosing your current university? Check the ONE that best applies to you.

Scholarship Award Financial Aid Offered Campus Location Influence of Friends or Family Reputation
 Affordable Tuition Entry Requirement Campus Facilities Other (please specify): _____

8. What is your Nationality?

Lebanese Palestinian Syrian Other (please specify): _____

9. What is your major?

Arts and Science Education Pharmacy
 Business Engineering

10. How long have you been a student at your current university?

Less than 1 year 1 to less than 2 years 2 to 5 years More than 5 years

11. Are you a part-time or a full-time student?

Part-Time Student Full-Time Student

12. What is your GPA?

Below 1 1 - 1.49 1.5 - 1.99 2 - 2.49 2.5 - 2.99 3 - 3.49 Above 3.5

13. What is the major source of funding for your tuition fees? Check the ONE that best applies to you.

Self Family Employer Financial Aids from your University
 Scholarships from your University Scholarships from Other Sources Other (please specify): _____

14. Are you currently employed?

Part-Time Employment Full-Time Employment Not Employed

Section B: Satisfaction

A) For the below question, please circle the number that best represents your opinion. Please circle just one number for each statement.

Students' Satisfaction		Strongly disagree	Disagree	Somewhat disagree	Neutral	Somewhat agree	Agree	Strongly agree
1	I have truly enjoyed attending this university.	1	2	3	4	5	6	7
2	I am satisfied with my decision to attend this university	1	2	3	4	5	6	7
3	I am happy I decided to enroll at this university.	1	2	3	4	5	6	7

B) For the below question, please circle the number that best represents your opinion. Please circle just one number for each statement.

How likely is it that you would recommend this university to your friends?

	Not at all likely										Extremely likely
0	1	2	3	4	5	6	7	8	9	10	

Section C: About Your University

This section is composed of 7 sub-sections on seven service quality dimensions. The following statements are related to your opinion regarding your university performance and your perception of the importance of each service quality item. **Please circle just one number for each statement.**

University Image and Reputation		Performance (Your opinion regarding your university performance in each service quality item)							Importance (Your perception of the importance of each service quality item)							
		Strongly disagree	Disagree	Somewhat disagree	Neutral	Somewhat agree	Agree	Strongly agree	Don't Know	Not important at all	Low importance	Slightly important	Neutral	Moderately important	Very important	Extremely important
1	My university has a high academic reputation.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
2	My university is student-focused.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
3	The ranking of my university is high relative to other universities in Lebanon.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
4	This university has been recommended to me by alumni or a friend or family.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
5	My university has partnerships with international universities.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
6	My university supports charitable organizations and/or organizes charitable events.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
7	Media reports on the university are generally positive.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
8	The tuition I pay is worth the quality of services I am receiving from my university.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7

Student Social Life on Campus		Performance (Your opinion regarding your university performance in each service quality item)							Importance (Your perception of the importance of each service quality item)							
		Strongly disagree	Disagree	Somewhat disagree	Neutral	Somewhat agree	Agree	Strongly agree	Don't Know	Not important at all	Low importance	Slightly important	Neutral	Moderately important	Very important	Extremely important
1	My university has a variety of extracurricular activities.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
2	Student life on campus is dynamic.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7

Student Interaction with Faculty		Performance (Your opinion regarding your university performance in each service quality item)							Importance (Your perception of the importance of each service quality item)							
		Strongly disagree	Disagree	Somewhat disagree	Neutral	Somewhat agree	Agree	Strongly agree	Don't Know	Not important at all	Low importance	Slightly important	Neutral	Moderately important	Very important	Extremely important
1	Lecturers are approachable.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
2	Employees have the knowledge to answer students' questions.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
3	Lecturers are efficient in providing feedback on my performance and progress.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
4	Lecturers stimulates and maintains my interest in the course.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
5	Academic advisors are interested in my progress.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7

Quality of Teaching		Performance (Your opinion regarding your university performance in each service quality item)							Importance (Your perception of the importance of each service quality item)							
		Strongly disagree	Disagree	Somewhat disagree	Neutral	Somewhat agree	Agree	Strongly agree	Don't Know	Not important at all	Low importance	Slightly important	Neutral	Moderately important	Very important	Extremely important
1	In my university, I feel there is a commitment to academic excellence.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
2	My courses are generally intellectually challenging.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
3	The curricula and programs designed by the university are up- to date.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7

Student Interaction with Administration Staff		Performance (Your opinion regarding your university performance in each service quality item)							
		Strongly disagree	Disagree	Somewhat disagree	Neutral	Somewhat agree	Agree	Strongly agree	Don't Know
1	Employees are consistently courteous (polite) with students.	1	2	3	4	5	6	7	0
2	Employees are expressing willingness to help students.	1	2	3	4	5	6	7	0
3	Service is prompt.	1	2	3	4	5	6	7	0
4	Students are informed when they can expect services to be performed.	1	2	3	4	5	6	7	0
5	Services are provided at the promised time.	1	2	3	4	5	6	7	0

Importance (Your perception of the importance of each service quality item)						
Not important at all	Low importance	Slightly important	Neutral	Moderately important	Very important	Extremely important
1	2	3	4	5	6	7
1	2	3	4	5	6	7
1	2	3	4	5	6	7
1	2	3	4	5	6	7
1	2	3	4	5	6	7

Quality of Student Support Services		Performance (Your opinion regarding your university performance in each service quality item)							Don't Know	Importance (Your perception of the importance of each service quality item)						
		Strongly disagree	Disagree	Somewhat disagree	Neutral	Somewhat agree	Agree	Strongly agree		Not important at all	Low importance	Slightly important	Neutral	Moderately important	Very important	Extremely important
1	My university provides helpful career services and advice.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
2	My university offers a variety of scholarships and financial assistance.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
3	Registration and enrolment processes are smooth and clear.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
4	Services are provided in an atmosphere, which secures accuracy and confidentiality.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
5	Employees perform services correctly/right the first time.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
6	My university payment plans are flexible.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
7	Employees deal with students in a caring fashion.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
8	Policies demonstrate an understanding of the specific needs of the students.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
9	Policies have the students' best interests at heart	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
10	Services are provided as promised.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
11	Employees instill confidence in students that the service will be provided correctly	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
12	Employees show a sincere interest in handling student's service problems if they occur (take place).	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
13	Employees never acting too busy to respond to student's requests.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
14	Employees provide individual attention to student needs.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
15	Employees have neat, professional appearance.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
16	Records are kept accurately.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7

Campus Facilities		Performance (Your opinion regarding your university performance in each service quality item)							Importance (Your perception of the importance of each service quality item)							
		Strongly disagree	Disagree	Somewhat disagree	Neutral	Somewhat agree	Agree	Strongly agree	Don't Know	Not important at all	Low importance	Slightly important	Neutral	Moderately important	Very important	Extremely important
1	Equipment are modern looking.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
2	My university has a sufficient number of computer labs.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
3	My university has good internet services.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
4	My university library provides access to a wide number of academic journals and books.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
5	Operating hours are convenient for the students.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
6	The classrooms have modern teaching support equipment, such as projectors and computers.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
7	My university offers modern accommodation.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
8	My university offers accommodation at an affordable price.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
9	My university accommodation is safe.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
10	My university offers parking areas for students.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
11	My university has adequate open campus areas and gardens.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
12	My university is conveniently located.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
13	I feel safe anywhere on campus.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
14	The cafeteria in my university provides good food.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
15	The cafeteria in my university provides food at affordable prices.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7

16	Physical facilities are visually appealing.	1	2	3	4	5	6	7	0
17	The materials that are associated with the service are visually appealing (e.g. clear and concise forms, informative material, signs, mailing)	1	2	3	4	5	6	7	0

1	2	3	4	5	6	7
1	2	3	4	5	6	7

Second Questionnaire Draft

Investigating the Service Quality Dimensions and their Impact on University Students' Satisfaction in a Private Higher Education Institution in Lebanon

Dear Student,

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If you would like to further follow this study, please feel free to contact me (k026949e@student.staffs.ac.uk) or to contact my research supervisor (v.maheshwari@staffs.ac.uk) and we will gladly send you a summary of the final results.

Kindly note that by completing and submitting this questionnaire, this imply that you have **consented** to take part of the research. Finally, it should not take more than **20 minutes** to complete this questionnaire. Your participation is highly appreciated.

Section A: About Yourself

In this section of the questionnaire, we would like you to provide us with some personal information. You can be assured that this information will remain **confidential**. Please put (x) where appropriate:

1. Gender:

Female Male

2. Age:

18-21 22-25 More than 25

3. Marital Status:

Single Divorced/ Separated Engaged Married Widowed

4. Do you support any dependents?

Yes No

5. Select the campus you are currently enrolled in:

Saida Tripoli Tyre Nabatiyeh Mount Lebanon
Beirut Akkar Bekaa Reyak

6. Have you been previously enrolled in another university?

Yes No

7. What is the main reason for choosing your current university? Check the ONE that best applies to you.

Scholarship Award Financial Aid Offered Campus Location Influence of Friends or Family Reputation
Affordable Tuition Entry Requirement Campus Facilities Other(please specify): _____

8. What is your Nationality?

Lebanese Palestinian Syrian Other(please specify): _____

9. What is your major?

Arts and Science Education Pharmacy
Business Engineering

10. How long have you been a student at your current university?

Less than 1 year 1 to less than 2 years 2 to 5 years More than 5 years

11. Are you a part-time or a full-time student?

Part-Time Student Full-Time Student

12. What is your GPA?

Below 1 1 - 1.49 1.5 - 1.99 2 - 2.49 2.5 - 2.99 3 - 3.49 Above 3.5

13. What is the major source of funding for your tuition fees? Check the ONE that best applies to you.

Self Family Employer Financial Aids from your University
Scholarships from your University Scholarships from Other Sources Other (please specify): _____

14. Are you currently employed?

Part-Time Employment Full-Time Employment Not Employed

Section B: Satisfaction

A) For the below question, please circle the number that best represents your opinion. Please circle just one number for each statement.

Students' Satisfaction		Strongly disagree	Disagree	Somewhat disagree	Neutral	Somewhat agree	Agree	Strongly agree
1	I have truly enjoyed attending this university.	1	2	3	4	5	6	7
2	I am satisfied with my decision to attend this university	1	2	3	4	5	6	7
3	I am happy I decided to enroll at this university.	1	2	3	4	5	6	7

B) For the below question, please circle the number that best represents your opinion. Please circle just one number for each statement.

How likely is it that you would recommend this university to your friends?

Not at all likely											Extremely likely
0	1	2	3	4	5	6	7	8	9	10	

Section C: About Your University

This section is composed of 7 sub-sections on seven service quality dimensions. The following statements are related to your opinion regarding your university performance and your perception of the importance of each service quality item. Please circle just one number for each statement.

University Image and Reputation		Performance (Your opinion regarding your university performance in each service quality item)							Importance (Your perception of the importance of each service quality item)							
		Strongly disagree	Disagree	Somewhat disagree	Neutral	Somewhat agree	Agree	Strongly agree	Don't Know	Not important at all	Low importance	Slightly important	Neutral	Moderately important	Very important	Extremely important
1	My university has a good reputation.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
2	My university is student-focused.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
3	The ranking of my university is high relative to other universities in Lebanon.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
4	This university has been recommended to me by alumni or a friend or family.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
5	My university has partnerships with international universities.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
6	My university supports charitable organizations and/or organizes charitable events.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
7	Media reports on the university are generally positive.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
8	The tuition I pay is worth the quality of services I am receiving from my university.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7

Student Social Life on Campus		Performance (Your opinion regarding your university performance in each service quality item)							Importance (Your perception of the importance of each service quality item)							
		Strongly disagree	Disagree	Somewhat disagree	Neutral	Somewhat agree	Agree	Strongly agree	Don't Know	Not important at all	Low importance	Slightly important	Neutral	Moderately important	Very important	Extremely important
1	My university has a variety of extracurricular activities.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
2	Student life on campus is dynamic.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
3	It is easy to make friends on campus.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7

Student Interaction with Faculty		Performance (Your opinion regarding your university performance in each service quality item)							Don't Know
		Strongly disagree	Disagree	Somewhat disagree	Neutral	Somewhat agree	Agree	Strongly agree	
1	Lecturers are approachable.	1	2	3	4	5	6	7	0
2	Lecturers can answer most of my questions on the course content.	1	2	3	4	5	6	7	0
3	Lecturers are efficient in providing feedback on my performance and progress.	1	2	3	4	5	6	7	0
4	Lecturers stimulates and maintains my interest in the course.	1	2	3	4	5	6	7	0
5	Academic advisors are interested in my progress.	1	2	3	4	5	6	7	0

Importance (Your perception of the importance of each service quality item)						
Not important at all	Low importance	Slightly important	Neutral	Moderately important	Very important	Extremely important
1	2	3	4	5	6	7
1	2	3	4	5	6	7
1	2	3	4	5	6	7
1	2	3	4	5	6	7
1	2	3	4	5	6	7

Quality of Teaching		Performance (Your opinion regarding your university performance in each service quality item)							Don't Know
		Strongly disagree	Disagree	Somewhat disagree	Neutral	Somewhat agree	Agree	Strongly agree	
1	In my university, I feel there is a commitment to academic excellence.	1	2	3	4	5	6	7	0
2	My courses are generally intellectually challenging.	1	2	3	4	5	6	7	0
3	The curricula and programs designed by the university are up- to date.	1	2	3	4	5	6	7	0

Importance (Your perception of the importance of each service quality item)						
Not important at all	Low importance	Slightly important	Neutral	Moderately important	Very important	Extremely important
1	2	3	4	5	6	7
1	2	3	4	5	6	7
1	2	3	4	5	6	7

Student Interaction with Administration Staff		Performance (Your opinion regarding your university performance in each service quality item)							Don't Know
		Strongly disagree	Disagree	Somewhat disagree	Neutral	Somewhat agree	Agree	Strongly agree	
1	Administration staff is friendly.	1	2	3	4	5	6	7	0
2	Administration staff shows sincere interest in solving my problems.	1	2	3	4	5	6	7	0
3	Administration staff responds quickly to my request for assistance.	1	2	3	4	5	6	7	0
4	Administration Staff keeps students informed about when services will be performed.	1	2	3	4	5	6	7	0
5	Administration staff provides services at the promised time.	1	2	3	4	5	6	7	0

Importance (Your perception of the importance of each service quality item)							
Not important at all	Low importance	Slightly important	Neutral	Moderately important	Very important	Extremely important	
1	2	3	4	5	6	7	
1	2	3	4	5	6	7	
1	2	3	4	5	6	7	
1	2	3	4	5	6	7	
1	2	3	4	5	6	7	

Quality of Student Support Services		Performance (Your opinion regarding your university performance in each service quality item)							Don't Know
		Strongly disagree	Disagree	Somewhat disagree	Neutral	Somewhat agree	Agree	Strongly agree	
1	My university provides helpful career services and advice.	1	2	3	4	5	6	7	0
2	My university offers a variety of scholarships and financial assistance.	1	2	3	4	5	6	7	0
3	Registration and enrolment processes are smooth and clear.	1	2	3	4	5	6	7	0
4	Services are provided in a secure and confidential way.	1	2	3	4	5	6	7	0
5	Services are provided correctly at the first time.	1	2	3	4	5	6	7	0
6	My university payment plans are flexible.	1	2	3	4	5	6	7	0

Importance (Your perception of the importance of each service quality item)							
Not important at all	Low importance	Slightly important	Neutral	Moderately important	Very important	Extremely important	
1	2	3	4	5	6	7	
1	2	3	4	5	6	7	
1	2	3	4	5	6	7	
1	2	3	4	5	6	7	
1	2	3	4	5	6	7	
1	2	3	4	5	6	7	

Campus Facilities		Performance (Your opinion regarding your university performance in each service quality item)							Importance (Your perception of the importance of each service quality item)							
		Strongly disagree	Disagree	Somewhat disagree	Neutral	Somewhat agree	Agree	Strongly agree	Don't Know	Not important at all	Low importance	Slightly important	Neutral	Moderately important	Very important	Extremely important
1	My university has modern sports facilities.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
2	My university has a sufficient number of computer labs with the software programs I need.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
3	My university has good internet services.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
4	My university library provides access to a wide number of academic journals and books.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
5	My university library opening hours are generally convenient for me.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
6	The classrooms have modern teaching support equipment such as projectors and computers.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
7	My university offers comfortable accommodation.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
8	My university offers accommodation at an affordable price.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
9	My university accommodation is safe.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
10	My university offers parking areas for students.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
11	My university has sufficient open campus areas and gardens.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
12	My university is conveniently located.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
13	I feel safe anywhere on campus.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
14	The cafeteria in my university provides good food.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
15	The cafeteria in my university provides food at affordable prices.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7

Adjusted Questionnaire Draft (After Piloting)

Investigating the Service Quality Dimensions and their Impact on University Students' Satisfaction in a Private Higher Education Institution in Lebanon

Dear Student,

You are invited to participate in a doctorate research questionnaire on 'Investigating the Key Service Quality Dimensions and their Impact on University Students' Satisfaction in Lebanon'. This research aims to improve students' satisfaction by determining the key service quality dimensions that are most important to students. The results of this research will be used to come up with new strategies that improve students' satisfaction.

It is important to note that your participation is completely **voluntary**. Your answers will be treated with utmost **anonymity** and **confidentiality**. Refusal to participate will **not** result in any penalty. The data collected will only be used for academic purposes. No information from an individual questionnaire will be published separately; only aggregated results will be reported. If any question requests information that you don't wish to provide, please feel free to skip to the next question. You can also choose to **withdraw** from the research at any time without the need to provide any reason or justification. However, once your responses have been anonymised and aggregated, they cannot be withdrawn from the study.

If you would like to further follow this study, please feel free to contact me (k026949e@student.staffs.ac.uk) or to contact my research supervisor (v.maheshwari@staffs.ac.uk) and we will gladly send you a summary of the final results.

Kindly note that by completing and submitting this questionnaire, this imply that you have **consented** to take part of the research. Finally, it should not take more than **20 minutes** to complete this questionnaire. Your participation is highly appreciated.

Section A: About Yourself

In this section of the questionnaire, we would like you to provide us with some personal information. You can be assured that this information will remain **confidential**. Please put (x) where appropriate:

1. Gender:

Female Male

2. Age:

18-21 22-25 More than 25

3. Marital Status:

Single Divorced/ Separated Engaged Married Widowed

4. Do you support any dependents?

Yes No

5. Select the campus you are currently enrolled in:

Saïda Tripoli Tyre Nabatiyeh Mount Lebanon
Beirut Akkar Bekaa Reyak

6. Have you been previously enrolled in another university?

Yes No

7. What is the main reason for choosing your current university? Check the ONE that best applies to you.

Scholarship Award Financial Aid Offered Campus Location Influence of Friends or Family Reputation
Affordable Tuition Entry Requirement Campus Facilities Other(please specify): _____

8. What is your Nationality?

Lebanese Palestinian Syrian Other(please specify): _____

9. What is your major?

Arts and Science Education Pharmacy
Business Engineering

10. How long have you been a student at your current university?

Less than 1 year 1 to less than 2 years 2 to 5 years More than 5 years

11. Are you a part-time or a full-time student?

Part-Time Student Full-Time Student

12. What is your GPA?

Below 1 1 - 1.49 1.5 - 1.99 2 - 2.49 2.5 - 2.99 3 - 3.49 Above 3.5

13. What is the major source of funding for your tuition fees? Check the ONE that best applies to you.

Self Family Employer Financial Aids from your University
Scholarships from your University Scholarships from Other Sources Other (please specify): _____

14. Are you currently employed?

Part-Time Employment Full-Time Employment Not Employed

Section B: Satisfaction

A) For the below question, please circle the number that best represents your opinion. Please circle just one number for each statement.

Students' Satisfaction		Strongly disagree						
		Strongly disagree	Disagree	Somewhat disagree	Neutral	Somewhat agree	Agree	Strongly agree
1	I have truly enjoyed attending this university.	1	2	3	4	5	6	7
2	I am satisfied with my decision to attend this university	1	2	3	4	5	6	7
3	I am happy I decided to enroll at this university.	1	2	3	4	5	6	7

B) For the below question, please circle the number that best represents your opinion. Please circle just one number for each statement.

How likely is it that you would recommend this university to your friends?

Not at all likely										Extremely likely	
0	1	2	3	4	5	6	7	8	9	10	

Section C: About Your University

This section is composed of 7 sub-sections on seven service quality dimensions. The following statements are related to your opinion regarding your university performance and your perception of the importance of each service quality item. **Please circle just one number for each statement.**

University Image and Reputation		Performance (Your opinion regarding your university performance in each service quality item)							Importance (Your perception of the importance of each service quality item)							
		Strongly disagree	Disagree	Somewhat disagree	Neutral	Somewhat agree	Agree	Strongly agree	Don't Know	Not important at all	Low importance	Slightly important	Neutral	Moderately important	Very important	Extremely important
1	My university has a good reputation.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
2	My university is student-focused.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
3	The ranking of my university is high relative to other universities in Lebanon.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
4	This university has been recommended to me by alumni or a friend or family.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
5	My university has partnerships with international universities.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
6	My university supports charitable organizations and/or organizes charitable events.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
7	Media reports on the university are generally positive.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
8	The tuition I pay is worth the quality of services I am receiving from my university.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7

Student Social Life on Campus		Performance (Your opinion regarding your university performance in each service quality item)							
		Strongly disagree	Disagree	Somewhat disagree	Neutral	Somewhat agree	Agree	Strongly agree	Don't Know
1	My university has a variety of extracurricular activities.	1	2	3	4	5	6	7	0
2	Student life on campus is dynamic.	1	2	3	4	5	6	7	0
3	It is easy to make friends on campus.	1	2	3	4	5	6	7	0

Importance (Your perception of the importance of each service quality item)							
Not important at all	Low importance	Slightly important	Neutral	Moderately important	Very important	Extremely important	
1	2	3	4	5	6	7	
1	2	3	4	5	6	7	
1	2	3	4	5	6	7	

Quality of Teaching		Performance (Your opinion regarding your university performance in each service quality item)							Don't Know
		Strongly disagree	Disagree	Somewhat disagree	Neutral	Somewhat agree	Agree	Strongly agree	
1	In my university, I feel there is a commitment to academic excellence.	1	2	3	4	5	6	7	0
2	My courses are generally intellectually challenging.	1	2	3	4	5	6	7	0
3	The curricula and programs designed by the university are up- to date.	1	2	3	4	5	6	7	0

Importance (Your perception of the importance of each service quality item)						
Not important at all	Low importance	Slightly important	Neutral	Moderately important	Very important	Extremely important
1	2	3	4	5	6	7
1	2	3	4	5	6	7
1	2	3	4	5	6	7

Student Interaction with Faculty		Performance (Your opinion regarding your university performance in each service quality item)							Don't Know
		Strongly disagree	Disagree	Somewhat disagree	Neutral	Somewhat agree	Agree	Strongly agree	
1	I can easily contact my lecturers for advising and consultation.	1	2	3	4	5	6	7	0
2	Lecturers have the knowledge to answer my questions.	1	2	3	4	5	6	7	0
3	Lecturers are efficient in providing feedback on my performance and progress.	1	2	3	4	5	6	7	0
4	Lecturers stimulates and maintains my interest in the course.	1	2	3	4	5	6	7	0
5	Academic advisors are interested in my progress.	1	2	3	4	5	6	7	0

Importance (Your perception of the importance of each service quality item)						
Not important at all	Low importance	Slightly important	Neutral	Moderately important	Very important	Extremely important
1	2	3	4	5	6	7
1	2	3	4	5	6	7
1	2	3	4	5	6	7
1	2	3	4	5	6	7
1	2	3	4	5	6	7

Student Interaction with Administration Staff		Performance (Your opinion regarding your university performance in each service quality item)							Don't Know
		Strongly disagree	Disagree	Somewhat disagree	Neutral	Somewhat agree	Agree	Strongly agree	
1	Administration staff is friendly.	1	2	3	4	5	6	7	0
2	Administration staff shows sincere interest in solving my problems.	1	2	3	4	5	6	7	0
3	Administration staff responds quickly to my request for assistance.	1	2	3	4	5	6	7	0
4	Administration Staff keeps students informed about when services will be performed.	1	2	3	4	5	6	7	0
5	Administration staff provides services at the promised time.	1	2	3	4	5	6	7	0

Importance (Your perception of the importance of each service quality item)						
Not important at all	Low importance	Slightly important	Neutral	Moderately important	Very important	Extremely important
1	2	3	4	5	6	7
1	2	3	4	5	6	7
1	2	3	4	5	6	7
1	2	3	4	5	6	7
1	2	3	4	5	6	7

Quality of Student Support Services		Performance (Your opinion regarding your university performance in each service quality item)							Don't Know
		Strongly disagree	Disagree	Somewhat disagree	Neutral	Somewhat agree	Agree	Strongly agree	
1	My university provides helpful career services and advice.	1	2	3	4	5	6	7	0
2	My university offers a variety of scholarships and financial assistance.	1	2	3	4	5	6	7	0
3	Registration and enrolment processes are smooth and clear.	1	2	3	4	5	6	7	0
4	Services are provided in a secure and confidential way.	1	2	3	4	5	6	7	0
5	Services are provided correctly at the first time.	1	2	3	4	5	6	7	0
6	My university payment plans are flexible.	1	2	3	4	5	6	7	0

Importance (Your perception of the importance of each service quality item)						
Not important at all	Low importance	Slightly important	Neutral	Moderately important	Very important	Extremely important
1	2	3	4	5	6	7
1	2	3	4	5	6	7
1	2	3	4	5	6	7
1	2	3	4	5	6	7
1	2	3	4	5	6	7
1	2	3	4	5	6	7

Campus Facilities		Performance (Your opinion regarding your university performance in each service quality item)							Importance (Your perception of the importance of each service quality item)							
		Strongly disagree	Disagree	Somewhat disagree	Neutral	Somewhat agree	Agree	Strongly agree	Don't Know	Not important at all	Low importance	Slightly important	Neutral	Moderately important	Very important	Extremely important
1	My university has modern sports facilities.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
2	My university has a sufficient number of computer labs with the software programs I need.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
3	My university has good internet services.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
4	My university library provides access to a wide number of academic journals and books.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
5	My university library opening hours are generally convenient for me.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
6	The classrooms have modern teaching support equipment such as projectors and computers.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
7	My university offers comfortable accommodation (dorms).	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
8	My university offers accommodation (dorms) at an affordable price.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
9	My university accommodation (dorms) is safe.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
10	My university offers parking areas for students.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
11	My university has sufficient open campus areas and gardens.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
12	My university is conveniently located.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
13	I feel safe anywhere on campus.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
14	The cafeteria in my university provides good food.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
15	The cafeteria in my university provides food at affordable prices.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7

Final Questionnaire

Investigating the Service Quality Dimensions and their Impact on University Students' Satisfaction in a Private Higher Education Institution in Lebanon

Dear Student,

You are invited to participate in a doctorate research questionnaire on 'Investigating the Key Service Quality Dimensions and their Impact on University Students' Satisfaction in Lebanon'. This research aims to improve students' satisfaction by determining the key service quality dimensions that are most important to students. The results of this research will be used to come up with new strategies that improve students' satisfaction.

It is important to note that your participation is completely **voluntary**. Your answers will be treated with utmost **anonymity** and **confidentiality**. Refusal to participate will **not** result in any penalty. The data collected will only be used for academic purposes. No information from an individual questionnaire will be published separately; only aggregated results will be reported. If any question requests information that you don't wish to provide, please feel free to skip to the next question. You can also choose to **withdraw** from the research at any time without the need to provide any reason or justification. However, once your responses have been anonymised and aggregated, they cannot be withdrawn from the study.

If you would like to further follow this study, please feel free to contact me (k026949e@student.staffs.ac.uk) or to contact my research supervisor (v.maheshwari@staffs.ac.uk) and we will gladly send you a summary of the final results.

Kindly note that by completing and submitting this questionnaire, this imply that you have **consented** to take part of the research. Finally, it should not take more than **20 minutes** to complete this questionnaire. Your participation is highly appreciated.

Section A: About Yourself

In this section of the questionnaire, we would like you to provide us with some personal information. You can be assured that this information will remain **confidential**. Please put (x) where appropriate:

1. Gender:

Female Male

2. Age:

18-21 22-25 More than 25

3. Marital Status:

Single Divorced/ Separated Engaged Married Widowed

4. Do you support any dependents?

Yes No

5. Select the campus you are currently enrolled in:

Saida Tripoli Tyre Nabatiyeh Mount Lebanon
 Beirut Akkar Bekaa Reyak

6. Have you been previously enrolled in another university?

Yes No

7. What is the main reason for choosing your current university? Check the ONE that best applies to you.

Scholarship Award Financial Aid Offered Campus Location Influence of Friends or Family Reputation
 Affordable Tuition Entry Requirement Campus Facilities Other (please specify): _____

8. What is your Nationality?

Lebanese Palestinian Syrian Other (please specify): _____

9. What is your major?

Arts and Science Education Pharmacy
 Business Engineering

10. How long have you been a student at your current university?

Less than 1 year 1 to less than 2 years 2 to 5 years More than 5 years

11. Are you a part-time or a full-time student?

Part-Time Student Full-Time Student

12. What is your GPA?

Below 1 1 - 1.49 1.5 - 1.99 2 - 2.49 2.5 - 2.99 3 - 3.49 Above 3.5

13. What is the major source of funding for your tuition fees? Check the ONE that best applies to you.

Self Family Employer Financial Aids from your University
 Scholarships from your University Scholarships from Other Sources Other (please specify): _____

14. Are you currently employed?

Part-Time Employment Full-Time Employment Not Employed

Section B: Satisfaction

A) For the below question, please circle the number that best represents your opinion. Please circle just one number for each statement.

Students' Satisfaction		Strongly disagree	Disagree	Somewhat disagree	Neutral	Somewhat agree	Agree	Strongly agree
		1	2	3	4	5	6	7
1	I have truly enjoyed attending this university.	1	2	3	4	5	6	7
2	I am satisfied with my decision to attend this university	1	2	3	4	5	6	7
3	I am happy I decided to enroll at this university.	1	2	3	4	5	6	7

B) For the below question, please circle the number that best represents your opinion. Please circle just one number for each statement.

How likely is it that you would recommend this university to your friends?

Not at all likely												Extremely likely	
0	1	2	3	4	5	6	7	8	9	10			

Section C: About Your University

This section is composed of 7 sub-sections on seven service quality dimensions. The following statements are related to your opinion regarding your university performance and your perception of the importance of each service quality item. **Please circle just one number for each statement.**

University Image and Reputation		Performance (Your opinion regarding your university performance in each service quality item)							Importance (Your perception of the importance of each service quality item)							
		Strongly disagree	Disagree	Somewhat disagree	Neutral	Somewhat agree	Agree	Strongly agree	Don't Know	Not important at all	Low importance	Slightly important	Neutral	Moderately important	Very important	Extremely important
1	My university has a good reputation.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
2	My university is student-focused.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
3	The ranking of my university is high relative to other universities in Lebanon.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
4	Media reports on the university are generally positive.	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7

Student Social Life on Campus		Performance (Your opinion regarding your university performance in each service quality item)							Don't Know
		Strongly disagree	Disagree	Somewhat disagree	Neutral	Somewhat agree	Agree	Strongly agree	
1	My university has a variety of extracurricular activities.	1	2	3	4	5	6	7	0
2	Student life on campus is dynamic.	1	2	3	4	5	6	7	0
3	It is easy to make friends on campus.	1	2	3	4	5	6	7	0

Importance (Your perception of the importance of each service quality item)						
Not important at all	Low importance	Slightly important	Neutral	Moderately important	Very important	Extremely important
1	2	3	4	5	6	7
1	2	3	4	5	6	7
1	2	3	4	5	6	7

Quality of Teaching		Performance (Your opinion regarding your university performance in each service quality item)							Don't Know
		Strongly disagree	Disagree	Somewhat disagree	Neutral	Somewhat agree	Agree	Strongly agree	
1	In my university, I feel there is a commitment to academic excellence.	1	2	3	4	5	6	7	0
2	My courses are generally intellectually challenging.	1	2	3	4	5	6	7	0
3	The curricula and programs designed by the university are up- to date.	1	2	3	4	5	6	7	0

Importance (Your perception of the importance of each service quality item)						
Not important at all	Low importance	Slightly important	Neutral	Moderately important	Very important	Extremely important
1	2	3	4	5	6	7
1	2	3	4	5	6	7
1	2	3	4	5	6	7

Student Interaction with Faculty		Performance (Your opinion regarding your university performance in each service quality item)							Don't Know
		Strongly disagree	Disagree	Somewhat disagree	Neutral	Somewhat agree	Agree	Strongly agree	
1	I can easily contact my lecturers for advising and consultation.	1	2	3	4	5	6	7	0
2	Lecturers have the knowledge to answer my questions.	1	2	3	4	5	6	7	0
3	Lecturers are efficient in providing feedback on my performance and progress.	1	2	3	4	5	6	7	0
4	Lecturers stimulates and maintains my interest in the course.	1	2	3	4	5	6	7	0
5	Academic advisors are interested in my progress.	1	2	3	4	5	6	7	0

Importance (Your perception of the importance of each service quality item)						
Not important at all	Low importance	Slightly important	Neutral	Moderately important	Very important	Extremely important
1	2	3	4	5	6	7
1	2	3	4	5	6	7
1	2	3	4	5	6	7
1	2	3	4	5	6	7
1	2	3	4	5	6	7

Student Interaction with Administration Staff		Performance (Your opinion regarding your university performance in each service quality item)							Don't Know
		Strongly disagree	Disagree	Somewhat disagree	Neutral	Somewhat agree	Agree	Strongly agree	
1	Administration staff is friendly.	1	2	3	4	5	6	7	0
2	Administration staff shows sincere interest in solving my problems.	1	2	3	4	5	6	7	0
3	Administration staff responds quickly to my request for assistance.	1	2	3	4	5	6	7	0
4	Administration Staff keeps students informed about when services will be performed.	1	2	3	4	5	6	7	0
5	Administration staff provides services at the promised time.	1	2	3	4	5	6	7	0

Importance (Your perception of the importance of each service quality item)						
Not important at all	Low importance	Slightly important	Neutral	Moderately important	Very important	Extremely important
1	2	3	4	5	6	7
1	2	3	4	5	6	7
1	2	3	4	5	6	7
1	2	3	4	5	6	7
1	2	3	4	5	6	7

Quality of Student Support Services		Performance (Your opinion regarding your university performance in each service quality item)							Don't Know
		Strongly disagree	Disagree	Somewhat disagree	Neutral	Somewhat agree	Agree	Strongly agree	
1	My university provides helpful career services and advice.	1	2	3	4	5	6	7	0
2	My university offers a variety of scholarships and financial assistance.	1	2	3	4	5	6	7	0
3	Registration and enrolment processes are smooth and clear.	1	2	3	4	5	6	7	0
4	Services are provided in a secure and confidential way.	1	2	3	4	5	6	7	0
5	Services are provided correctly at the first time.	1	2	3	4	5	6	7	0
6	My university payment plans are flexible.	1	2	3	4	5	6	7	0

Importance (Your perception of the importance of each service quality item)						
Not important at all	Low importance	Slightly important	Neutral	Moderately important	Very important	Extremely important
1	2	3	4	5	6	7
1	2	3	4	5	6	7
1	2	3	4	5	6	7
1	2	3	4	5	6	7
1	2	3	4	5	6	7
1	2	3	4	5	6	7

Campus Facilities		Performance (Your opinion regarding your university performance in each service quality item)							Don't Know
		Strongly disagree	Disagree	Somewhat disagree	Neutral	Somewhat agree	Agree	Strongly agree	
1	My university has modern sports facilities.	1	2	3	4	5	6	7	0
2	My university has a sufficient number of computer labs with the software programs I need.	1	2	3	4	5	6	7	0
3	My university has good internet services.	1	2	3	4	5	6	7	0
4	My university library provides access to a wide number of academic journals and books.	1	2	3	4	5	6	7	0
5	My university library opening hours are generally convenient for me.	1	2	3	4	5	6	7	0
6	The classrooms have modern teaching support equipment such as projectors and computers.	1	2	3	4	5	6	7	0
7	My university has sufficient open campus areas and gardens.	1	2	3	4	5	6	7	0
8	My university is conveniently located.	1	2	3	4	5	6	7	0
9	The cafeteria in my university provides good food.	1	2	3	4	5	6	7	0
10	The cafeteria in my university provides food at affordable prices.	1	2	3	4	5	6	7	0

Importance (Your perception of the importance of each service quality item)						
Not important at all	Low importance	Slightly important	Neutral	Moderately important	Very important	Extremely important
1	2	3	4	5	6	7
1	2	3	4	5	6	7
1	2	3	4	5	6	7
1	2	3	4	5	6	7
1	2	3	4	5	6	7
1	2	3	4	5	6	7
1	2	3	4	5	6	7
1	2	3	4	5	6	7
1	2	3	4	5	6	7
1	2	3	4	5	6	7

Questionnaire (With references)

University Image and Reputation	
1	My university has a good reputation. Randheer, K. (2015). Service Quality Performance Scale in Higher Education: Culture as a New Dimension. <i>International Business Research</i> , 8(3), p.29.
2	My university is student-focused. Clewes, B.: A Student-centred Conceptual Model of Service Quality in Higher Education. <i>Quality in Higher Education</i> 9(1), 69–85 (2003)
3	The ranking of my university is high relative to other universities in Lebanon. Mikhaylov, Andrey & Mikhaylova, Anna. (2018). University rankings in the quality assessment of higher education institutions. <i>Quality - Access to Success</i> . 19(163). 111-117.
4	This university has been recommended to me by alumni or a friend or family. Petruzzellis, L. et al. (2006). Student satisfaction and quality of service in Italian universities. <i>Managing Service Quality: An International Journal</i> , 16(4), pp.349-364.
5	My university has partnerships with international universities. The curricula and programs designed by the university are up- to date. Sohail, S. and Shaikh, N. (2004). Quest for excellence in business education: a study of student impressions of service quality. <i>International Journal of Educational Management</i> , 18(1), pp. 58-65.
6	My university supports charitable organizations and/or organizes charitable events. Abu Hasan, H. F., Ilias, A., Abd Rahman, R., & Abd Razak, M. Z. (2008). Service quality and student satisfaction: A case study at private higher education institutions. <i>International Business Research</i> , 1(3), 163-175.
7	Media reports on the university are generally positive. Owino, E. (2013). The Influence of service quality and corporate image on customer satisfaction among university students in Kenya (Doctoral dissertation, KCA University).
8	The tuition I pay is worth the quality of services I am receiving from my university . Wardi, Y., & Trinanda, O. (2018). The Marketing of Higher Education: Managing Student Loyalty Based on Tuition Fee Policy and Service Quality. <i>Jurnal Bisnis Dan Manajemen</i> , 19(2), 101–108.

Student Social Life on Campus

1	My university has a variety of extracurricular activities. Lumley S, Ward P, Roberts L, Mann JP. Self-reported extracurricular activity, academic success, and quality of life in UK medical students. <i>Int J Med Educ.</i> 2015;6:111–117
2	Student life on campus is dynamic. Gatfield, T. (2000). A scale for measuring student perceptions of quality: an Australian Asian perspective. <i>Journal of Marketing for Higher Education</i> ,10(1), pp.27-41.
3	It is easy to make friends on campus. Hampton, M., (1993). Gap analysis of college student satisfaction as a measure of professional service quality. <i>Journal of Professional Services Marketing</i> , 9(1), pp.115-128.

Quality of Teaching

1	In my university, I feel there is a commitment to academic excellence. Green, P. (2014). Measuring service quality in higher education: A South African case study. <i>Journal of International Education Research</i> , 10, 131-142.
2	My courses are generally intellectually challenging. Hampton, M., (1993). Gap analysis of college student satisfaction as a measure of professional service quality. <i>Journal of Professional Services Marketing</i> , 9(1), pp.115-128.
3	The curricula and programs designed by the university are up- to date. Sohail, S. and Shaikh, N. (2004). Quest for excellence in business education: a study of student impressions of service quality. <i>International Journal of Educational Management</i> , 18(1), pp. 58-65.

Student Interaction with Faculty

1	I can easily contact my lecturers for advising and consultation. Gatfield, T. (2000). A scale for measuring student perceptions of quality: an Australian Asian perspective. <i>Journal of Marketing for Higher Education</i> ,10(1), pp.27-41. Parasuraman, A. et al., (1985). A conceptual model of service quality and its implications for future research. <i>Journal of Marketing</i> , pp. 41-50.
2	Lecturers have the knowledge to answer my questions . Parasuraman, A. et al., (1985). A conceptual model of service quality and its implications for future research. <i>Journal of Marketing</i> , pp. 41-50.
3	Lecturers are efficient in providing feedback on my performance and progress. Fernandes, C. et al., (2013). Understanding Student Satisfaction And Loyalty In The UAE HE Sector. <i>International Journal Of Educational Management</i> , 27, pp. 613-630.
4	Lecturers stimulates and maintains my interest in the course. Hampton, M., (1993). Gap analysis of college student satisfaction as a measure of professional service quality. <i>Journal of Professional Services Marketing</i> , 9(1), pp.115-128.
5	Academic advisors are interested in my progress. Hampton, M., (1993). Gap analysis of college student satisfaction as a measure of professional service quality. <i>Journal of Professional Services Marketing</i> , 9(1), pp.115-128.

Student Interaction with Administration Staff

1	Administration staff is friendly. Miao, H. & Bassham, M.W. (2006) Embracing customer service in libraries. <i>Library Management</i> , 28, 53–61. Parasuraman, A. et al., (1985). A conceptual model of service quality and its implications for future research. <i>Journal of Marketing</i> , pp. 41-50.
2	Administration staff shows sincere interest in solving my problems. Parasuraman, A. et al., (1985). A conceptual model of service quality and its implications for future research. <i>Journal of Marketing</i> , pp. 41-50.
3	Administration staff responds quickly to my request for assistance. Parasuraman, A. et al., (1985). A conceptual model of service quality and its implications for future research. <i>Journal of Marketing</i> , pp. 41-50.
4	Administration Staff keeps students informed about when services will be performed. Parasuraman, A. et al., (1985). A conceptual model of service quality and its implications for future research. <i>Journal of Marketing</i> , pp. 41-50.
5	Administration staff provides services at the promised time. Parasuraman, A. et al., (1985). A conceptual model of service quality and its implications for future research. <i>Journal of Marketing</i> , pp. 41-50.

Quality of Student Support Services

1	My university provides helpful career services and advice. Engelland, B.T., Workman, L. and Singh, M. (2000), "Ensuring service quality for campus career services centers: a modified SERVQUAL scale", <i>Journal of Marketing Education</i> , Vol. 22 No. 3, pp. 236-45.
2	My university offers a variety of scholarships and financial assistance. Hanaysha, Jalal & M, Dileep & Yeop Abdullah, Othman. (2012). SERVICE QUALITY AND SATISFACTION: STUDY ON INTERNATIONAL STUDENTS IN UNIVERSITIES OF NORTH MALAYSIA. <i>International Journal of Research in Management</i> . 3. 116-133.
3	Registration and enrolment processes are smooth and clear. Annamdevula, S., & Bellamkonda, R. (2012). Development of HiEdQUAL for measuring service quality in Indian higher education sector. <i>International Journal of Innovation, Management and Technology</i> , 3(4), 412–416
4	Services are provided in a secure and confidential way. Parasuraman, A. et al., (1985). A conceptual model of service quality and its implications for future research. <i>Journal of Marketing</i> , pp. 41-50.
5	Services are provided correctly at the first time. Parasuraman, A. et al. (1994). Reassessment of expectations as a comparison standard in measuring service quality: implications for further research, <i>Journal of Marketing</i> , 58 (1), pp. 111-124.
6	My university payment plans are flexible. Esmaceli, A. and Kahnali, R. (2015). An integration of SERVQUAL dimensions and logistics service quality indicators (A case study). <i>International Journal of Services and Operations Management</i> , 21(3), pp. 289-309.

Campus Facilities

1	My university has modern sports facilities. Abdullah, N., & Mohamad, N. (2016). Parasuraman, A. et al., (1985). A conceptual model of service quality and its implications for future research. <i>Journal of Marketing</i> , pp. 41-50.
2	My university has a sufficient number of computer labs with the software programs I need. Kara AM, Tanui E, Kalai JM (2016) Educational service quality and students' satisfaction in public universities in Kenya. <i>Int J Educ Soc Sci</i> 3: 37-48.
3	My university has good internet services. Kara AM, Tanui E, Kalai JM (2016) Educational service quality and students' satisfaction in public universities in Kenya. <i>Int J Educ Soc Sci</i> 3: 37-48.
4	My university library provides access to a wide number of academic journals and books. Kara AM, Tanui E, Kalai JM (2016) Educational service quality and students' satisfaction in public universities in Kenya. <i>Int J Educ Soc Sci</i> 3: 37-48.
5	My university library opening hours are generally convenient for me. Parasuraman, A. et al., (1985). A conceptual model of service quality and its implications for future research. <i>Journal of Marketing</i> , pp. 41-50.
6	The classrooms have modern teaching support equipment such as projectors and computers. Kara AM, Tanui E, Kalai JM (2016) Educational service quality and students' satisfaction in public universities in Kenya. <i>Int J Educ Soc Sci</i> 3: 37-48.
7	My university offers comfortable accommodation (dorms). Radder, L., & Han, X. (2009). Service Quality of On-Campus Student Housing: A South African Experience. <i>The International Business & Economics Reserach Journal</i> , 8(11), 107-119.
8	My university offers accommodation (dorms) at an affordable price. Radder, L., & Han, X. (2009). Service Quality of On-Campus Student Housing: A South African Experience. <i>The International Business & Economics Reserach Journal</i> , 8(11), 107-119.
9	My university accommodation (dorms) is safe. Radder, L., & Han, X. (2009). Service Quality of On-Campus Student Housing: A South African Experience. <i>The International Business & Economics Reserach Journal</i> , 8(11), 107-119.
10	My university offers parking areas for students. Deshwal P, Ranjan V, Mittal G. College clinic service quality and patient satisfaction. <i>Int. J. Health Care Qual. Assur.</i> 2014;27:519–530.
11	My university has sufficient open campus areas and gardens. Athiyaman, A., (1997). Linking student satisfaction and service quality perceptions: the case of university education. <i>European Journal of Marketing</i> , 31(7), pp.528-540.
12	My university is conveniently located. Saleem, S. S., Moosa, K., Imam, A., & Khan, R. A. (2017). Service Quality and Student Satisfaction : The Moderating Role of University Culture , Reputation and Price in Education Sector of Pakistan. <i>Iranian Journal of Management Studies</i> , 10(1), 237–258.
13	I feel safe anywhere on campus. Abu Hasan, H. F., Ilias, A., Abd Rahman, R., & Abd Razak, M. Z. (2008). Service quality and student satisfaction: A case study at private higher education institutions. <i>International Business Research</i> , 1(3), 163-175.
14	The cafeteria in my university provides good food. El-Said, O. A., & Fathy, E. A. (2015). Assessing university students' satisfaction with on-campus cafeteria services. <i>Tourism Management Perspectives</i> , 16, 318-324
15	The cafeteria in my university provides food at affordable prices. El-Said, O. A., & Fathy, E. A. (2015). Assessing university students' satisfaction with on-campus cafeteria services. <i>Tourism Management Perspectives</i> , 16, 318-324

Appendix B. Performance Importance Ranking

Item #	Item	N-Performance	Mean - Performance	Rank - Performance	N-Importance	Mean-Importance	Rank - Importance	Gap
13	interaction with faculty:Lecturers can answer most of my questions on the course content.	1044	5.77	1	984	6.05	1	- 0.28
12	interaction with faculty:I can easily contact my lecturers for advising and consultation.	1044	5.69	2	984	5.97	3	- 0.28
11	social_life:It is easy to make friends on campus.	1044	5.62	3	984	5.7	29	- 0.08
15	interaction with faculty:Lecturers stimulates and maintains my interest in the course.	1044	5.58	4	984	5.91	9	- 0.33
14	interaction with faculty:Lecturers are efficient in providing feedback on my performance and progress.	1044	5.58	5	984	5.93	6	- 0.35
7	image_reputation:My university has partnerships with international universities.	1044	5.54	6	984	5.46	40	- 0.08
16	interaction with faculty:Academic advisors are interested in my progress.	1044	5.52	7	984	5.9	11	- 0.38
2	image_reputation:My university is student-focused.	1044	5.51	8	984	5.82	23	- 0.31
19	Quality of education:The curricula and programs designed by the university are up- to date.	1044	5.48	9	984	6	2	- 0.52
27	Studentsupport:Registration and enrolment processes are smooth and clear.	1044	5.46	10	984	5.85	18	- 0.39
28	Studentsupport:Services are provided in a secure and confidential way.	1044	5.43	11	984	5.76	28	- 0.33
45	facilities:I feel safe anywhere on campus.	1044	5.43	12	984	5.92	8	- 0.49
1	image_reputation:My university has a good reputation.	1044	5.41	13	984	5.78	27	- 0.37
17	Quality of education:In my university, I feel there is a commitment to academic excellence.	1017	5.41	14	984	5.91	10	-0.5
26	Studentsupport:My university offers a variety of scholarships and financial assistance.	1044	5.4	15	984	5.95	5	- 0.55

8	image_reputation:My university supports charitable organizations and/or organizes charitable events.	1039	5.38	16	984	5.53	38	- 0.15
5	image_reputation:Media reports on the university are generally positive.	993	5.37	17	984	5.56	37	- 0.19
23	interaction:Administration Staff keeps students informed about when services will be performed.	1044	5.36	18	984	5.85	17	- 0.49
18	Quality of education:My courses are generally intellectually challenging.	1044	5.33	19	984	5.7	30	- 0.37
24	interaction:Administration staff provides services at the promised time.	1044	5.31	20	984	5.89	12	- 0.58
30	Studentsupport:My university payment plans are flexible.	1044	5.31	21	984	5.96	4	- 0.65
29	Studentsupport:Services are provided correctly at the first time.	1044	5.3	22	984	5.81	24	- 0.51
32	facilities:My university has a sufficient number of computer labs with the software programs I need.	1019	5.25	23	984	5.83	21	- 0.58
21	interaction:Administration staff shows sincere interest in solving my problems.	1044	5.2	24	984	5.93	7	- 0.73
41	facilities:My university is conveniently located.	1044	5.19	25	984	5.86	15	- 0.67
20	interaction:Administration staff is friendly.	1044	5.18	26	984	5.8	25	- 0.62
22	interaction:Administration staff responds quickly to my request for assistance.	1044	5.16	27	984	5.85	19	- 0.69
35	facilities:My university library opening hours are generally convenient for me.	1031	5.11	28	984	5.6	34	- 0.49
4	image_reputation:This university has been recommended to me by alumni or a friend or family.	1044	5.1	29	984	5.18	42	- 0.08
25	Studentsupport:My university provides helpful career services and advice.	1044	5.1	30	984	5.86	14	- 0.76
10	social_life:Student life on campus is dynamic.	1041	5.08	31	984	5.57	36	- 0.49
9	social_life:My university has a variety of extracurricular activities.	1044	5.08	32	984	5.53	39	- 0.45
6	image_reputation:The tuition I pay is worth the quality of services I am receiving from my university.	1044	5.07	33	984	5.68	31	- 0.61
42	facilities:The cafeteria in my university provides good food.	1021	5.06	34	984	5.85	20	- 0.79
3	image_reputation:The ranking of my university is	1044	5.04	35	984	5.6	35	- 0.56

	high relative to other universities in Lebanon.							
36	facilities:The classrooms have modern teaching support equipment such as projectors and computers.	1044	5.03	36	984	5.82	22	- 0.79
40	facilities:My university has sufficient open campus areas and gardens.	1036	4.95	37	984	5.88	13	- 0.93
43	facilities:The cafeteria in my university provides food at affordable prices.	1023	4.88	38	984	5.79	26	- 0.91
34	facilities:My university library provides access to a wide number of academic journals and books.	1044	4.87	39	984	5.62	33	- 0.75
31	facilities:My university has modern sports facilities.	977	4.42	40	984	5.45	41	- 1.03
44	facilities:My university offers parking areas for students.	1044	4.27	41	984	5.67	32	-1.4
39	facilities:My university accommodation (dorms) is safe.	819	4.23	42	984	5.13	43	-0.9
38	facilities:My university offers accommodation (dorms) at an affordable price.	835	4.08	43	984	5.03	45	- 0.95
33	facilities:My university has good internet services.	1017	4.04	44	984	5.86	16	- 1.82
37	facilities:My university offers comfortable accommodation (dorms).	861	3.37	45	984	5.11	44	- 1.74

Appendix C. Coding Glossary

Items	Abbreviation
image_ reputation: My university has a good reputation.	I-1
image_ reputation: My university is student-focused.	I-2
image_ reputation: The ranking of my university is high relative to other universities in Lebanon.	I-3
image_ reputation: This university has been recommended to me by alumni or a friend or family.	I-4
image_ reputation: Media reports on the university are generally positive.	I-5
image_ reputation: The tuition I pay is worth the quality of services I am receiving from my university.	I-6
image_ reputation: My university has partnerships with international universities.	I-7
image_ reputation: My university supports charitable organizations and/or organizes charitable events.	I-8
social_ life: My university has a variety of extracurricular activities.	SL1
social_ life: Student life on campus is dynamic.	SL2
social_ life: It is easy to make friends on campus.	SL3
interaction with faculty: I can easily contact my lecturers for advising and consultation.	F1
interaction with faculty: Lecturers can answer most of my questions on the course content.	F2
interaction with faculty: Lecturers are efficient in providing feedback on my performance and progress.	F3
interaction with faculty: Lecturers stimulates and maintains my interest in the course.	F4
interaction with faculty: Academic advisors are interested in my progress.	F5
Quality of education: In my university, I feel there is a commitment to academic excellence.	E1
Quality of education: My courses are generally intellectually challenging.	E2
Quality of education: The curricula and programs designed by the university are up- to date.	E3
interaction: Administration staff is friendly.	A1
interaction: Administration staff shows sincere interest in solving my problems.	A2
interaction: Administration staff responds quickly to my request for assistance.	A3
interaction: Administration Staff keeps students informed about when services will be performed.	A4
interaction: Administration staff provides services at the promised time.	A5
Student support: My university provides helpful career services and advice.	S1
Student support: My university offers a variety of scholarships and financial assistance.	S2
Student support: Registration and enrolment processes are smooth and clear.	S3
Student support: Services are provided in a secure and confidential way.	S4
Student support: Services are provided correctly at the first time.	S5
Student support: My university payment plans are flexible.	S6
facilities: My university has modern sports facilities.	C1
facilities: My university has a sufficient number of computer labs with the software programs I need.	C2

facilities: My university has good internet services.	C3
facilities: My university library provides access to a wide number of academic journals and books.	C4
facilities: My university library opening hours are generally convenient for me.	C5
facilities: The classrooms have modern teaching support equipment such as projectors and computers.	C6
facilities: My university offers comfortable accommodation (dorms).	C7
facilities: My university offers accommodation (dorms) at an affordable price.	C8
facilities: My university accommodation (dorms) is safe.	C9
facilities: My university has sufficient open campus areas and gardens.	C10
facilities: My university is conveniently located.	C11
facilities: The cafeteria in my university provides good food.	C12
facilities: The cafeteria in my university provides food at affordable prices.	C13
facilities: My university offers parking areas for students.	C14
facilities: I feel safe anywhere on campus.	C15



PROPORTIONATE REVIEW APPROVAL FEEDBACK

Researcher Name:	Farah Khattab
Title of Study:	Investigating the Service Quality Dimensions and their Impact on Private University Students' Satisfaction in Lebanon.
Status of approval:	Approved

Action now needed:

Your project proposal has been approved by the Ethics Panel and you may commence the implementation phase of your study. You should do so in conjunction with your supervisor.

You should note that any divergence from the approved procedures and research method will invalidate any insurance and liability cover from the University. You should, therefore, notify the Panel of any significant divergence from this approved proposal.

When your study is complete, please send the ethics committee an end of study report. A template can be found on the ethics BlackBoard site.

Signed:

A handwritten signature in blue ink, appearing to read 'Farah Khattab'.

Date: 25th June 2018

Chair of the School of Business, Leadership & Economics



Developing a Service Quality Model for Private Higher Education Institutions in Lebanon

Farah Khattab

School of Business, Lebanese International University, P.O. Box: 146404, Beirut-Lebanon

ABSTRACT

Objective –The objective of this study is to identify and implement the most suitable and prominent dimensions for service quality, which is key for the development of a successful model. Within a competitive academic environment, Lebanese higher education institutions are forced to develop their own dimensions of service quality and offer higher quality services than their competitors. Therefore, identifying the key dimensions of service quality in the Lebanese higher education sector is a priority for universities, to improve their overall services and maintain high levels of retention. The foremost condition to success is a well-developed service quality assessment process to evaluate university services. This paper aims to investigate the most effective service quality assessment tool for Lebanese universities, in addition to the corresponding dimensions of service quality and their impact on the satisfaction of the students.

Methodology/Technique – This study undertakes a comprehensive review of recent studies dealing with different aspects of service quality models and the corresponding service quality dimensions are presented and discussed. Considering the proved and established qualities and capabilities of the SERVQUAL model and the urgent need for service quality assessment for private higher education institutions in Lebanon, a modified SERVQUAL model with seven dimensions is proposed and highlighted as a potential model for assessing service quality in the Lebanese higher education sector.

Findings – Based on the comprehensive literature review carried out, it was noted that the SERVQUAL instrument is the most prominent model used in recent investigations to assess service quality in the higher education sector.

Novelty – Choosing the proper and the most influential service quality model is one of the crucial challenges faced in higher education.

Type of Paper: Review.

Keywords: Service Quality; Quality Dimensions; Service Model; Customer Satisfaction; Lebanese Higher Education.

JEL Classification: I20, I23, I29.

1. Introduction

The higher education sector in Lebanon is one of the most established sectors in the Middle Eastern

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Affiliation: School of Business, Lebanese International University, P.O. Box: 146404, Beirut-Lebanon region, with one large public university and 41 private higher education institutions, with a total enrolment of 192,522 students (BankMed, 2014). Within a challenging and competitive academic environment, and

considering the variety of services provided by different types of higher education institutions, the Lebanese higher education sector still lacks a systematic and effective service quality assessment tool, which hinders improvements in overall performance. This paper presents a comprehensive review of recent investigations in this area and progress in the field of service quality models as well as the governing service quality dimensions, creating a basis for development of an effective assessment tool to be implemented in the Lebanese higher education sector. Moreover, different service quality dimensions in higher education are reported and examined in order to assess the importance and influence of each dimension on service quality. Based on a thorough literature review and the discussion presented for different service quality models and their corresponding dimensions, a service quality model with seven dimensions is proposed to serve as a tool for assessing service quality in Lebanese higher education.

2. Service Quality

Quality is a key factor of success in the delivery of services and attaining customer satisfaction in a modern, sophisticated and competitive world (Ghobadian et al., 1994). In recent decades, a large portion of research has investigated and attempted to characterize service quality, however they are yet to produce a common definition of this (Becket and Brookes, 2006; Parasuraman et al., 1985). Nevertheless, some notable definitions of service quality in existing literature are: providing a service that complies with the customers' needs (Boomsma, 1992) and providing a service that meets or exceeds customer expectations (Grönroos, 1984; Parasuraman et al., 1985). According to Berry et al. (1988) and Crosby (1979), service quality refers to conformity to customer specifications, which is the extent to which essential features of the service provided meet the customer's needs (ISO 9000: 2005). Customers weigh up their expectations with their perceptions of the delivered service and evaluate if the service in fact met or exceeded their expectations. Factors such as external environmental changes and modifications, past experiences and the competition between service providers have an effect on customers' expectations and perceptions, which may lead to a major change in their needs over time and across different situations (Grönroos, 1984; Parasuraman et al., 1985; O'Neil and Palmer, 2004; and Zeithaml et al., 1990).

3. Service Quality Dimensions in Higher Education

Peters et al. (1982) highlights quality in education as excellence, whereas Crosby (1979) states that quality in education refers to the output of compliance with set goals. In addition, Holdford and Patkar (2003) define service quality as an assessment of the services offered to the students in their educational journey. Defining and characterizing service quality dimensions is a major challenge, and there is extensive debate surrounding the correct number of dimensions. Cultural diversity, demographic variables and personal factors all contribute to the variation in service quality dimensions in various studies, locations and situations. Another factor leading to such variation is the difficulty to generalize in many studies due to inappropriate sampling methods and unrepresentative sample sizes (Douglas et al., 2006; Hanaysha et al., 2011; Senthilkumar and Arulraj, 2010). Table 1 summarizes the major service quality dimensions employed in some studies targeting service quality assessment in higher education, in various countries.

Table 1. Service Quality Dimensions Reported in the Literature

Study	Service Quality Dimensions
Abari et al. (2011)	Guarantee, Sympathy, Facilities, Responsibility and Reliance
Abdullah (2006a)	Reputation, Access, Program issues, Academic aspects, Non-academic aspects, and Understanding

Aldridge and Rowley (1998)	Services and facilities for students, Equal opportunities, Teaching and learning, Feedback and complaints, Communication, Consultation, Teaching and learning support, Disability and environment and Teaching and learning development
Annamderula and Bellamkonda (2012)	Administrative services, Campus infrastructure, Support services, Teaching and course content, and Academic facilities
Asefi et al. (2017)	Assurance, Responsiveness, Empathy, Tangibles and Confidence
Athiyaman (1997)	Quality of Teaching, Recreational facilities, Library services, Availability of staff for student consultation, Computing facilities, Class size, Student workload, and Level of difficulty of subject content
Carman (1990)	Assurance, Responsiveness, Reliability, Tangibles and Empathy
Cronin and Taylor (1992)	Assurance, Responsiveness, Reliability, Tangibles, Empathy and Customer Satisfaction
Gatfield (2000)	Guidance, Academic instruction, Recognition and Campus life
Hadikoemoro (2002)	Academic services, General attitudes, Readiness and Attentiveness, Fair and Impartial and Tangible
Hampton (1993)	Quality of education, Social life-personal, Teaching, Campus facilities, Student Advising, Social life-campus, and Effort to pass courses
Joseph and Joseph (1997)	Academic reputation, Program Issues, Word of mouth, Time, Location, Program aspects, Campus opportunities, Family, Physical aspects, and Peer influence
Lee et al. (2000)	Overall impression of the university, Overall impression of the education quality
Nguyen and Leblanc (2001)	Administration, Responsiveness, Curriculum, Physical evidence, Access to facilities, Functional quality, Technical quality
Owino (2013)	Human elements, Non-human elements, Core service, Service blueprint and Corporate image
Parasuraman et al. (1985)	Access, Courtesy, Communication, Tangibles, Responsiveness, Reliability, Credibility, Security Understanding and Competence
Parasuraman et al. (1988)	Assurance, Reliability, Empathy, Tangibles and Responsiveness
Pereda et al. (2007)	Reliability, Tangibility, Sufficiency of resources and Quality of faculty
Randheer (2015)	Reputation, Access, Program issues, Academic aspects, Non-academic aspects, Understanding, and Culture
Sohail and Shaikh (2004)	Reputation, Access to facilities, Contact personnel, Physical evidence, Curriculum and Responsiveness

4. Service Quality Assessment Models

4.1 The Grönroos Model and the Lehtinen and Lehtinen Model

One of the first investigations in the field of service quality assessment was presented by Lehtinen and Lehtinen (1982), who proposed a service quality model with three major dimensions: interactive quality, physical quality and corporative quality. Interactive quality highlights the interaction between the services provided and the customer, whereas physical quality refers to the tangible part of the service provided. In addition, the image perceived by customers of the service provider characterizes the corporative quality.

Building on this model, Grönroos (1984) developed a model that defines service quality as the gap between expected service levels and customer perceptions of the delivered service. The model significantly divides customer perceptions into technical quality, dealing with “what” service is provided and functional quality dealing with “how” this service is provided. Grönroos identifies a third quality dimension, being the image of the service provider, which moderates both technical and functional aspects of quality to arrive at a perceived level of service. With respect to an organization’s image, the more positive and bright the image is, the less impact a mistake has on the perception of service quality (Grönroos, 1990). The level of the service quality perceived is governed by the functional and technical quality and the difference between the expected and perceived service.

4.2 SERVQUAL Model

The SERVQUAL model, developed by Parasuraman et al. (1988), is one of the most widely used service quality models and remains as one of the most controversial models. Parasuraman, et al. (1988) proposes a more precise criterion for assessing service quality and developed a measurement scale for service quality called SERVQUAL. In their model, they supported the gap model that is driven by consumers evaluating quality, by recognizing their expectations of the provided service and comparing them to their perception of the actual performance of the delivered service. Qualitative interviews of 12 focus groups made up of customers and 14 executives in 4 different service businesses were performed to develop the SERVQUAL gap model with the well-known ‘Q=P-E’ equation; (Q) being the quality, (E) the customers’ expectations and (P) their perception of the service provider’s overall performance. Thus, customer satisfaction is relative to the quality of the service delivered.

As shown in Figure 1, five of the gaps (P-E) are defined in the SERVQUAL model (Parasuraman et al., 1985). Gap 5 represents a dependent variable on the consumer side and the other 4 gaps represent independent variables on the service provider side.

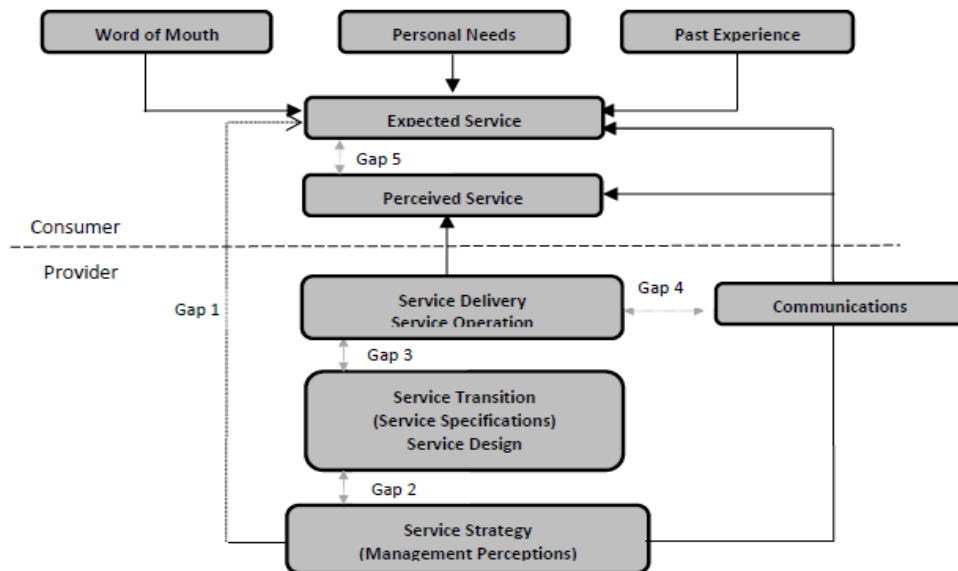


Figure 1. SERVQUAL model- Parasuraman et al. (1985)

A positive gap indicates customer satisfaction; the higher the gap, the higher the satisfaction rate. Parasuraman et al. (1985) links Gap 5 with service quality dimensions as evidence of how customers employ all dimensions in their evaluation. In addition, they identify 10 dimensions of service quality: communication, responsiveness, tangibles, access, reliability, courtesy, understanding, competence, credibility and security. In a later study, Parasuraman et al. (1988) correlates those 10 dimensions and developed 5 dimensions of service quality into the SERVQUAL model; reliability, empathy, tangibility, assurance and responsiveness with 22 corresponding statements.

Buttle (1996) questions expectation as a suitable paradigm in service quality assessment. Babakus and Boller (1992) and Cronin and Taylor (1992) also state that the discrepancies between expectations and perceptions do not provide any additional value to the performance only instrument. In addition, Gabbott and Hongg (1998) claim that even perfect service falls short of meeting customer expectations, resulting in a negative gap. Moreover, the SRERVQUAL model was criticized for being non-universal and inapplicable to different sectors (Chen et al., 2006; Smith et al., 2007). Cuthbert (1996) states that the dimensions of the SERVQUAL model are inappropriate in the framework of higher education. Parasuraman et al. (1991) agrees that the SERVQUAL model requires modification in order to apply to specific contexts.

Although it has been subject to a wide range of criticism and debate, SERVQUAL has been successfully and widely implemented in different locations around the world and in different types of service organizations. In their study, Imrie et al. (2002) states that the SERVQUAL model requires alteration when taking into consideration the culture and environment in which it is implemented. This is supported by Malhotra et al. (1994) who argues that the dissimilarities between developed and developing countries can affect service quality dimensions for students. One such example is the “responsive” dimension, as it is related to socio-cultural effects, taking the value of time into consideration. They also claim that people who live in developed countries are more likely to have a strong perception of time due to the fast pace of their lifestyle, whereas their counterparts in developing countries do not give time as much consideration. Therefore, it is vital to apprehend the cultural differences between countries, concentrating on economic development and the numerous dimensions of service quality. With respect to the higher education sector, various studies have modified the SERVQUAL model, stating that the standard model structure is not entirely applicable to the education sector (Hampton, 1993; Gatfield, 2000; Kerlin, 2000).

4.3 SERVQUAL Model Implemented in Higher Education

The comprehensive literature review carried out above notes that the SERVQUAL instrument is the most prominent model used to assess service quality in the higher education sector. In a recent study, Moosavi et al. (2017) conducts a comprehensive review and analysis of the quality of educational services in Iran, from the student perspective. Following an analysis of 18 various studies, they report that the SERVQUAL model is the most effective model to be used for assessing and measuring service quality in the educational sector. In addition, they conclude that the overall quality of the current educational service is much lower than the expectations of the students.

In another study, Asefi et al. (2017) employed the SERVQUAL model to assess the gap between student expectations and perceptions of the service quality in the school of Nursing and Midwifery in Shahrekord University of Medical Sciences in Iran. A SERVQUAL questionnaire was considered using 5 dimensions; assurance, responsiveness, empathy, tangibles and confidence. An overall negative gap was reported between the students' expectations and perceptions of service quality, with the tangibles dimensions resulting in the largest gap.

Moreover, Legcevic (2009) performed a study aimed at investigating student perceptions and their expectation of service quality at the Law Faculty of Osijek University in Croatia employing the SERVQUAL model. Legcevic reported significant differences in the gap between perceptions and expectations among the 5 dimensions, while concluding that student expectations exceeded their perceptions of the quality of the service provided.

In assessing undergraduate students' perceptions of service quality, Polycarpou (2007) developed an adapted SERVQUAL instrument for conducting a case study of one of the leading colleges in Cyprus. The SERVQUAL 5 dimensions with the 22 measurement items were considered as a basis for the questionnaire. The author reported a wide gap in 20 out of the 22 items, where the tangibles dimension had the smallest gap and the empathy dimension had the largest gap.

Al-Alak and Alnaser (2012) studied the interdependencies and relationships between the 5 SERVQUAL dimensions of service quality and undergraduate student satisfaction at the Business Faculty at University of Jordan. In that investigation, assurance and reliability were found to be the most important service quality dimensions for the higher education sector in Jordan.

In another study, Yousapronpaiboon (2014) investigated service quality in the Thailand Higher Education sector. A case study of a private universities in Thailand using the 5 dimensions of the SERVQUAL instrument; reliability, assurance, tangibles, empathy and responsiveness was used and the SERVQUAL questionnaire was distributed to 350 undergraduate students. Based on the investigation results, the author reported that higher education in Thailand does not meet the expectations of the students, as a negative gap was reported between the students' perceptions and expectations for the 5 dimensions employed. To reduce the gap, an upgrade in the university facilities and equipment was recommended.

In addition, Zeshan et al. (2010) selected 8 business schools in Pakistan to serve as a case study to assess service quality employing SERVQUAL. They reported an overall low quality in all schools, in terms of all the service quality dimensions.

Recently, a study by Owino (2013), used a 56-item scale instrument based on performance only by consolidating the 5 dimensions of SERVQUAL into 2: human elements (reliability, responsiveness, assurance, empathy) and non-human elements (physical evidence). Two other dimensions were introduced and tested; core service and service blueprint and considered corporate image as a moderator.

4.4 Other Service Quality Models Applied in Higher Education

In addition to the widely implemented SERVQUAL model, various service quality models have been developed and implemented in the context of higher education. A service performance model (SERVPERF) was developed by Cronin and Taylor (1992), derived from SERVQUAL, using all 5 dimensions but concentrating solely on customers' perception, denoted as (P) in SERVQUAL, and ignoring expectations (E). The SERVPERF model has been implemented by different researchers (Oliver, 1993; McAlextender et al., 1994). These researchers claim that measuring the perception of the customer using performance only (SERVPERF model) outperforms the perception-expectation gap model (SERVQUAL model).

In their study, Abdullah et al. (2006a) modified the SERVPERF model in order for it to fit more suitably in the higher education context, and developed a new version based on performance-only measures, called the HEDPERF model. The model has 2 sections; the first targets the participants information and profile and the second deals with various aspects of Malaysian higher education service. They identified 6 dimensions: reputation, understanding, academic aspects, non-academic aspects, program issues and access.

Brochado (2009) compared the performance of different service quality models including HEDPERF, SERVPERF, and importance-weighted SERVQUAL. Considering the reliability and validity criteria, it is reported that the HEDPERF and SERVPERF models yield the highest scores. Nevertheless, a combined HEDPERF-SERVPERF model was developed in 2006 by Abdullah (2006b). The dimensions of the new model included academic aspects, non-academic aspects, empathy and reliability. However, Abdullah (2006c) compared these 3 models (HEDPERF, SERVPERF and HEDPERF-SERVPERF) and found that the HEDPERF model was a better fit for the higher education sector.

Moreover, Martilla and James (1977) propose the Importance-Performance Analysis (IPA) model derived from the SERVQUAL model, however this model was later adjusted by O'Neil and Palmer (2004) in order to suit the education sector. Despite the fact that the IPA model is based primarily on performance, it also considers the priority that the customers give to each of the service features. Thus, it relies on what customers

perceive as being important and attempts to categorize the importance of service quality dimensions to customers. The IPA model was modified to suit the educational setting by using 3 focus groups.

Compared to the previous models, O'Neil and Palmer (2004) consider the IPA model more convenient for higher education as past, current and future student perceptions of actual performance can be correlated. The model dimensions are divided into 4 quadrants, where each quadrant characterizes simultaneous relations between importance and performance, being either high or low. The IPA model has become increasingly popular in recent years due to its simplicity, applicability and its diagnostic value (Joseph and Joseph, 1997; Ford et al., 1999).

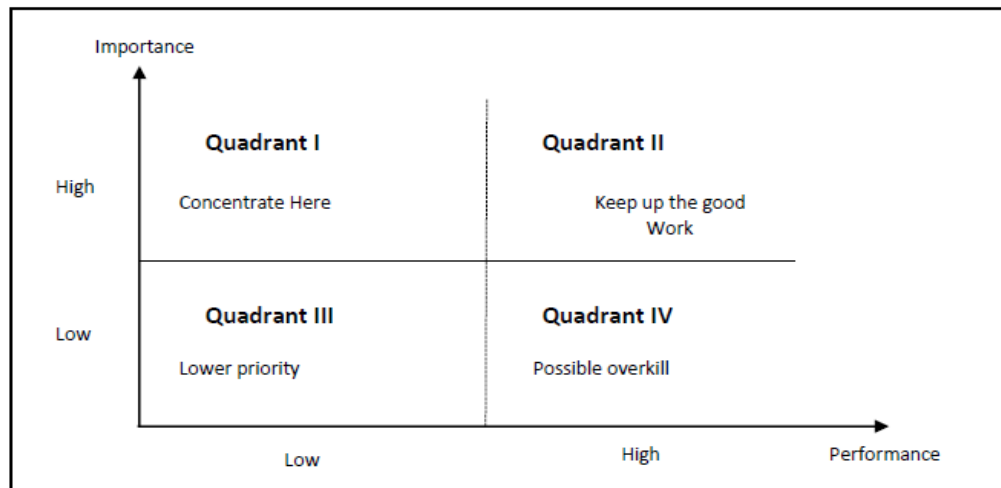


Figure 2. IPA model- Martilla and James (1977)

To overcome the weaknesses of the SERVPERF and HEDPERF models, another model was developed by Sultan and Wong (2010). The PHED model was implemented to measure the service quality performance at different Japanese universities with only international students participating. Based on the findings, they identified 8 service quality dimensions: capability, dependability, effectiveness, efficiency, semester and syllabus, competencies, assurance and unusual situation management. Nevertheless, the study findings could not be generalized as the survey was limited to only international students.

A recent study by Randheer (2015) adjusted the SERVPERF and HEDPERF models by introducing culture (CUL) as an additional dimension of the service quality model, in addition to the 6 dimensions in HEDPERF. As the Arab Gulf culture is rooted into the educational system, Randheer (2015) considered and implemented the Arab cultural aspects within the existing HEDPERF model to measure service quality in higher education for 750 business students in 5 different Saudi Arabian universities. They found that the CUL-HEDPERF model with its 7 corresponding dimensions: culture, reputation, understanding, access academic aspects, non-academic aspects and program issues, is more convenient than HEDPERF and SERVPERF models in assessing service quality in higher education institutions in the Gulf region.

Conclusion

The SERVQUAL model has been successfully and widely implemented in different countries around the world and in different types of higher education institutions to assess service quality. As highlighted in the literature review, many researchers have stressed that the initial SERVQUAL model presented and developed

by Parasuraman et al. (1988), with 5 dimensions of service quality (reliability, empathy, tangibility, assurance and responsiveness) is not universal in its current format and is largely inapplicable to higher education.

Moreover, additional investigations suggest that the SERVQUAL model is in need of alteration to take into consideration the culture and environment where it is implemented. Thus, a large number of modified and adapted versions of the conventional SERVQUAL model have been developed and successfully implemented to assess service quality in the higher education sector in various countries. Building on the large body of research presented and reviewed in this study, and considering the challenges faced by the private higher education institutions in Lebanon and the absence of systematic and effective service quality assessment tools, this paper proposes a modified SERVQUAL model to be used as a basis for service quality assessment and student satisfaction measurement in Lebanese private higher education institutions.

The modified model should consider the 3 qualities identified by the Grönroos (1984) and Lehtinen and Lehtinen (1982) models: physical quality (physical campus facilities), interactive quality (interaction with administrative staff, faculty and other students) and corporative quality (university image and reputation) along with the recommendations of the Importance-Performance (IPA) model.

Moreover, several researchers have recommended and implemented 'university image and reputation' (Sohail and Shaikh, 2004; Abdullah, 2006; and Randheer, 2015), 'quality of education' and 'quality of student's services support' (Athiyaman, 1997; Hadikoemoro, 2002; Lee et al., 2000; Nguyen and Leblanc, 2001; and Pereda et al., 2007) as 3 valuable dimensions in the assessment of service quality in the higher education sector. Thus, the model proposes the following 7 service quality dimensions: 'university image and reputation', 'quality of education', 'quality of student's services support', 'campus physical facilities', 'students social life on campus', 'interaction with faculty' and 'interaction with administrative staff'.

Based on this proposed model, a questionnaire was developed and refined by using focus group interviews made up of students, to develop and validate the dimensions that are related to the Lebanese higher education framework. In addition, experts in the area have also reviewed the questionnaire items.

In the absence of sufficient studies within the Lebanese higher education context, this work forms an important basis to develop an effective service quality assessment tool, which is valuable to higher education institutions in Lebanon. In addition, this paper sets guidelines and provides recommendations for leaders, planners, university professors and administrators within the higher education sector in Lebanon. In future work, we are aiming to implement the proposed model to assess service quality in the context of Lebanese higher education. The study aims to provide valuable feedback and recommendations to enhance the overall methodology of service quality assessment in various higher education institutions in Lebanon and subsequently improve the level of Lebanese students' satisfaction. This study represents a step forward in improving the overall status of higher education in Lebanon, aiming to conserve its strong position in the Middle East region within a challenging academic environment.

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