



**Libyan International University
Faculty of Business Administration**



Graduation project

Measuring The Quality of Educational Services In
Libyan International Medical University (LIMU).

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Introduction

- The Service Sector Has Grown Considerably since the 1970s And Services Are Now Playing an Increasingly Important Role in Economy of Many Nations (Abdullah, 2006, p.55).
- Since higher education became a service, whose existing depends on the satisfaction of their clients (students), it is of crucial importance that colleges and universities provide that service with high level of quality. Once the student receives quality higher education, that student will be satisfied and stay loyal, as well as recommend the university to future students.
- The future success of colleges and universities will increasingly be determined by how they identify and satisfy their various customers (Taiwo, 2010, p.210.)

Definitions:

- **Service quality:** service quality is an assessment of how well a delivered service conforms to the client's expectations (ramya, et al., 2019, p.38, 39). In its contemporary conceptualization, is a comparison of the perceived expectations of the service with the perceived performance.
- **Higher education:** higher education is one sense, can be called the tertiary level of education, which is the top of the education pyramid. Higher education may be of general education or non-technical education as well as technical and professional education. Higher education has three (3) levels of degree such as 1st degree of bachelor course, 2nd degree of master course, and 3rd degree of master of philosophy or doctor of philosophy in the Indian context. (Hijam, 2012).
- **Quality measurement:** stanton (1981) defined the services as “those separately identifiable, essentially intangible activities which provide want satisfaction and that is not necessarily tied to the sale of a product or other services” (prasad, 2013, p.23).

- **SERVQUAL:** According to Parasuraman, et al. (1985, 1988, 1991, 1994, p.23), regardless of the type of service, consumers/customers are assessing the quality in the same way. It is a method to capture and measure service quality experienced by the customers/consumers/clients.
- **There are five dimensions measured by the SERVQUAL model:**
 1. Reliability: performing the promised service accurately and dependably.
 2. Tangibility: the appearance of physical facilities, communication technology, equipment.
 3. Responsiveness: willingness to help customers and provide prompt service .
 4. Assurance: the courtesy and knowledge of employees.
 5. Empathy: individualized and caring attention to the customer.



- **LIMU:** Libyan international medical university is a private university that is located in Benghazi city- Libya, the university was established in the year 2007 by a decree that was reached by the ministry of higher education in Libya.
- Libyan international medical university (LIMU) is an academic institute that applies quality management system, adopts strategies of self-directed, lifelong learning, knowledge production, and community service.

Research problem

- There is a worrying lack of papers (articles) on measuring service quality in higher education in Libya. No previous measurements of service quality in Libyan universities (both public and private sector) have been conducted. Therefore, there is no precise information on the level of service quality offered by higher education in Libya. Concluding upon previously said, this current paper would be done after the examples of foreign papers, as well as a contribution to the Libyan educational system.
- This current paper is measuring the service quality offered by LIMU, and student satisfaction, which is sort-of-speak, a milestone for Libyan measurement of service quality in higher education.

Research objectives

- 1.To identify if students at LIMU are satisfied with service quality offered by the university.
- 2.To identify if there are any significant differences among the respondents that could be attributed to demographic information.

Research hypotheses

- H0a: Students at LIMU are not satisfied with service quality offered by the University.
- H1a: Students at LIMU are satisfied with service quality offered by the University.
- H0b: LIMU students are not satisfied with the reliability dimension of service quality.
- H1b: LIMU students are satisfied with the reliability dimension of service quality.
- H0c: LIMU students are not satisfied with the responsiveness dimension of service quality.
- H1c: LIMU students are satisfied with the responsiveness dimension of service quality.
- H0d: LIMU students are not satisfied with the assurance dimension of service quality.
- H1d: LIMU students are satisfied with the assurance dimension of service quality.
- H0e: LIMU students are not satisfied with the empathy dimension of service quality.
- H1e: LIMU students are satisfied with the empathy dimension of service quality.
- H0f: LIMU students are not satisfied with the tangible dimension of service quality.
- H1f: LIMU students are satisfied with the tangible dimension of service quality.
- H0g: There is no significant differences among respondents according to their demographic attributes.
- H1g: There is a significant differences among respondents according to their demographic attributes.

Research importance

- The importance of this paper is best highlighted as an effort of the Ministry of Higher Education and Scientific Research in Libya to deliver higher education, to maintain its development and continuous improvement in the field of higher education.
- The exposure of shortcomings and problems, allows university officials to work to address them and work on their professionalism, thereby increasing the university's efficiency and effectiveness, and increasing the quality of performance.
- This particular research should be helpful when addressing the service quality of higher education in Libya.
- Further, it should improve the state at Libyan International Medical University by knowing its advantages and disadvantages.

Literature review

- In literature review, I have used 20 different papers, which covered the topic of measuring the service quality in higher education.
- 19 of reviewed papers were using SERVQUAL model in their research, except for one, which used LIBQUAL+ model. That model is used to measure service quality offered by university library, furthermore, it is designed upon SERVQUAL model.
- I intentionally used the paper with LIBQUAL+ model to prove the importance of SERVQUAL model, not just in actual measuring of service quality, but as a model upon which other models are developed.

Theoretical framework

- This particular (current) research should be of great help in the field when talking about Libya and it should set up an example for future researches locally. Many local, domestic universities have never measured their service quality or student satisfaction, which is not satisfactory.
- To know where are you heading, you must know where are you standing.
- By measuring the level of service quality offered by LIMU, we will be able to address the existing gaps or problems (if found), therefore improve the university itself, as well as achieve greater satisfaction and loyalty among LIMU students.

Research Methodology

- In order to measure service quality at LIMU, this study was performed in two steps to collect and analyze appropriate data.
- The first step was the extrapolation of relevant and topic-related literature on measuring indicators of quality in educational institutions. The literature review is an important step in this study because it gives us an insight into the importance of service quality in the educational system, as well as shows the level of international attention towards the field of study.
- The second step was a field study in which was prepared a questionnaire made according to the SERVQUAL model of the questionnaire, designed by . Sabri Elkrghli . The students attending Libyan International Medical University were presented with the questionnaire which included questions covering all dimensions of SERVQUAL, The measurement of service quality viewed by students attending LIMU was obtained with SERVQUAL using a 5-point Likers scale: (1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree). (Pimentel, 2010)

Likert's Measurement Scale

Likert-Scale Description	Likert-Scale	Likert Scale interval
Strongly disagree	1	1.00 - 1.80
Disagree	2	1.81 - 2.60
Neutral/Uncertain	3	2.61 - 3.40
Agree	4	3.41 - 4.20
Strongly agree	5	4.21 - 5.00

For the primary analysis, we calculated descriptive statistics (means, standard deviation, and frequencies) for the SPCILS aggregate database. The means were interpreted as follows: Strongly disagree in the point range of 1.00 - 1.80, Disagree 1.81 - 2.60, Neutral 2.61 – 3.40, Agree 3.41 - 4.20, and Strongly agree 4.21 - 5.00 (see Table 3) (Pimentel, 2010).

Determining sample size

Table for Determining Sample Size of a Known Population

N	S	N	S	N	S	N	S	N	S
10	10	100	80	280	162	800	260	2800	338
15	14	110	86	290	165	850	265	3000	341
20	19	120	92	300	169	900	269	3500	346
25	24	130	97	320	175	950	274	4000	351
30	28	140	103	340	181	1000	278	4500	354
35	32	150	108	360	186	1100	285	5000	357
40	36	160	113	380	191	1200	291	6000	361
45	40	170	118	400	196	1300	297	7000	364
50	44	180	123	420	201	1400	302	8000	367
55	48	190	127	440	205	1500	306	9000	368
60	52	200	132	460	210	1600	310	10000	370
65	56	210	136	480	214	1700	313	15000	375
70	59	220	140	500	217	1800	317	20000	377
75	63	230	144	550	226	1900	320	30000	379
80	66	240	148	600	234	2000	322	40000	380
85	70	250	152	650	242	2200	327	50000	381
90	73	260	155	700	248	2400	331	75000	382
95	76	270	159	750	254	2600	335	100000	384

Note: N is Population Size; S is Sample Size

Source: Krejcie & Morgan, 1970

Five Dimension (SERVQUAL)

Dimension	Definition
Reliability	Ability to perform the promised service dependably and accurately.
Assurance	Employees' knowledge and courtesy and their ability to inspire trust and confidence
Tangible	Appearance of physical facilities, equipment, personnel and communication materials.
Empathy	Caring, individualized attention given to customers
Responsiveness	Willingness to help customers and provide prompt service

Source: Zeithmal et al (1990, p.26)

Data collection tool

- The data collection tool used in this research is the SERVQUAL model of the questionnaire.
- The questionnaire was developed and presented to students who are attending Libyan International Medical University in Benghazi, Libya. The survey was shared on social media platforms: Facebook, Twitter, and Snapchat.
- The questionnaire consists of two parts: demographic questions (six questions), and questions that covered the five dimensions of service quality (Twenty-five questions).
- The demographic questions were offered multiple-choice (answer), and in the second part, each of 25 questions was rated on a 5-point Likers scale.

Instrument validity

- The questionnaire is one of the most widely used tools to collect data in especially social science research. The main objective of the questionnaire in research is to obtain relevant information most reliably and validly (Taherdoost, 2016, p.1).
- Questionnaire was sourced by Sabri Elkhargli.
- The SERVQUAL model of the questionnaire has the most validity in measuring service quality offered by institutions of higher education, and, student satisfaction.
- In current research on Libyan International Medical University, measuring service quality offered by LIMU, and student satisfaction of LIMU's students, the SPSS analysis tool tested the validity of the SERVQUAL questionnaire.

Data analysis

- Data analysis was conducted by using SPSS version 25. To analyze the data in the current study, different tools were used, including the reliability test, Cronbach's Alpha, frequencies to see the differences between the participants according to their demographic data, Kolmogorov-Smirnov test, Binominal test, Mann-Whitney test, hypothesis test, and Kruskal-Wallis test.

Instrument reliability

- According to Drost (2011), reliability is “the extent to which measurements are repeatable when different people measure on a different occasion, under different conditions, supposedly with alternative instruments which measure the construct or skill”. It can also be defined as the degree to which the measure of a construct is consistent or dependable. (Kubai, 2019, p. 2).
- The better the reliability is performed, the more accurate the results; which increases the chance of making the correct decision in research. Reliability is a necessary, but not a sufficient condition for the validity of the research. (Mohajan, 2017, p. 11).

Table :- 1 Reliability test

Variables of the study	N of Items	Cronbach's Alpha
Quality service	25	0.949
Tangibility	13	0.911
Reliability	2	0.732
Responsiveness	3	0.271
Assurance	5	0.818
Empathy	2	0.700

- Table:-1 Explains that all the elements of the study are reliable. The reliability value (0.70). The results of data reliability measurement show high reliability: 0.949 (0.95). It is visible that there is a great possibility for achieving an objective (To identify if students at LIMU are satisfied with service quality offered by the university.) in the current paper since the SERVQUAL questionnaire is reliable. According to Table 1. There is a high level of service quality at LIMU.
- Tangibility dimension test result: 0.911 (it is more than 0.70, so, it has high reliability), Reliability dimension test results: 0.732 (satisfactory reliability), Responsiveness dimension test results: 0.271 (low reliability), Assurance dimension test results: 0.818 (0.82) (high reliability), Empathy dimension test results: 0.70 (satisfactory reliability).

Demographic information analysis

- In this section, a discussion of the distribution of the participants according to their demographic data is brought. The first part of the questionnaire covers questions about demographic factors, which include gender, age, location, marital status, and specializes.

Table:-2 Gender

Valid	Frequency	Percent
Female	163	65.2
Male	87	34.8
Total	250	100.0

- Table:-2 shows that the majority of the respondents were female. The sample is female respondents: 65.2% and Male 34.8 % of the sample size.

Table:-3 Nationality

Valid	Frequency	percent
Libyan	240	96.0
Not Libyan	10	4.0
Total	250	100.0

- Table:-3 Shows the nationality of the participants. There are 240 Libyan students, and 10 foreign students. That means, Libyan 96%, and, foreign 4%. This information leads to conclusion that there are more respondents with Libyan nationality.

Table:-4 Age Group

Valid	Frequency	Percent
18-20	82	32.8
20-22	56	22.4
22-24	56	22.4
24-26	44	17.6
More Than 26	12	4.8
Total	250	100.0

- Table:-4 Shows the age of participants. 32.8% were of age between 18 and 20, 22.4% were of age between 20 and 22, 22.4% were of age between 22 and 24, 17.6% were of age between 24 and 26, and, 4.8% were of age over 26 years.
- Therefore, majority of participants were of age between 18 and 20, and minority of participants were of age over 26 years.

Table:-5 Status marital

Valid		Frequency	Percent
	Divorced	3	1.2
	Married	11	4.4
	Single	236	94.4
	Total	250	100.0

- Table:-5 Shows the marital status of participants. 1.2% of participants were divorced, 4.4% were married, and, 94.4% were single. According to these statistics, the majority of participants were single, and minority of participants were divorced.

Table:-6 Location

		Frequency	Percent
Valid	Inside Benghazi	247	98.8
	Outside Benghazi	3	1.2
	Total	250	100.0

- Table:-6 Shows the residence location of participants. There were 98.8% from inside Benghazi, and 1.2% were from outside of Benghazi. Therefore, the majority of participants were from Benghazi.

Table:-7 Specialties

	Frequency	Percent
Valid	Business Administration	56 22.4
	Dentistry	50 20.0
	Information Technology	52 20.8
	Medical Sciences	12 4.8
	Medicine	49 19.6
	Pharmacy	31 12.4
	Total	250 100.0

- Table:-7 Shows the chosen specialization of participants (faculty). 22.4% from business administration, 20.0% from dentistry, 20.8% from information technology, 4.8% from medical sciences, 19.6% from medicine, 12.4 from pharmacy. Therefore, the majority of participants were from faculty of business administration.

Normality test

- The main test for the assessment of the normality are Kolmogorov-Smirnov (K-S). (Ghasemi, 2012, p. 487) This test for normality is actually based on the maximum level of difference between the observed distribution and expected cumulative-normal distribution.

Table:-8 Normality Test

Kolmogorov-Smirnov			
Quality Service	Statistics	Df	Sig.
	.073	250	0.002

- Table:-8 the normality test result show that all variables significant at a value less than 0.05, which means that the data is not normally distributed. Furthermore, the statistical results of this paper is following the non-parametric method.

Descriptive analysis

- This questionnaire aims to investigate the level of quality of service provided by LIMU, and, viewed by students. The questionnaire consists of 25 questions.
- designed according to SERVQUAL model of questionnaire, using five-point Likert scale.
- Five dimensions of service quality (tangibility, reliability, assurance, responsiveness and empathy) are investigated, and students are given crucial questions, whose answers would provide a clear image of LIMU's service quality.

Table:-9 Descriptive statistics

Dimension	Components of each dimension	N	Minimum	Maximum	Mean	Std. Deviation
Tangibility	The university's location is very convenient for students	250	1	5	4.12	1.010
	The university building is of adequate quality	250	1	5	3.48	1.151
	The university space is suitable for students	250	1	5	2.83	1.210
	The university uses advanced technology in the educational process	250	1	5	3.84	1.156
	The university has an excellent online platform	250	1	5	4.03	1.046
	Air conditioning services are available at the university	250	1	5	4.05	1.110

Good ventilation is provided in the university premises	250	1	5	3.62	1.380
The university halls are excellent and suitable for students	250	1	5	3.42	1.204
Class schedules are suitable for students	250	1	5	3.10	1.185
Suitable paper books are available for students	250	1	5	2.94	1.407
Suitable e-books are available for students	250	1	5	3.59	1.314
Student friendly patio spaces available	250	1	5	2.80	1.201
There are restaurants and cafes suitable for students	250	1	5	2.82	1.297

Reliability	The university has distinguished competencies in terms of quality	250	1	5	3.65	1.031
	University staff are highly qualified	250	1	5	3.60	1.100
Responsiveness	The student gets enough interest in the university	250	1	5	3.34	1.229
	The university constantly measures student satisfaction	250	1	5	4.12	1.010
	The student's voice is heard at the university to meet his requests	250	1	5	2.82	1.297

Assurance	The student obtains his rights at the university	250	1	5	3.48	1.151
	The student is treated well at the university	250	1	5	3.66	1.283
	Our university is ready for the environmental conditions and studies have not been disrupted due to Corona	250	1	5	4.12	1.010
	I always advise new students to study at our international university	250	1	5	4.12	1.10
	Our leaders are wise and ambitious	250	1	5	3.43	1.204
Empathy	The university sympathizes with the student according to the circumstances	250	1	5	3.66	1.283
	Feel proud of a student studying at an international university	250	1	5	4.04	1.046
	Valid N (<u>listwise</u>)	250	1.08	4.96	3.55	0.789

- Table:-9 indicates that students who attend LIMU, are mostly satisfied with the service quality offered by the university, the average mean (overall mean) has a result of (3.55), which means that students mostly agree with the statements (questions) provided in questionnaire.
- The main and majority of gaps found in this study were found in the dimension of tangibility: students expressed disagreement with the statements: “The university space is suitable for students” (2.83), “Suitable paper books are available for students.”(2.94), “Student friendly patio spaces available.”(2.80), “There are restaurants and cafes suitable for students.”(2.82),” There are restaurants and cafes suitable for students.”(2.82).
- In conclusion, from this statements, students could appreciate hallways that are more spacious, more paper books, more student friendly spaces, And restaurants more adapted to students.
- Another gap was found in dimension of assurance: “The student's voice is heard at the university to meet his requests.”(2.82). the disagreement with this statement, can be interpreted as a dissatisfaction with the way they are approached by faculty members and with the amount of attention students enjoy from the faculty members.

Hypotheses Testing

- In sum, hypothesis testing comprises comparing internal thoughts to external facts in order to interact with the world. (Poletiek, 2013, p. 1). A statistical hypothesis is an assertion or conjecture concerning one or more populations. To prove that a hypothesis is true, or false, with absolute certainty, we would need absolute knowledge. That is, we would have to examine the entire population. Instead, hypothesis testing concerns on how to use a random sample to judge if it is evidence that supports or not the hypothesis. (Paiva, 2010, p. 2). In process of testing the hypothesis, binomial test was used along Mann-Whitney test.

Table:-10 Binomial Test

		Category	N	Observed Prop.	Test Prop.	
Quality	Group1	<= 3	79	0.32	0.50	0.000
Service	Group2	> 3	171	0.68		
	Total		250	1.00		

- Table:-10 Binomial test results indicate statistical difference that $p < \alpha$ ($0.50 < 0.68$), this leads to accepting the H1a: Students at LIMU are satisfied with service quality offered by the University. Moreover, rejecting the hypothesis H0a: "Students at LIMU are not satisfied with service quality offered by the University."

Table:-11 Mann-Whitney U test

Quality services	Gender	N	Mean Rank	Sum of Ranks	Aysmp Sig (2-tailed)
	Female	163	123.40	20113.50	0.948
	Male	87	129.44	11261.50	
	Total	250			

- The Mann-Whitney test is a test of both location and shape. Given two independent samples, it tests whether one variable tends to have values higher than the other does. (Hart, 2001, p. NF).
- If the sig. is more than 0.05, accept the null hypothesis and reject the alternative hypothesis.
- Table:-11 by showing sig. 0.948, indicates that H0g: “There is no significant difference among the respondents according to their demographic attributes.” is to be accepted, and the hypothesis H1g: “There is a significant difference among the respondents according to their demographic attributes.” is to be rejected.

H0g: “There is no significant difference among the respondents according to their demographic attributes.”	Accept
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H1g: “There is a significant difference among the respondents according to their demographic attributes.”	Reject
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Kruskal - Wallis test

- The Kruskal-Wallis test does not make assumptions about normality. However, it assumes that the observations in each group come from populations with the same shape of distribution and that the samples are random and independent. The test statistic for one-way analysis of variance is calculated as the ratio of the treatment sum of squares to the residual sum of squares. The Kruskal-Wallis test uses the same method but, as with many nonparametric tests, the ranks of the data are used in place of the raw data.(Ostertagova, 2014, p. 115).

Table :-12 Kruskal-Wallis test

	Social status	N	Mean Rank
Quality Service	Divorced	3	55.17
	Married	11	116.50
	Single	236	126.81
	Total	250	

- Table :-12 indicates that single participants were the most satisfied with the service quality offered by LIMU, and divorced participants were the least satisfied, according to the mean rank. In total, of 250 participants, 3 were divorced, 11 were married and 236 were single.

Table:- 13 Kruskal-Wallis test

	specialties	N	Mean Rank
Quality service	Business administration	56	141.70
	Dentistry	50	127.42
	Information technology	52	119.95
	Medical science	12	138.46
	Medicine	49	108.59
	Pharmacy	31	124.16
	total	250	

- Table:-13 clearly indicates that participants from faculty of Medicine are the least satisfied, and participants from faculty of Business administration are the most satisfied.

Results:

- high reliability of SERVQUAL questionnaire: 0.949 (0.95),
 - Results of reliability tests for five dimensions:
 - tangibility resulted with mean of 0.911.
 - reliability resulted with mean of 0.732.
 - responsiveness resulted with mean of 0.271.
 - assurance resulted with the mean of 0.818.
 - empathy resulted with the mean of 0.700.
- most of the respondents (163 respondents), were female, while minority were male respondents (87 respondents).
- 98.8 % (247respondents) from inside Benghazi, and 1.2 % (3respondents) were from outside of Benghazi.
- 32.8%(82 participants) were of age between 18 and 20, 22.4%(56 participants) were of age between 20 and 22, 22.4%(56 participants) were of age between 22 and 24, 17.6%(34 participants) were of age between 24 and 26, and, 4.8%(12 participants) were of age over 26 years.
- 1.2 %(3 participants) of participants were divorced, 4.4 %(11 participants) were married, and, 94.4 %(236 participants) were single

- 240 Libyan students, and 10 foreign students.
- accepts the hypothesis H0g: “There is no significant difference among the respondents according to their demographic attributes.”,
- main gap was found in tangibility: students expressed disagreement with the statements:
 - “The university space is suitable for students” (2.83),
 - “Suitable paper books are available for students.”(2.94).
 - “Student friendly patio spaces available.”(2.80).
 - “There are restaurants and cafes suitable for students.”(2.82).

limitations

- The main limitation was limited number of respondents: a greater number was expected.
- There is also a possibility that some of respondents were not truthful, and that they presented incorrect answers
- Future research at LIMU should include and question not just the students, but also the faculty members, university management members and other staff members (maintaining workers, cafeteria workers, security workers, etc.). It would be a significant improvement in service quality research, if, the reputation of the university would be measured among the civilians. By including the faculty members and other staff into questioning, and by capturing the LIMU's reputation among civilians, both those who are of age or interests to study, and those who are of no intention to study, but care about the youth's future in Libya.
- Finally, a comparison between the scores in service quality gaps both in public and private higher educational institutions should be investigated.

Recommendation and Implications

- Higher education in general has grown rapidly over last few decades.
- By enlarged demand for higher education degree, demand for quality in service offered by higher education institutions has grown also.
- Both public and private sector are covered evenly when demanding quality service.
- Currently, in Libya is existing lack of articles on service quality in higher education in general, especially the measurement of service quality at any of public or private universities in Libya.
- Current study is a pioneer in Libyan service quality measurements in higher education, and a milestone for future researches and development.
- it is necessary that other (all) Libyan universities measure their service quality and student satisfaction in order to achieve the respect for Libyan higher education system, both domestically and internationally.