

Competing Through Quality in Higher Education: The Case of Faculty of Management Koper

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In the area of higher education universities and faculties strive to provide high quality services because they need to compete for their students. Measuring the quality of their services is therefore an important task, especially for those institutions that give a feedback on the dimensions of quality, because it offers them the possibility for significant competitive advantages in the knowledge market. In theory there are 5 most important dimensions of service quality. We developed a questionnaire with 18 items describing these 5 dimensions of quality and gave it to focus groups of students. The analysis, which included students and also professors, was carried out in the Faculty of management Koper. SERVQUAL theory was challenged when those 18 items were examined by using factor analysis. In that way the authors could establish which are the most important determinants of quality for students and professors of this faculty.

INTRODUCTION

Higher education is a fast growing service industry and every day it is more and more exposed to the globalization processes. Service quality, emphasizing student satisfaction, is a newly emerging field of concern. In order to attract students, serve their needs and retain them, higher education providers are actively involved in understanding students' expectations and perceptions of service quality. They often need to adopt techniques of measuring quality of their services just like in the business sector.

BACKGROUND AND LITERATURE REVIEW

Quality management initiatives in higher education institutions are much wider and deeper than a quality assurance system. It also involves a change of mindset (Solomon 1993, 10). One way to attain this quality mindset is to develop an understanding among the employee group that quality management is concerned with meeting customers' requirements (Tindley 1992, 21). There are many different understandings of

quality, so there is a tendency that the performance indicators are written from an educator's perspective. A scientific or expert approach to quality often prevails in higher education where the expert opinion prescribes levels/standards of acceptability. There has been little attempt to approach this topic from the viewpoint of the student (Soutar and McNeil 1996, 73).

Managerial or excellence approach to quality stresses the importance of customer satisfaction.

However, quality improvement to external customers, i.e. students, must not undermine the care about the internal customers too. An expansion of the reception/assistance function for students would be the first choice in a quality improvement programme for external customers. Improvement in perceived quality of staff requires a sustained improvement in the clarity, accuracy and reliability of the service offered, with no particular aspect standing out. Improvements that would meet only external customers' perceptions, leaving out internal customers would almost certainly generate a negative reaction among the latter. The two areas are not incompatible but, given limited resources, it may not be possible to simultaneously improve appearance and responsiveness as well as the task-based service given to staff (Galloway 1998, 24).

In the search for a reliable method of measuring service quality there has been little consensus on a methodology which is generally applicable to all service industries. In the last two decades SERVQUAL (a multiple item measure for measuring consumer perceptions of Service Quality) disconfirmation model has become the most experimented and challenged. Disconfirmation models have sought to define quality in terms of the difference which appears between customers' expectations and their perceptions of the actual service delivery. Parasuraman et al. (1985, 41–50) defined five dimensions of service quality that other researchers often failed to replicate in many later studies. But their work in this field still stands out in terms of trying to conceptualise the way customers see service quality. Parasuraman et al. (1988, 16) define perceived service quality as a 'global judgement, or attitude, relating to the superiority of the service'. They define expectations as 'desires or wants of consumers' beliefs concerning the service received' (Parasuraman et al. 1988, 17).

As a result of a later study, 10 determinants of service quality in the SERVQUAL model decreased to the following five (Grönroos 2000, 74–6):

- *Reliability*. This means that the service firm provides the customers

- with accurate service the first time without making any mistakes and delivers what promised to do by the time that was agreed upon.
- *Responsiveness*. This means that the employees of a service firm are willing to help customers and respond to their requests as well as inform customers when service will be provided, and then give prompt service.
 - *Assurance*. This means that the employees' behaviour will give customers confidence in the firm and that the firm makes customers feel safe. It also means that the employees are always courteous and have the necessary knowledge to respond to customers' questions.
 - *Empathy*. This means that the firm understands customers' problems and performs in their best interests as well as gives customers individual personal attention and has convenient operating hours.
 - *Tangibles*. This determinant is related to the appeal of facilities, equipment and material used by a service firm as well as to the appearance of service employees.

Cronin and Taylor (1992, 55–68) advanced the use of the model called *SERVPERF* (Service Quality = Performance), based on perceptions of performance only. It results from examinations and assessments of the gap theory proposed by Parasuraman et al., and it relies on the construct that 'service quality should be measured as an attitude' (Cronin and Taylor 1992, 64). Another service quality measurement model, proposed by Teas (1993, 18–34) is called *EP* (Evaluated Performance).

RESEARCH METHODS

To apply a *SERVQUAL* based survey in the higher education sector, we had to adapt the questions to the context and form them in a language, which the respondents could identify. Parasuraman et al. (1991, 445) recognized: 'context-specific items can be used to supplement *SERVQUAL*', despite their efforts to build a generic instrument. Consequently, the first stage of the research was to consult undergraduate students, via focus groups, to test out and refine the wording and understanding of potential survey questions.

Stage 1: Student Focus Groups

We conducted three undergraduate student focus groups on three higher education institutions. They consisted of six participants from the first

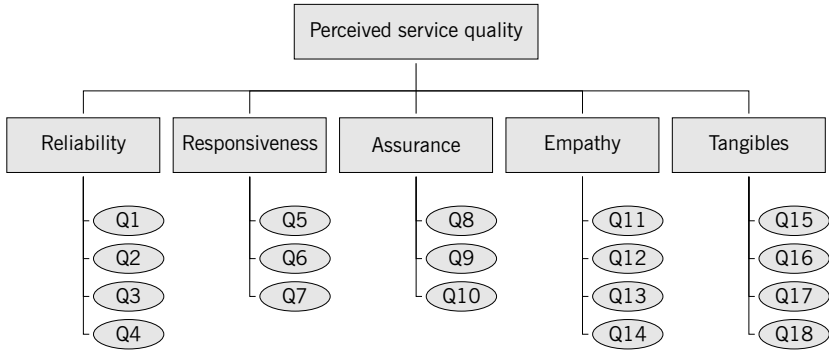


FIGURE 1 Perceived service quality dimensions in a designed questionnaire

and third year. Initial discussions were aimed at producing a series of recollections of their experiences at the institution and the perceived quality of higher education services. The purpose of the discussion was to understand singular dimensions of the perceived quality, to choose the right wording for the survey questionnaire, and to define the most important factors of higher education process, as seen by the participants. It emerged that students could draw a clear distinction between administrative and academic roles.

On the basis of the findings, we constructed our *SERVPERF* adapted questionnaire. The original *SERVPERF* questionnaire used the word ‘employees’ in a number of statements. In order to get appropriate answers to the statements, the wording had to be precise. So we had to use the words ‘administrative staff’, or ‘academic staff’ if necessary in different questions. For example: ‘Employees are consistently polite with consumers’ was transformed into ‘Administrative staff is consistently polite with students’.

As a result of the focus group discussions, a set of 18 statements was made, adapted from a generic *SERVPERF* questionnaire and used in the second stage of the survey. We used two-poled statements, for example: ‘Employees never have students’ best interests at heart’ and ‘Employees always have students’ best interests at heart’. Respondents had to choose their agreement from one or the other pole of statement in a five dimensional scale. The questionnaire included 18 statements about ‘perceived quality’. The second set of 18 statements, which was connected to the first, was designed to get from the respondents their view on the importance of single statements on a 5-point Likert-type scale. Finally, we asked three

control questions: if the quality of services offered is satisfactory, if students' expectations are fulfilled and if the employability requirements of faculty graduates are met. We offered a 5-point rang scale.

Stage 2: The Undergraduate Student Survey

In the academic year 2003/2004 the Faculty of management Koper enrolled 1762 students in the first three years of study and regularly employed 50 professors. We obtained 390 responses, 361 from students (20.5% response rate), and 29 from professors (58% response rate). Students were asked to answer the questionnaire during class time in a paper form because we had some bad experience with electronic surveys. Students were in fact not quite convinced about the anonymity of that kind of research. We had two separate samples: one included students of the Faculty of Management and the other professors and assistants of that faculty. The type of analysis allowed us to divide the first sample into two samples: full-time and part-time students or into several sub samples according to the year of study. Our analysis was based on two samples only.

Stage 3: Data Analysis

The Excel data base was converted into SPSS data base file. We first analysed frequency tables. A better overview on results can be seen with a Descriptives procedure which displays univariate summary statistics for several variables in a single table. Because we analysed two samples we used the Means procedure which calculates subgroup means and related univariate statistics for dependent variables within categories for a set of quality dimensions/items.

In the second stage factor analysis was used to produce smaller number of quality dimensions. There were 18 items concerning quality in our questionnaire and we were interested to reduce their number and find a smaller number of factors that would explain most of the variance observed. Factor analysis can be used with quantitative variables at the interval or ratio level, and our data was suitable for this kind of operation. The data should have a bivariate or normal distribution for each pair of variables and observations should be independent. The factor analysis model specifies that variables are determined by common factors (the factors estimated by the model) and unique factors (which do not overlap between observed variables); the computed estimates are based on the assumption that all unique factors are uncorrelated with each other and with the common factors (SPSS 1997).

SPSS offers seven methods of factor extraction and five methods of rotation, including direct oblimin and promax for non-orthogonal rotations. We used the method of principal components and analysed the unrotated factor solution and the rotated solution.

RESULTS

Frequency Tables

We first analysed frequency tables which show relatively high levels of satisfaction. On a 5-point Likert-type scale 1 represented the least desired option and 5 the most desired option of quality dimension. *Perceived quality* is on average always higher among academic staff than among students.

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As can be seen from table 1, professors and assistants show the highest level of satisfaction for keeping students informed about the time and place of services provided. According to the academic staff there is always will to help students. They also believe that students are timely informed about the time and place of services provided. They are least satisfied with the appearance of the faculty building and surroundings.

Students are also most satisfied with professors' efforts to inform them about the time and place of services provided. They also feel that the academic staff shows respect to the students. They are satisfied to being timely informed about the time and place of services provided. The lowest level of satisfaction is the same as with the academic staff – the appearance of the faculty building and surroundings. It is interesting to see that students are least satisfied with the time when services are carried out (often after the time promised) and with the attention of employees towards students.

Table 1 shows noticeable differences between students' and the academic staff's perception of quality. According to the T test there are statistically significant changes in perceived quality between students and the academic staff in all dimensions but in the appearance of the faculty building and surroundings, which is low in both groups. As far as perceived quality is concerned a standard deviation shows a bigger dispersion of students' answers than answers of the academic staff.

The most *important quality dimension* for the academic staff is being timely in informing students about the time and place of services provided (see table 2). The second most important item is the will to help students and the expertise of employees to answer students' questions. Students are also most satisfied with the fact that they are timely in-

TABLE 1 Perceived quality in two groups of respondents of FM

	Perceived quality dimensions			
	Students		Assistants and professors	
	Mean	Std. deviation	Mean	Std. deviation
A1	3.19	0.96	3.97	0.68
A2	2.80	0.98	3.41	0.82
A3	3.98	1.01	4.55	0.69
A4	3.62	1.07	4.31	0.66
A5	3.43	0.90	3.90	0.82
A6	3.19	0.90	3.86	0.79
A7	3.39	0.93	4.38	0.62
A8	3.28	0.94	4.10	0.77
A9	3.15	1.21	3.90	0.98
A10	3.48	1.01	3.93	0.70
A11	2.99	1.01	3.79	0.77
A12	3.67	0.93	4.21	0.68
A13	3.43	0.82	3.97	0.68
A14	3.35	0.83	3.97	0.78
A15	3.02	1.12	3.55	0.95
A16	2.57	1.00	2.83	1.07
A17	3.38	0.99	3.90	0.72
A18	3.53	0.99	4.07	0.88

N students = 361; N assistants and professors = 29

formed about the time and place of services provided. The second most important item is being regularly informed about the time and place of services provided. The third most important quality dimension is the employees' expertise to answer students' questions. Both groups stress that the appearance of the faculty building and surroundings is the least important quality dimension (see table 1).

At the end of the questionnaire there were three general questions concerning the quality of the Faculty of Management. We expected that the respondents would be more critical at the end of this detailed questionnaire than at its beginning. The academic staff is more satisfied with the quality of services of the Faculty of Management than students. However both levels of satisfaction are not low and more importantly, a dispersion of answers in the two groups of respondents is relatively low.

TABLE 2 The importance of quality dimensions for two groups of respondents of FM

	Importance of quality dimensions			
	Students		Assistants and professors	
	Mean	Std. deviation	Mean	Std. deviation
B1	4.24	0.94	4.55	0.57
B2	4.27	0.86	4.45	0.51
B3	4.44	0.84	4.48	0.63
B4	4.53	0.79	4.76	0.44
B5	4.20	0.78	4.41	0.78
B6	4.19	0.74	4.10	0.82
B7	4.34	0.82	4.62	0.49
B8	4.23	0.82	4.48	0.74
B9	4.06	0.96	4.34	0.72
B10	4.40	0.80	4.62	0.73
B11	3.98	0.80	4.17	0.60
B12	4.32	0.76	4.52	0.63
B13	4.24	0.77	4.38	0.86
B14	4.27	0.77	4.07	0.75
B15	3.91	0.96	4.59	0.50
B16	3.46	1.03	3.90	0.72
B17	3.78	0.97	4.17	0.85
B18	3.93	0.90	4.45	0.57

N students = 361; N assistants and professors = 29

As far as services of the Faculty of Management are concerned, on average the expectations of the academic staff were higher than those of the students. Since students evaluate the ‘core’ activity of the faculty, which is teaching, their opinion is important.

We also see that students are worried about their future employment, much more than the academic staff. The difference between the answers of these two groups of respondents is big.

Factor Analysis: The most Important Determinants of Quality

Parasuraman et al. reduced 22 quality items to 10. With factor analysis they reduced those 10 dimensions to the following 5 which are considered as universal: reliability, responsiveness, assurance, empathy and tangibles. We started this research with these 5 dimensions and with the help

of focus groups we constructed a questionnaire with 18 quality dimensions. Because we learned – from literature and from our research – that some items are context specific and that different stakeholders understand the quality differently, we decided to analyse our data with factor analysis and reduce the number of quality items.

Students. Factor analysis with students showed 2 factors that explain 51.197% of the total variance. We analysed the unrotated and the rotated solution (see table 3).

The unrotated solution gives us 2 factors: the first explaining 40.75% of the variance and the second explaining 10.45% of the variance. The unrotated solution is easy to interpret because Factor 1 is constituted of items B1–B14 and factor 2 consists of items B15–B18. In other words *quality items concerning reliability, responsiveness, assurance and empathy constitute factor 1, whereas items explaining tangibles constitute factor 2.*

The component Correlation Matrix shows a correlation between factors of 0.418 which is relatively high, therefore we can interpret Pattern Matrix in the Direct Oblimin Rotation.

As seen from table 4, in the rotated solution Factor 1 explained 34.1% of the variance whereas factor 2 explained 17.1% of the variance. We can see practically the same result – the only difference is in the item B6: ‘realisation of students’ suggestions by professors’ which falls in Factor 2 together with items concerning tangibles such as: faculty equipment, attractiveness of the faculty and its surroundings, attractiveness of study materials and other service materials, appropriateness of the opening hours (faculty, library). However we should stress that the item B16 does not heavily influence factor 2 or factor 1.

Academic Staff (Professors and Assistants). Factor analysis on data provided by the academic staff (professors and assistants) showed a more complex structure. Five factors were selected that explain 72.645% of the total variance, which is relatively high (see table 5).

The first factor which explains 29.8% of the total variance consists of the following items (see also table 6):

- Students can rely on the help of employees when solving problems.
- Existence of the will to help students.
- Students inspired by employees.
- B10–B14 which reflect the respect of students, individual attention to students, understanding of their needs, responsiveness to their interests and questions.

TABLE 3 Factor analysis: variance explained in a sample of students of FM

	Total	% of variance	Cumulative
<i>Initial eigenvalues</i>			
1	7.334	40.747	40.747
2	1.881	10.451	51.197
3	0.972	5.400	56.597
4	0.840	4.665	61.262
5	0.783	4.352	65.614
6	0.762	4.231	69.845
7	0.700	3.890	73.735
8	0.663	3.683	77.418
9	0.603	3.348	80.766
10	0.555	3.081	83.847
11	0.458	2.545	86.392
12	0.450	2.500	88.893
13	0.426	2.367	91.260
14	0.408	2.269	93.529
15	0.348	1.931	95.460
16	0.331	1.840	97.300
17	0.277	1.537	98.837
18	0.209	1.163	100.00
<i>Extraction sums of squared loadings</i>			
1	7.334	40.747	40.747
2	1.881	10.451	51.197
<i>Rotation sums of squared loadings</i>			
1	6.137	34.094	34.094
2	3.079	17.103	51.197

Extraction method: Principal Component Analysis.

Factor 1 can be therefore named as ‘attention to students’.

Factor 2 explains 14.9% of the total variance. It consists of providing students with regular and timely information about the time and place of services provided. Factor 2 also includes the equipment of the faculty and its appearance with a negative correlation. *Factor 2 can therefore be explained as ‘informing students about the services provided’.*

Factor 3 explains 11.5% of the total variance. It consists of the items prompt realisation of services according to schedule and the realisation

TABLE 4 Students of FM recognise 2 dimensions of service quality (direct oblimin rotation)

	Component	
	1	2
B1	0.747	-0.156
B2	0.722	-0.173
B3	0.711	0.050
B4	0.703	0.058
B5	0.700	0.020
B6	0.293	0.370
B7	0.621	0.184
B8	0.677	-0.033
B9	0.693	0.087
B10	0.568	0.005
B11	0.647	0.037
B12	0.773	-0.010
B13	0.724	0.112
B14	0.657	0.127
B15	-0.037	0.785
B16	-0.036	0.860
B17	0.081	0.769
B18	0.019	0.677

Extraction method: Principal Component Analysis.

Rotation method: Oblimin with Kaiser Normalization.

of students' suggestions by professors. Factor 3 also includes politeness of administrative staff with a negative correlation. *Factor 3 can therefore be explained as 'realisation of planned services and students' suggestions'.*

Factor 4 explains 9.6% of the total variance. It consists of two items: *attractiveness of study materials and other service materials, appropriateness of the opening hours (faculty, library).*

Factor 5 explains 6.8% of the total variance and it consists of only one item: *service performance in time.*

DISCUSSION

Quality is a term often used in management, but the understanding of the quality of services can be different for different stakeholders. Our analysis confirms this fact. This also proves that there is no universal the-

TABLE 5 Factor analysis: Variance explained in a sample of professors and assistants of FM

	Total	% of variance	Cumulative %
<i>Initial eigenvalues</i>			
1	5.372	29.842	29.842
2	2.679	14.881	44.722
3	2.066	11.480	56.203
4	1.732	9.621	65.824
5	1.228	6.821	72.645
6	0.947	5.263	77.908
7	0.901	5.007	82.916
8	0.783	4.350	87.266
9	0.615	3.418	90.684
10	0.412	2.289	92.973
11	0.336	1.869	94.843
12	0.298	1.653	96.496
13	0.207	1.152	97.648
14	0.145	0.808	98.456
15	0.130	0.722	99.178
16	0.071	0.393	99.571
17	0.067	0.369	99.940
18	0.011	0.061	100.000
<i>Extraction sums of squared loadings</i>			
1	5.372	29.842	29.842
2	2.679	14.881	44.722
3	2.066	11.480	56.203
4	1.732	9.621	65.824
5	1.228	6.821	72.645

Extraction method: Principal Component Analysis.

ory of quality that can be applied to different sectors. We considered 5 quality dimensions, defined by Parasuraman et al. (1985) as a good start for the research about quality but we had to develop different models of quality in different sectors.

The case study was carried out at the Faculty of Management Koper, Slovenia. Students and the academic staff (professors and assistants) were

TABLE 6 Academic staff of FM recognises five factors/quality dimensions (factor analysis, unrotated solution)

	Component				
	1	2	3	4	5
B1	0.615	-0.337	0.360	-0.414	0.279
B2	0.476	0.179	-0.150	-0.271	0.490
B3	0.493	0.626	0.304	0.052	-0.048
B4	0.348	0.610	-0.239	0.268	0.451
B5	0.510	0.167	0.686	-0.173	0.028
B6	0.401	0.394	0.527	-0.039	-0.311
B7	0.550	0.151	-0.095	-0.278	-0.334
B8	0.561	-0.550	0.005	0.160	-0.375
B9	0.418	-0.022	-0.668	-0.209	-0.303
B10	0.692	0.118	-0.212	-0.084	0.191
B11	0.794	-0.147	-0.225	-0.108	0.039
B12	0.586	0.109	-0.488	0.030	-0.120
B13	0.724	0.293	0.150	0.026	-0.160
B14	0.754	0.031	-0.044	0.211	-0.323
B15	0.466	-0.642	0.047	-0.321	0.016
B16	0.406	-0.701	-0.038	0.278	-0.267
B17	0.340	-0.442	0.414	0.627	0.021
B18	0.377	0.161	-0.166	0.773	0.089

Extraction method: Principal Component Analysis.

interviewed about perceived quality of services at this faculty and about the most important dimension of quality. Our analysis was focused on understanding the quality, so we closely analysed the second set of questions that concerned the most important quality dimensions. The Likert 5-point scale enabled us to reduce 18 items with factor analysis. Our results showed that students and professors understand quality differently.

The students' understanding of service quality can be described with 2 factors consisting of several items. The first factor includes 4 out of 5 quality dimensions: reliability, responsiveness, assurance and empathy. The second – less important factor – consists of only one quality dimension, i.e. tangibles. The results show that students perceive quality of services in total – they experience all relations like quality, each item constituting their understanding of quality. Tangibles are usually less im-

portant in understanding quality and do not influence students' satisfaction as much as all relations they are part of in the course of study. The management of the faculty should therefore pay attention on services provided as a whole and not only to just a few quality items.

The academic staff – professors and assistants – understand quality in a different way than students. They recognise 5 different quality dimensions which differ from the concept of Parasuraman et al. They find attention to students as the most important determinant of quality. The second most important dimension consists of being regular and timely in informing students about services. The third dimension of quality perceived by the academic staff consists of the realisation of planned services and students' suggestions. The fourth factor stresses attractiveness of study materials and other service materials, appropriateness of the opening hours (faculty, library), whereas the fifth factor consists of service performance in time.

It is important to know which are the quality dimensions of students and the academic staff of the Faculty of Management. This understanding is especially important when making decisions about improving service quality. External and internal customers relate differently to different quality initiatives because their understanding and perceiving of quality is different.

This study is limited to the results obtained at only one smaller faculty. It should be carried out again after a certain period of time to monitor how perceptions of service quality change over time.

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