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Quality assessment in Greek Tertiary Education using Gap Analysis

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Abstract

The study focuses on the gaps between students' expectations and perceptions as they relate to SERVQUAL dimensions. More specifically it focuses on Gap 5 that is the perception gap in Gap Analysis. The instrument, which intended to measure students' satisfaction regarding their studies quality, is SEVQUAL consists of five dimensions named Tangibles, Reliability, Responsiveness, Assurance and Empathy and 25 attributes.

The sample comprised of 202 interviewees from the department of Business administration in the University of Macedonia, of whom 127 were males and 75 were females. The results reveal a negative gap for all 25 attributes. Attribute referring to whether teaching materials are available and up-to-date (study programs, brochures, student guides, etc.) has the highest gap which is statistically significant. The results made known a negative gap for all five dimensions of SEVQUAL instrument. Among the dimensions, the highest gap was for Empathy, and the lowest was for Assurance. Additionally there was no significant relations between the gender and students' perceptions as well as students' expectations.

1. Theoretical Framework

It is a recognized element that tertiary education shows a significant starring role in attaining economic growth. In the existing coronavirus economic period towards acquaintance financial prudence, the starring role of higher education is given an important attention. Đonlagić and Fazlić (2015) claimed that it is the society demand Universities and higher institutions to provide skilled knowledge workers regarding their skills connected with technical, managerial, professional context (Anastasiadou & Zirinoglou, 2015a; Anastasiadou & Zirinoglou, 2015b; Anastasiadou 2015; Anastasiadou & Zirinolou, 2014a; Taraza, & Anastasiadou, 2019a;. Anastasiadou, & Taraza, 2019a).

Consequently, there is a strong demand for quality in education. It is now common knowledge that the assessment of the service quality in tertiary education is possible to be accountable for a vital impact and contributions which will be valuable for management and workforce to endure improving the quality of education (Al-Alak & Alnaster, 2012). Many studies have been carried out connected with quality of education (Taraza & Anastasiadou, 2019a; Taraza & Anastasiadou, 2019b; Taraza & Anastasiadou, 2019c; Papadaki, & Anastasiadou, 2019; Papadaki & Anastasiadou, S. 2020). Many of relatives' studies were based on EFQM Model or MBVQA Model to assess quality in education (Anastasiadou & Zirinoglou, 2015b; Anastasiadou, 2018c; Anastasiadou & Taraza, 2019b; Anastasiadou & Taraza, 2019c) while others assess quality in education based on SERVQUAL model (Đonlagić & Fazlić, 2015; Anastasiadou et al., 2016b), others assess quality in education based on Six Sigma methodology (Anastasiadou, & Taraza, 2020a), others connect emotional intelligence with perceptions and expectations regarding quality (Anastasiadou, 2019), and finally others viewed resistance to change parameter as an obstacle regarding quality (Anastasiadou, & Taraza, 2020b).

In addition Sohrabi and Majid (2014) claimed that assessing service quality plays an important part in its management and improvement. Their study proved that all dimensions of educational service such as assurance, reliability, accountability, empathy and tangibility had a negative quality gap. This gap indicated that students; expectations were beyond students; perceptions. These results were in a line with Anastasiadou et al. (2016b), Anastasiadis (2016) and Legcevic (2010).

Parasuraman et al. (1988) defined perceived quality as "global judgment or approach to the superiority of the service". Zeithaml et al. (1996) declared that perceived service quality can be portrayed as the customers' outlook of a service that leads to their satisfaction and future buying intentions. Jiang and Rosenbloom (2005) suggest that in the era of technology, where one can perform purchases and other transactions with a click of a button, service quality constitutes a competitive advantage for businesses and organizations.

Eshghi et al. (2008) argued that service quality has been defined as the overall appraisal of a service by customers. Furthermore, Culiberg and Rojsck (2010) proposed that service quality should be correlated with customers' preferences. It is calculated as the difference between perceived/expected service and the service actually rendered

(Parasuraman et al., 1985). Parasuraman et al. (1988) designated perceived quality to be the "global judgment or attitude with respect to the service's superiority''.

Zeithaml (1988), Zeithalm et al. (1996) and Zeithaml et al. (2000) suggest that the perceived quality of a service can be described as the prospect of a service's customers leads to their satisfaction and guides their future purchase intentions.

Parasuraman et al. (1985), Parasuraman, et al. (1988) and Parasuraman, et al. (2005) referred SERVQUAL model as the gap model, According to this model Service Quality (Q) = Expectations (E) – Perceptions (P) as Đonlagić and Fazlić (2015) claimed.

Parasuraman et al. (1985) have identified five distinct gaps between customers' expectations and perceptions:

(Gap 1). Gap 1 is the positioning gap. The positioning gap is referring the Managers' perception of Customer expectation. The knowledge gap referring to the difference between what customers expect of a service and what management perceives that customers expect (Musaba et al., 2014). Mohammand and Moghadam, (2016) argued that management might has wrong perception of customers' actual perception. In addition they pointed out that this gap has its roots to the lack of focus on customer or the market (Mohammand and Moghadam, 2016);

(Gap 2). Gap 2 is the specification gap. It is also refering as the gap connected with service quality Specifications/ Features (Gap 2). The standards gap referring to the difference between what management perceives that customers expect and the quality and specifications set for service delivery (Papadaki & Anastasiadou, 2019; Musaba et al., 2014). Mohammand and Moghadam, (2016) argued that the organization might has inability to translate customers' expectations into service specifications/ features. This gap is connected with the aspects of service design (Mohammand and Moghadam, 2016);

(Gap 3). Gap 3 is the delivery gap (Yousapronpaiboon, 2014). The delivery gap, referring to the difference between the quality specifications set for a service delivery and the actual quality of service delivery.

(Gap 4). Gap 4 is the communication gap (Yousapronpaiboon, 2014). The communications gap which refers to the difference between the actual quality of service delivered and the quality of service described in the firm's external communications, such as brochures and mass media advertising (Musaba et al., 2014; Yousapronpaiboon, 2014). Regarding Khodayari & Khodayari (2011) the communication belong to actual service delivery and external communications about the service.

(Gap 5). Gap 5 is the perception gap (Yousapronpaiboon, 2014). The service gap which summarizes all the other gaps and describes the difference between customers' expectations and their perceptions of the service they receive (Musaba et al., 2014; Yousapronpaiboon, 2014, Zeithaml, et al., 1990). Gap 5 between the expected and the perceived service is considered to be the most significant one (Zeithaml et al.1990). Many researchers focused on perception gap (Gap 5) (Alijanzadeh et al., 2018; Anastasiadis, & Christoforidis, 2019; Anastasiadou, & Papadaki, 2019; Anastasiadou, 2018d; Anastasiadou, et al., 2016a; Yousapronpaiboon, 2014).

For example according to Yousapronpaiboon (2014) in order the institutions to improve the service delivery it is necessary to upgrade facilities and equipment aiming to decrease the gap between undergraduate students' perceptions and expectations.

In addition Alijanzadeh et al. (2018) claimed that there are significant gaps in the educational service quality relating to accountability and assurance. They claimed that more attention from policymakers probably could led to educational service quality improvement. Furthermore one of the best conceptual models for measuring students' satisfaction is the SERVQUAL model (Lupo, 2013) while quality assurance in education is related to the Effectiveness of Transformational School Leadership (Anastasiadou & Anastasiadis, 2019).

2. The purpose of the study

The main aim of this paper is to investigate the inter-relationships of major constructs related to students' satisfaction regarding Greek tertiary education services. The aim of the paper is to assess the service quality offered by the Greek higher educational system by evaluating gaps between students' expectations and perceptions as they relate to SERVQUAL dimensions with respect to students' loyalty and commitment toward to the tertiary organization. Thus this study will focus on Gap 5 between expected and perceived service.

3. The instrument

The instrument, which intended to measure students' satisfaction regarding their studies quality, is SEVQUAL (Parasuraman, Berry and Zeitham, 1988; 1990). This tool consisted of 25 items referring to five different attitude subscales, as follows: (a) Tangibles - respondents' positive or negative attitudes towards organization facilities and equipment, environment and brochures about services (Tan1, Tan 2, Tan3, Tan 4), (e.g. Tan1: Faculty of Social and Human Sciences and has contemporary equipment for

the education process (PCs, LCDs, beamers, etc.); (b) Reliability- respondents' positive or negative attitudes towards Services, timing, Consistency of charges, staff professionalism and competence (Rel5, Rel6, Rel7, Rel8, Rel9, Rel10) (e.g. Rel5:Classes are held in accordance with the schedule of lectures and without delays); (c) Responsiveness - respondents' positive or negative attitudes towards concerning Prompt services and staff Responsiveness Res11, Res12, Res13 (e.g.Res11: Inquiries, requests and claims of students are handled and resolved timely and promptly.); (d) Assurance- respondents' positive or negative attitudes towards staff friendliness and courteousness, behavior and knowledge (Ass14, Ass15, Ass16, Ass17, Ass18, Ass19) (e.g. Ass14: Academic staff has the necessary knowledge and skills, and adequate communication skills); (e) Empathy - respondents' positive or negative attitudes toward service availability, students feedback, staff interest and empathy (Emp20, Emp21, Emp22, Emp23, Emp24, Emp25) (e.g. Emp20: Academic staff understands students' needs.). Each item of the instrument used a 5-point Likert scale that ranged from 1-Strongly Disagree to 5-Strongly Agree. The value of Cronbach's α coefficient for this instrument in this study's sample was 0.919 in terms of perceptions and 0.939 in terms of expectations.

4. Profiles of the respondents

The demographic profiles includes the following characteristics of the despondences; gender, age and year of education. The demographic profiles shown in Table 1 is based on frequency and relative frequency distributions.

The sample comprised of 202 interviewees from the department of Business administration in the University of Macedonia, of whom 127 (62.9%) were men and 75 (37.1%) were women. With respect to the ages of participants, 138 (68.3%) of them were 18 years old, 28 (13.9%) of them were 19 years old, 9 (4.5%) of them were 20 years old and, finally, 28 (13.4%) were 21 years or more. With respect to their year of studies, 138 (68.3%) of them were during their first year of their studies, 28 (13.9%) of them were during the second year, 9 (4.5%) of them were during the third year 16 (7.9%) of them were during the fourth year and 11 (5.4%) of them were during the fifth year and above (Table 1).

Table 1: Demographic data of the sample (N = 202)

Variables	**Classes**	**N=202**	**%**
Gender	Male	127	62.9

	Female	75	37.1
Age	18 years	138	68.3
	19 years	28	13.9
	20 years	9	4.5
	21 years or more	28	13.4
Year of Studies	First year	138	68.3
	Second year	28	13.9
	Third year	9	4.5
	Fourth year	16	7.9
	Fifth year and above	11	5.4

5. **Results**

Reliability test: Before proceeding with the analysis, a reliability test was carried out to ensure that the data collected is reliable (Table 2). The Cronbach' alpha coefficient is calculated to measure the reliability of the five dimensions, i.e. Tangibility, Reliability, Responsiveness, Assurance and Empathy (Table 2). Cronbach' alpha coefficient verified the reliability of the instrument SERVQUAL both for perceptions and expectations. In additions Cronbach' alpha coefficient was above the cutoff point of 0.70 for all the dimensions of SERVQUAL both for perceptions and expectations (Table 2).

Table 2: Cronbach's Alpha of all the items

Dimensions	**Perceptions**	**Expectations**
Tangibles	0.721	0.825
Reliability	0.767	0.808
Responsiveness	0.779	0.846
Assurance	0.823	0.747
Empathy	0.854	0.816
Total Scale	0.919	0.939

The following section presents the mean and the standard deviation of perception and expectations and the Service Gap of students' statements on Tangibles/Tangibility (Table 3). From the results presented in Table 3 it can be observed that the mean expectation scores are greater than the mean perception scores in relation to all four

attributes, fact that it can certify that students are dissatisfied. However in terms of magnitudes of the gap scores, it was found the gap scores ranged from -1,010 to -0.322. Attribute Tan3 referring to whether Employees of Faculty of Social and Human Sciences appear professional and neat has the highest mean both in terms of expectations and perceptions. Attribute Tan4 referring to whether teaching materials are available and up-to-date (study programs, brochures, student guides, etc.) has the highest gap which is statistically significant.

From the results presented in Table 3 it can be observed that the mean expectation scores related to Reliability dimension are greater than the mean perception scores in relation to all six attributes, fact that it can certify that students are dissatisfied. However in terms of magnitudes of the gap scores, it was found the gap scores ranged from -0.421 to -0.248. Attribute Rel8 referring to whether academic staff has precise records of students' activities (presence at lectures, exam results, etc.) has the highest mean in terms of expectations. Attribute Rel7 referring to whether staff at Faculty Social and Human Sciences provides support and help to students has the highest mean in terms of perceptions. Attribute Rel9 referring to whether Academic staff applies consistent grading criteria has the highest negative sign. In addition Attribute Rel9 has the highest gap which is statistically significant.

From the results presented in Table 3 it can be observed that the mean expectation scores related to Responsiveness dimension are greater than the mean perception scores in relation to all three attributes, fact that it can certify that students are dissatisfied. Attribute Res12 referring to whether academic staff conducts themselves in students' best interest has the highest mean both in terms of expectation and perception and the lowest in the dimension of Responsiveness has the attribute Res11 referring to whether inquiries, requests and claims of students are handled and resolved timely and promptly. Attribute Res12 referring to whether academic staff conducts themselves in students' best interest has the highest negative sign. In addition Attribute Res12 has the highest gap which is statistically significant in terms of Responsiveness' dimension.

From the results presented in Table 3 it can be easily observed that the mean expectation scores are greater than the mean perception scores in relation to all six attributes of assurance dimension. The results show that students are not satisfied as far as assurance is concerned. However, in terms of magnitudes of the gap scores, these ranged from -0.282 to -0.010. Attribute Ass15 referring to whether faculty of Social and Human Sciences implements study and educational programs with clear aims for specialization

of students has the highest mean value in terms of perceptions while Ass16 referring to whether quality of education process is at a high level in terms of expectations.

Attribute Ass18 referring to whether reputation and position of Faculty of Social and Human Sciences in the environment is adequate has the highest negative sign. In addition Attribute Ass18 has the highest gap which is statistically significant connected with assurance dimension.

The following paragraph presents the mean value and the standard deviation of students' perception and expectations and Service Gap on Empathy. From the results presented in Table 3 it is manifest that the mean expectation scores are greater than the mean perception scores in relation to all four attributes on Empathy, fact that once again confirms students' dissatisfaction. Even so, in terms of magnitudes of the gap scores, it was found that the gap scores ranged from -0.366 to -0.089.

It should be noted that the highest mean value both in terms of perceptions and expectations involves attribute Emp23 referring to whether academic staff is available for consultations and is forthcoming towards students. Furthermore attribute Emp20 referring to whether Academic staff understands students' needs has the lowest mean value both in terms of perceptions and expectations. Attribute Emp20 referring to whether academic staff understands students' needs has the highest gap which is statistically significant connected with Empathy dimension.

Table 3: Mean Score of Students Perceptions and Expectations and Quality Gap

Service Quality Dimensions	**Items Related to Each Dimension**	**M Perceptions**	**SD Perceptions**	**M Expectations**	**SD Expectations**	**Gap**	**95%Confidence Interval of the Difference**
Tangibles	Tan1. Faculty of Social and Human Sciences and has contemporary equipment for the education process (PCs, LCDs, beamers, etc.).	3.19	1.001	3.69	.955	-.500	-.658, -.332
	Tan2. Building and premises of Faculty Social and Human Sciences are modern and visually likeable.	3.44	1.012	3.82	.904	-.381	-.528, -.235
	Tan3. Employees of Faculty of Social and Human Sciences appear professional and neat.	3.64	.853	3.97	.756	-.322	-.446, -.197
	Tan4. Teaching materials are available	2.87	.991	3.88	1.046	-1,010	-1.213, -.807

	and up-to-date (study programs, brochures, student guides, etc.).						
Reliability	Rel5. Classes are held in accordance with the schedule of lectures and without delays.	3.58	.838	3.83	.819	-.248	-.356, -.139
	Rel6. Working hours of Office for student affairs are adequate and in accordance with students' needs.	3.45	.925	3.81	.961	-.361	-.544, -.179
	Rel7. Staff at Faculty Social and Human Sciences provides support and help to students.	3.72	.959	4.01	.782	-.297	-.427, -.167
	Rel8. Academic staff has precise records of students' activities (presence at lectures, exam results, etc.).	3.71	1.036	4.05	.805	-.347	-.490, -.203
	Rel9. Academic staff applies consistent grading criteria.	3.41	1.029	3.83	.878	-.421	-.567, -.275
	Real10. Students are timely informed about realization of certain activities (exams, presentations, seminars, etc.).	3.36	.871	3.68	.864	-.322	-.450, -.193
Responsiveness	Res11. Inquiries, requests and claims of students are handled and resolved timely and promptly.	3.26	1.091	3.61	1.007	-.351	-.493, -.210
	Res12. Academic staff conducts themselves in students' best interest.	3.69	.971	4.08	3.572	-.391	-.886, .104
	Ress13. Academic staff pays special attention and provides help to students in resolving their problems.	3.64	1.018	3.77	.956	-.129	-.218, -.040
Assurance	Ass14. Academic staff has the necessary knowledge and skills, and adequate communication skills.	3.42	1.049	3.44	1,050	-.025	-.054, .004
	Ass15. Faculty of Social and Human Sciences implements study and educational programs with clear aims for specialization of students.	3.90	.881	3.91	.882	-.010	-.029, .010

	Ass16. Quality of education process is at a high level.	3.86	.853	3.97	.749	-.104	-.182, -.026
	Ass17. Conduct of staff fills students with confidence	3.64	.969	3.79	.850	-.153	-.245, -.062
	Ass18. Reputation and position of Faculty of Social and Human Sciences in the environment is adequate	3.43	.976	3.71	.827	-.282	-.399, -.165
	Ass19. Academic staff provides professional answers to students' questions.	3.58	.862	3.73	.797	-.153	-.237, -.070
Empathy	Emp20. Academic staff understands students' needs.	3.19	.934	3.56	.908	-.366	-.496, -.236
	Emp21. Academic staff shows positive attitudes towards students.	3.43	.966	3.64	.871	-.213	-.315, -.110
	Emp22. Academic staff treats students equally and with respect.	3.95	.885	4.04	.797	-.089	-.157, -.021
	Emp23. Academic staff is available for consultations and is forthcoming towards students.	4.03	.982	4.17	.837	-.144	-.226, -.061
	Emp24. Faculty of Social and Human Sciences values and acknowledges feedback from students for improving processes.	3.54	1.159	3.79	.996	-.248	-.359, -.136
	Emp25. Staff is polite, kind and professional in communication with students.	3.40	1.210	3.70	1.037	-.307	-.436, -.178

Among the dimensions, the highest gap was -.55198 for Empathy, and the lowest was -0.12129 for Assurance. The highest mean level of perceptions was 3.6378 for Assurance and the lowest mean level was 3.2847 for Tangibles. The highest mean level of expectations was 3.6378 for Empathy and the lowest mean level was 3.7591 for Assurance. Among all the dimensions, the gaps were statistically significant ($p<0.01$) as well as Service quality Gap (-0.31490) (Table 4).

Table 4. Mean Score and Standard Deviation (SD) of Students' Perceptions and Expectations Regarding Educational Service Quality (N = 202)

Dimensions of Educational Quality	Mean ± SD of Perceptions	Mean ± SD of Expectations	Level of Quality Gap	P Value
Tangibles	3.2847±0.71326	3.8366±0.52952	-.55198	.001
Reliability	3.5355±0.64301	3.8680±0.45882	-.34536	.001
Responsiveness	3.5314±0.85574	3.8218±1.39696	-.29043	.002
Assurance	3.6378±0.68031	3.7591±0.57422	-.12129	.001
Empathy	3.5899±0.62296	3.8685±0.49618	-.36648	.001
Service quality Gap	3.5159±0.13639	3.8308±0.04489	-.31490	.001

It is should be pointed out that there was no statistically significant relations between the gender and students' perceptions as well as students' expectations.

Table 5. The Relationship between Students' Gender and Their Perceptions and Expectations Regarding Educational Service Quality (N = 202)

Educational Quality	Gender	N	Mean ± SD	P Value
Perceptions	Male	127	3.5113±0.60370	.625
	Female	75	3.4693±0.56517	
Expectations	Male	127	3.8586±0.49710	.265
	Female	75	3.7837±0.38913	

6. Conclusions

The key goal of this study is to assess the service quality offered by the Greek tertiary educational system by Gap Analysis. The study focuses on the gaps between students' expectations and perceptions as they relate to SERVQUAL dimensions. More specifically it focuses on Gap 5 that is the perception gap in Gap Analysis. It evaluates the gap between expectations and perceptions regarding quality service. It is worth observing that there was a negative gap for all 25 attributes. There is any differentiation regarding gender and perceptions well as expectations. This result is in a line with the results of Alijanzadeh et al. (2018). Still, the results relating to the existed service quality gap of this study are in a line with the work of Legcevic, (2010). Among the dimensions, the highest gap was -.55198 for Empathy following the gap equal to -0.36648 for empathy. More attention to be paid is needed in order students' expectations to be fulfilled and tertiary education will meet high standards. Otherwise

there will be serious circumstances like dropout rates, unemployment and brain drain as Alijanzadeh et al. (2018) stated.

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