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Using Service Quality to Measure the Satisfaction of Architecture Students at Private Jordanian Universities

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Abstract
In order to gauge student satisfaction, this study examined academic and non-academic aspects of service quality in architecture colleges at eight private Jordanian universities during the 2014–2015 academic years. Eight volunteers randomly distributed questionnaires to undergraduate students; 733 valid and completed questionnaires were returned. The study used the software Statistical Package for the Social Sciences (SPSS) Version 17.0 to examine the data; it then employed descriptive statistics, a T-test, and regression analysis to interpret the results. It was discovered that quality is a key component of any education system, and service quality and student satisfaction were found to be "medium." In terms of student satisfaction, executing different dimensions of service quality had a positive impact at a significant level ($p \leq .05$). The study recommends that all areas covered in the questionnaire be improved.

Keywords: Quality, Academic and Non-Academic Services, Student Satisfaction, Private, Universities, Jordan.

1. Introduction

Jordan's higher education sector is growing rapidly as the country becomes increasingly exposed to globalization. To keep pace with the change and cope with the intense competition between local and regional universities, Jordanian centers of higher learning are seeking to apply modern concepts to develop their services and outcomes (Ministry of Higher Education and Scientific Research, or MOHE, 2015). Jordan's universities stress the importance of applying contemporary educational theories, especially regarding student satisfaction and the quality of both academic and non-academic services (Mufti, 2012). MOHE stresses that service quality in higher education is critical, and states that modernizing higher education depends on how the diverse elements of quality are put into action. Student satisfaction comprises the difference between the expectation and reality of a function.

Quality has become a basic requirement to improve and expand higher education; there is a need for more students in Jordan's universities (Rubaish, 2011). Achieving the various components of quality helps universities invest their available resources to reach a competitive position, thereby upgrading the education process and enhancing student satisfaction (Faganel, 2010).

Jordan is regarded as one of the most stable countries in the Middle East. Real estate and construction comprise one of its most active economic sectors (Global Investment House, 2015), and accounted for 4.5% of GDP in 2014 (Bank Audi, 2015). Due to such financial success, eight private universities in Jordan have established colleges that grant bachelor's degrees in architecture.

Depending on the role of architecture colleges in fulfilling student satisfaction, as well as preparing high-achieving graduates for the construction sector, to make valuable contributions to society, and to develop the economy, architecture colleges must consider how to carry out the different dimensions of quality, because doing so is a fundamental aspect of a high-caliber education system.

As Deming (1994) observed, not only can the concept of service quality be used in manufacturing, it can also be applied to education and other areas. Educational institutions have several main internal and external stakeholders, the students being the most important (Jr, Kara, & Kaynak, 2005; Khan, Ahmed & Nawaz, 2011). Student perception is a major factor in improving quality of education (Katiliūtė & Kazlauskienė, 2010). In recent years, interest in the phenomenon of student satisfaction has increased (Kuo & Ye, 2009). One of the biggest problems for universities that have not met their students' requirements is that dissatisfaction negatively impacts the relationship between the institution and the students (Gocek & Beceren, 2012).

1.1 Study Objectives

The study demonstrated this problem by asking students the following questions:

First Question: *What is the level of implementation of service quality (for academic and non-academic services) in your university's architecture college?*

Second Question: *What is the level of student satisfaction in your university's architecture college?*

Third Question: *Has implementing service quality affected student satisfaction at your university's architecture college?*

1.1.2 Quality of Educational Services

Service quality is a vital factor in the success of institutions because it affects their survival, cost, profitability, and clients' contentment. Nowadays, quality is one of the most critical issues (Daunorienė, 2011) at all universities. However, there is still no consensus on how to define service quality in higher education. It can be defined as the right thing at the right time in the right place, continually improving services, and competence (Tyagi & Kumar, 2011).

To ensure good educational programs, universities need to consider national goals and market needs. They should also provide adequate buildings, suitable technical systems, human resources skills, appropriate syllabi, and opportunities for social development (Hans, 2013). Strong competition in international higher education has pushed the heads of institutions to pay attention to the different elements of quality, and to carefully consider how students assess the quality of services. Evaluating service quality helps people differentiate among universities (Lombardo & Passarelli, 2011).

It is possible to improve service quality in centers for higher learning in two key areas.

Quality of Academic Services: Colleges must have processes in place to ensure that all academic services have high standards. In this context, aspects of good quality include establishing majors required by the labor market; clear goals of the institution's programs (MOHE, 2015); capable, efficient staff to teach students knowledge and skills; adequate communication with students; and appropriate academic guidance (Accreditation of Higher Education Institutions, 2011). Components of high quality also include opportunities for students to discuss difficulties with learning material with professors; conversion courses; a suitable process for assessing student performance; and ongoing improvement of the entire system (Brochado & Marques, 2007).

Quality of Non-Academic Services: Even though a college's primary function is to provide education, the retention of students and staff depends on enhancing services in a way that satisfies all stakeholders. Non-academic services depend on: the availability of highly efficient, non-academic staff (Khatib & Khatib, 2012); the speed of service delivery; the necessary and clean facilities to help students complete the education process; adequate sports; an efficient university website; good transportation access to the university; and health services (Accreditation of Higher Education Institutions, 2011).

1.1.3 Evaluating the Quality of Educational Services

The attention necessary for assessing service quality in education has been compared to many other kinds of services. Given this context, and to evaluate the quality of educational services, this study has reviewed a number of tools proven to measure service quality, such as SERVQUAL. SERVQUAL is a quality management framework that involves a series of integrated, interrelated dimensions. The outcomes of this tool depend on the gap between the client's expectations and the client's perception of how services are optimized. The size of this gap is determined by the client's level of awareness of the service quality; a smaller gap indicates that the client perceives service quality as higher (Parasuraman, Zeithaml, & Berry, 1988).

Cronin and Taylor (1992) introduced another tool called SERVPERF, another quality management framework that measures quality based on how customers view the actual performance of services. Abdullah (2006) invented another successful scale called "Higher Education Performance Only" (HEdPERF), which determines the true dimensions of service quality in the higher education sector. Many scholars agree on this measure of service quality, and researchers have used it widely in previous studies (Saif, Sartawi, & Al-Aqra, 2014; Saif, 2014). Considering the aforementioned information, this study used HEdPERF to suit the specificities of Jordan's universities; however, the study modified the formulation of some paragraphs.

1.1.4 Student Satisfaction

The quality of university services is an important factor in determining student satisfaction; the higher the quality, the more content students are. Quality reflects the degree of effectiveness with which institutions provide products or services that meet students' expectations and needs. It also encompasses students' needs and expectations in relation to educational programs and various environmental factors of the campus (Kantek & Kazanci, 2012). It is one of the important criteria that help universities ensure the quality of their goods and services (Saif, Sartawi, & Al-Aqra, 2014).

Student satisfaction has become vital in helping universities move toward development and excellence; universities must listen to students to improve the worth and quality of student services (Shauchenka & Eugenia, 2010). This has prompted many governments around the world to issue annual reports on student satisfaction levels for institutions of higher education.

2. Methods

This study was designed to be descriptive and qualitative. The target population consisted of undergraduate students in architecture colleges at eight private Jordanian universities for the 2014–2015 academic years. The study was carried out from October 2014 to May 2015. The study used a questionnaire to gather primary data, which contained a five-point Likert scale. The highest score (5) indicated a higher level of implementation of service quality, while the lowest score (1) signaled low implementation. First year students were excluded because they did not have enough experience to provide answers.

Eight volunteers distributed the questionnaire in a design lecture attended by all architecture students; the survey was provided in several rounds to ensure a comprehensive sample. Before it was handed out, permission was received from the professors that gave the lectures. Students were asked not to write their names on the questionnaire. The volunteers encouraged them to participate by explaining the importance of the study and its impact on student achievement and satisfaction. The questionnaires were collected right after the students had completed them.

The survey had three sections. The first contained questions related to students' characteristics. The second part had 16 questions for students to assess the execution of academic quality, and 17 questions to explore the implementation of non-academic elements (i.e., the independent variables). The third section contained four questions to measure student satisfaction as a dependent variable.

To interpret the data, the study employed the software Statistical Package for the Social Sciences (SPSS) Version 17.0 for Windows (SPSS Inc., Chicago, IL, USA). Cronbach's alpha was also used to assess reliability, mean, and standard deviation to gauge the level of implementation for the dependent and independent variables, skewness and kurtosis to measure the normality distribution, a T-test, and multiple regression analysis to demonstrate the impact of the independent variables on the dependent variables. In the statistical significance testing, $p \leq .05$ was accepted as statistically significant. A total of 1,654 students took part in the study, for a participation rate of 44%; 733 valid surveys were collected.

3. Results

The results show that the study sample was 66.8% male (n=516), and consisted of students in their third and fourth years (n=504, 65.2%). The students were 82.8% Jordanian (n=640).

First Question: *What is the level of implementation of service quality (for academic and non-academic services) in your university's architecture college?*

Table 1 summarizes the findings regarding the implementation of academic elements (m=3.48). It shows that the mean value for all items was 3.71–3.06, which reveals a medium level. Students who indicated a medium level said they communicate with faculty (m=3.71), acquire targeted knowledge (m=3.66), have opportunities to discuss subject matter during lectures (m=3.66), and that the school provides a range of disciplines to study (m=3.62). Students assigned medium levels to clear course goals (m=3.59), clear study plans (m=3.59), assistance for students to help them understand difficult issues (m=3.56), acquiring targeted skills (m=3.54), providing students with adequate sources of knowledge (m=3.51), responding to students' needs (m=3.48), and opportunities to measure student performance (m=3.46). The respondents assigned a medium level to the categories of having enough time to receive advice from professors (m=3.46), benefitting from outside experts who visit classes (m=3.42), the availability of academic experience (m=3.25), courses adequate for practical applications (m=3.25), and preparing students for the labor market (m=3.06).

Table 1: Academic dimensions of quality in architecture colleges at private Jordanian universities

No.	Items	Rank	Mean	SD	T	Sig.
1	The university has a clear, modern study plan	6	3.59	1.10	90.58	.000*
2	The course goals are clear	5	3.59	.95	104.05	.000*
3	The university offers enough academic and educational experience	14	3.25	1.10	81.74	.000*
4	The university offers a variety of academic disciplines that fit students' needs	4	3.62	.96	104.50	.000*
5	The faculty provide enough time to offer students guidance	12	3.46	1.11	86.21	.000*
6	Faculty respond to students' comments and needs	10	3.48	1.09	88.20	.000*
7	There is ongoing contact between faculty and students	1	3.71	1.05	1.05	.000*
8	The faculty provide opportunities to discuss subject matter during lectures	3	3.66	1.02	99.72	.000*
9	The courses have practical applications	15	3.25	1.11	81.17	.000*
10	I can usually find people who will help me understand difficult course material	7	3.56	1.12	65.36	.000*
11	The faculty invite experts from the market to class so students can benefit from their practical experience	13	3.42	1.06	89.58	.000*
12	At the end of a course, students acquire the targeted knowledge	2	3.66	.92	109.86	.000*
13	At the end of a course, students acquire the targeted skills	8	3.54	.97	100.73	.000*
14	The university prepares students to handle the labor market after they graduate	16	3.06	1.21	69.84	.000*
15	There are clear tools to measure student performance at the university	11	3.46	1.02	93.79	.000*
16	The university provides adequate sources of knowledge during courses	9	3.51	1.11	87.99	.000*
All items			3.48	.66	145.6	.000*

* The mean is significantly greater than the hypothesized value of 3

Table 2 summarizes the findings regarding non-academic dimensions of quality (m=3.22). It shows that there are high levels in terms of an appropriate university website (m=3.92) and a safe and secure university environment (m=3.81). Students ranked most items at the medium level, including convenient buildings (m=3.78), respect and equity between students and staff (m=3.62), recreational facilities (m=3.58), appropriate lecture rooms (m=3.45), and these rooms' environments (m=3.24). In addition, the participants deemed the following to be of a medium level: the university supports the local community (m=3.21), adequate educational equipment (m=3.14), health services (m=3.12), laboratories (m=3.11), good transportation access to the university (m=3.02), staff help students even when the staff members have a high workload (m=2.92), low financial burden on students (m=2.88), and appropriate responses to students' complaints (m=2.84). Students ranked quality as low in terms of the administration's support for students (m=2.64), in addition to the staff's ability to communicate with parents (m=2.50).

Table 2: Non-academic dimensions of quality in architecture colleges at private Jordanian universities

No.	Items	Rank	Mean	SD	T	Sig.
17	The university's administration is interested in meeting students' needs	16	2.64	1.17	61.95	.000*
18	Employees respond to students' needs, despite pressure and a high workload	13	2.92	1.11	71.90	.000*
19	The style and design of campus buildings fit with their functions	3	3.78	1.08	97.30	.000*
20	Lecture rooms are suitable for teaching	6	3.45	1.09	86.55	.000*
21	Appropriate teaching equipment in lecture rooms	9	3.14	1.17	74.41	.000*
22	Lecture room environment is suitable for teaching	7	3.24	1.18	76.20	.000*
23	The university has adequate laboratories	11	3.11	1.03	73.82	.000*
24	It is easy to get to the university given the availability of public transport	12	3.02	1.17	61.77	.000*
25	We feel safe and secure at the university	2	3.81	1.16	102.6	.000*
26	The university provides students with adequate health services	10	3.12	1.01	73.82	.000*
27	The university website meets every type of student need	1	3.92	1.09	93.42	.000*
28	The university always tries to support its community	8	3.21	1.01	87.77	.000*
29	The university provides adequate ways for	17	2.50	1.19	53.67	.000*

	staff to communicate with parents					
30	The university provides students with adequate recreational facilities	5	3.58	1.08	89.35	.000*
31	The university seeks to ease students' financial burden	14	2.88	1.17	64.20	.000*
32	There is equity and respect between students and staff	4	3.62	1.07	90.28	.000*
33	There is an appropriate response to students' complaints	15	2.84	1.12	70.30	.000*
All items			3.22	.66	135.7	.000*

* The mean is significantly greater than the hypothesized value of 3

Second Question: *What is the level of student satisfaction in your university's architecture college?*

Table 3 displays the findings on student satisfaction. The results indicated that students have a medium level of satisfaction (m=3.31) based on their classification of their universities as one of the best (m=3.40), their contentment with university services (m=3.33), spending happy times at the university (m=3.27), and encouraging others to attend the university (m=3.23).

Table 3: Student satisfaction at architecture colleges at private Jordanian universities

No.	Items	Rank	Mean	SD	T	Sig.
1	I think my university is the best of all universities	1	3.40	1.03	91.11	.000*
2	I am happy with the services at my university	3	3.27	1.05	85.98	.000*
3	I am satisfied with the services provided by my university	2	3.33	1.07	86.21	.000*
4	Would you recommend that others attend this university?	4	3.23	1.20	69.73	.000*
All items			3.31	.89	102.8	.000*

* The mean is significantly greater than the hypothesized value of 3

Third Question: *Has implementing service quality affected student satisfaction at your university's architecture college?*

For the third question, the study developed three hypotheses as shown in Table 5; regression analysis was used to test them. Using multiple regression analysis for the normality data, Table 4 illustrates skewness and kurtosis values, which show the data's normal distribution.

Table 4: Skewness and kurtosis values

Dimension	Kurtosis	Skewness	α
Student satisfaction	-.33	.304	.81
Applying academic dimensions of quality	-.013	.334	.84
Applying non-academic dimensions of quality	-.010	.047	.87

As noted in Table 5, the results of the regression models show that the F-ratio is significant at $p \leq .05$ (The F-ratio is H1=948.6, H1:1= 664.8, and H1:2=768.8). We can conclude that the

regression models predict student satisfaction considerably well. In other words, applying the non-academic aspects of quality as independent variables can predict student satisfaction in the form of dependent variables. In addition, Table 5 shows that R^2 is equal to H1=.552, H1:1=.463, and H1:2=.499, respectively, indicating that all elements of quality made up 55% of student satisfaction, while academic dimensions represented 46%, and non-academic aspects represented 50%, with a possible error of $\leq .05$. Thus, the results have to accept the hypotheses. More specifically, the results showed a strongly significant, positive relationship between the various features of service quality (both academic and non-academic) and student satisfaction (whereby R=.743, .680, and .707, respectively).

Table 5: Summary of the hypotheses and their results

#	Hypotheses	r	R^2	t	Beta	F	Sig.
H1	Applying all dimensions of quality will positively impact student satisfaction	.743	.552	30.80	1.07	948.6	.000
H1:1	Applying the academic dimensions of quality will positively impact student satisfaction	.680	.463	25.78	.680	664.8	.000
H1:2	Applying the non-academic dimensions of quality will positively impact student satisfaction	.707	.499	27.72	.958	768.8	.000

4. Discussion and Conclusion

Education is fundamental to any country's development. Of all of Jordan's social sectors, education raises the most concern. Applying the various aspects of quality in higher education and basic needs has been taken for granted worldwide in general and in Jordan in particular. This issue is also consistent with Faruq and Taylor (2011), who stated that the quality of education is important, with greater benefits in developing countries. In recent years, architecture has become one of the most important economic sectors in Jordan due to the country's construction boom; it presents an investment opportunity, which must be carefully considered in order to develop higher education for those working in this sector. Accordingly, Jordan's architecture colleges seek to apply the diverse elements of quality in education to enhance student satisfaction, which is a key factor for these colleges' survival and continuation.

This study explored student expectations and identified elements of quality in higher education. The findings can be used to monitor the performance of architecture colleges at Jordanian universities. These results are consistent with Kantek and Kazanci (2012), who stressed the importance of applying the various dimensions of quality to develop education. The standard of higher education in architecture colleges depends on both academic aspects (such as expert faculty, delivering the required knowledge and plans to modernize skills, clear course goals, easy access to educational materials, responding to student needs, and preparing students for the labor market) as well as non-academic factors (such as an appropriate university website, effective health and recreational services, adequate lecture rooms and laboratories, and easing students' financial burden).

These outcomes are in line with Kwek, Lau and Tan (2010), who found that providing academic and non-academic features of quality was positively linked with students' perception of service quality. In this study, the students rated the execution of all aspects of service quality as moderate. This result is consistent with Saif (2014), who traced the implementation of all elements of service quality in health management colleges, and found it to be moderate. Like the scholars previously mentioned, the study found student satisfaction

to be moderate. This is in line with Saif, Sartawi, and Al-Aqra (2014), who discovered student satisfaction to be of a medium level at Jordanian universities.

Overall, the study found that implementing all dimensions of quality had a positive, significant impact on student satisfaction. This begs the question: in response to new variables of intense competition, can Jordanian universities keep up with the needs of the labor market if they strive to achieve a high standard by paying attention to all dimensions of service quality, as well as by providing the necessary infrastructure to ensure procedural quality management? The study concluded that better execution of service quality plays an essential role in modernizing education, and has helped raise the level of student satisfaction at Jordan's architecture colleges. The study's findings suggest that in order to improve service quality (for both academic and non-academic services), it is important to ensure the ongoing improvement of the educational process and student satisfaction, with more of a focus on the administration and the staff's ability to communicate with parents.

This study has several limitations. It is based on qualitative methods and was carried out at a specific point in time; thus, the findings cannot explain the in-depth causality of the students' overall perception of service quality. The data came from students at private universities; hence, it is not possible to generalize across all of Jordan's architecture colleges. Due to the study's limitations, it is suggested that quantitative research be conducted on the impact of service quality and student satisfaction. Future studies should take into account students' views of quality in both the public and private sectors.

References

[1] F. Abdullah, The development of HEdPERF: A new measuring instrument of service quality for the higher education sector, *International Journal of Consumer Studies*, 30(6) (2006), 569-581.

[2] Accreditation of Higher Education Institutions, *Accreditation Standards*, (2011), Amman: Ministry of Higher Education.

[3] Bank Audi, *Jordan Economic Report*, (2015), Amman: Bank Audi.

[4] A. Brochado and R. Marques, *Comparing Alternative Instruments to Measure Service Quality in Higher Education*, (2007), Centre for Urban and Regional Systems, Lisbon: Technical University of Lisbon.

[5] J. Cronin and S. Taylor, Measuring service quality: Reexamination and extension, *Journal of Marketing*, 56(3) (1992), 22-68.

[6] A. Daunorienė, Measuring costs of quality in higher education, *Economics and Management*, 16(2011), 717-722.

[7] W. Deming, *The New Economics for Industry, Government, Education (Second Edition)*, (1994), USA: Massachusetts Institute of Technology.

[8] A. Faganel, Quality perception gap inside the higher education institution, *International Journal of Academic Research*, 2(1) (2010), 213-215.

[9] H. Faruq and A. Taylor, Quality of education, economic performance and institutional environment, *International Advances in Economic Research*, 17(2011), 224-235.

[10] Global Investment House, *Jordan Real Estate Sector*, (2015), Amman: Global Investment House.

[11] I. Gocek and Y. Beceren, Assessment of the effects of store image, perceived risk and customer relations on customer satisfaction in the textile industry, *International Journal of Business and Social Science*, 3(9) (2012), 133-145.

[12] K. Hans, *Comparative Analysis of Accreditation Systems in Management Education in India*, (2013), India: Welingkar Institute of Management.

[13] O. Jr, A. Kara and E. Kaynak, Determinants of business student satisfaction and retention in higher education: Applying Herzberg's two-factor theory, *International Journal of Education*, 19(2) (2005), 128-139.
[14] F. Kantek and G. Kazanci, An analysis of the satisfaction levels of nursing and midwifery students in a health college in Turkey, *Contemporary Nurse*, 4(1) (2012), 36-44.
[15] E. Katiliūtė and I. Kazlauskienė, The model of quality study dimensions based on students' perceptions, *Economics and Management*, 15(2010), 580-585.
[16] M. Khan, I. Ahmed and M. Nawaz, Students' perspectives of service quality in higher learning institutions: An evidence-based approach, *International Journal of Business and Social Science*, 2(11) (2011), 159-164.
[17] A. Khatib and R. Khatib, *Accreditation and Quality Assurance in Arab Universities*, (2012), Jordan: World of Modern Books.
[18] Y.K. Kuo and K.D. Ye, The causal relationship between service quality, corporate image and adults' learning satisfaction and loyalty: A study of professional training programmes in a Taiwanese vocational institute, *Total Quality Management*, 20(7) (2009), 749-762.
[19] C. Kwek, T. Lau and H. Tan, Education quality process model and its influence on students' perceived service quality, *International Journal of Business and Management*, 5(8) (2010), 154-165.
[20] R. Lombardo and G. Passarelli, Graduates' job quality after a higher education reform: Evidence regarding second level graduates from a university in Southern Italy, *Research in Applied Economics*, 3(2) (2011), 1-19.
[21] Ministry of Higher Education and Scientific Research, *Higher Education Sector in Jordan*, (2015), Retrieved September (2015), from http://www.mohe.gov.jo/en/pages/Suggestions.aspx.
[22] A. Mufti, Effective schools and the quality of the educational process, *Journal of Research and Studies on the Quality of Education*, 1(2012), 25-34.
[23] A. Parasuraman, A. Zeithaml and L. Berry, SERVQUAL: A multiple-item scale for measuring consumer perceptions of service quality, *Journal of Retailing*, 64(1) (1988), 12-37.
[24] A. Rubaish, The usefulness of global student rating items under end program evaluation surveys in quality improvements: An institutional experience in higher education, Saudi Arabia, *iBusiness Journal*, 3(2011), 353-358.
[25] N. Saif, The effect of service quality on student satisfaction: A field study for health services administration students, *International Journal of Humanities and Social Science*, 4(8) (2014), 172-181.
[26] N. Saif, K. Sartawi and S. Al-Aqra, Quality of services and student satisfaction at Jordanian Universities, *Arabic Journal to Ensure the Quality of University Education*, 23(2014), 23-38.
[27] H. Shauchenka and B. Eugenia, Methods and tools for higher education service quality assessment, *Zeszyty Naukowe Politechniki Białostockiej (Informatyka)*, 5(2010), 87-102.
[28] The Ministry of Higher Education, *Accreditation and Quality Assurance Guide*, (2005), Arab Republic of Egypt: Quality Assurance & Accreditation Project.
[29] G. Tyagi and P. Kumar, Implementing total quality management in professional educational institutes in India, *Advances in Management*, 4(4) (2011), 18-22.