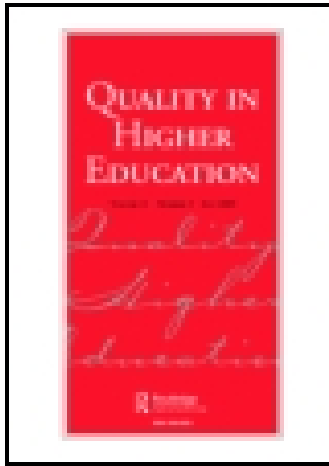


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An Exploratory Use of the Stakeholder Approach to Defining and Measuring Quality: The Case of a Cypriot Higher Education Institution

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ABSTRACT Cyprus has recently adopted laws to allow for the provision of private higher education. This case study concerns one such institution that is developing its understanding of quality through the eyes of two of its key stakeholders, staff and students. This empirical study is nested within the literature that advocates community-wide acceptance of quality assessment structures that reflect the views of the stakeholders. The purpose of this empirical study has been to define and assess quality in a Cypriot university using dimensions of quality as identified by two stakeholders (students and teachers) and the perceptions of the stakeholders. Importance–performance analysis was also used as a tool for identifying and prioritising areas for quality improvement purposes. The results identified a stakeholder-defined conceptual framework of quality dimensions. In addition, the results indicated a mismatch in student and teaching staff perceptions regarding the importance of factors in what constitutes quality higher education provision. The key differences are that students consider the programmes and courses of study offered by a higher education institution and the teaching and learning that takes place in the institution as the most important dimensions of quality higher education provision. Teaching staff, though, consider the student support services, the teaching and learning facilities and student examination and assessment as the most important dimensions.

Keywords: dimensions of quality; stakeholders; quality perceptions; students; academics; Cyprus

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Introduction

Historically, responsibility for quality management in higher education has fallen on a decentralised system of accrediting agencies, which largely monitor quality through external quality approaches (Welsh & Dey, 2002). Governments tend to address quality management issues through external quality monitoring activities (Green, 1994) such as accreditation, audits, assessment and external examination (Harvey, 2002). The objectives of those approaches are institutional and programme compliance with a series of regulations and standards, the achievement of stated institutional goals and conformity to given specifications. Yet, these external quality approaches have not gone uncontested. Gibbs and Iacovidou (2004) for example, refer to this approach as 'pedagogy of the confined' where quality is an external measurable form of control that cannot be used to mean good education. Harvey (2002, p. 5) also critiques external quality monitoring as 'bureaucratic... incapable of asking the right questions... leads to directing scarce resources from the improvement of learning, the experience for students and the development of research and scholarship'.

Nowadays however, in response to various market forces (Sahney *et al.*, 2004) higher education institutions have shifted the emphasis from formal (external) assessments of quality to systems of quality management that are internally developed and implemented (Brennan & Shah, 2000). The emphasis of such systems is the identification of quality characteristics by the various stakeholders of higher education institutions (Harvey & Green, 1993; Harvey, 1996; Joseph & Joseph, 1997; Lagrosen *et al.*, 2004; Becket & Brooks, 2008).

Many of the studies that investigated the concept of quality in higher education identified the need for further research on that subject (Hill, 1995; Pariseau & McDaniel, 1997; Lagrosen *et al.*, 2004; Becket & Brooks, 2008). This study intends to supplement existing studies and contribute to the knowledge on the conceptualisation and operationalisation of quality in higher education, especially in the Cyprus higher education area where no similar research has been carried out.

Advancing stakeholder quality assurance in higher education

Despite the extent of research work on quality management and the several patterns of practice put into effect in different countries, there is still no agreement on a single model for quality management in higher education (Srikanthan & Dalrymple, 2003; Becket & Brooks, 2006). It may be that there is no universal way of defining and managing quality but the literature advocates that there is considerable agreement that for any model of quality to be accepted community-wide it must represent the views of the stakeholders (Birnbaum, 2000; Srikanthan & Dalrymple, 2007; Houston, 2008). Quality in higher education is owned and determined by the stakeholders (Harvey & Green, 1993; Shanahan & Gerber, 2004) and most attempts to characterise quality are highly related as they adopt a 'customer' or 'stakeholder approach' (Cheng & Tam, 1997; Cullen *et al.*, 2003). Becket & Brooks (2006) for example, suggest that the different perspectives of the stakeholders of higher education must be considered when addressing the issue of quality. In support of that, Srikanthan & Dalrymple (2003) claim that any quality model developed must be sensitive and represent the expectations of the stakeholders. A 'stakeholder-approach' to quality is also supported by Cullen *et al.* (2003, p. 6) in their claim that: 'As far as quality is concerned the key issue is the ability of the quality concept to facilitate the perspective of a range of stakeholders'.

Further to the aforementioned, the literature also suggests that quality is not a unitary concept and as a result it must be defined as criteria or dimensions of quality; as referred to

in various studies, such as support services, university reputation, and programmes of study (Harvey *et al.*, 1992; Harvey & Green, 1993; Green, 1994; Harvey & Knight, 1996; Lagrosen *et al.*, 2004). Green (1994) for example, suggests that the best approach to quality in higher education is to define as clearly as possible the criteria that each stakeholder has for judging quality and to take into consideration these different views when assessing quality. In support of that, Harvey & Green (1993) suggest that a practical solution to a complex philosophical question, such as quality, would be to look at the criteria that different interest groups use in judging quality instead of starting with a single definition of quality. Green (1994) maintains this view when arguing that because of the difficulties in defining quality in higher education it is essential to define the criteria that each stakeholder uses when judging quality and take into account these competing views.

If quality is 'stakeholder defined' who are then the 'stakeholders' of higher education? Modern quality management supports that there are many 'customers' or 'stakeholders' especially when dealing with service providers such as higher education institutions (Lagrosen *et al.*, 2004). Some studies use the term 'customer' and others prefer the term 'stakeholder'. Various authors, such as Lagrosen *et al.* (2004) suggest the use of the term 'stakeholder' instead of 'customer' when discussing quality in higher education as this term is less controversial. This article adopts that approach.

Srikanthan & Dalrymple (2003) suggested that there are many stakeholders for whom the quality of higher education is vital, such as the government, the funding bodies, students, academic staff, employers and society at large, to name just a few. Cheng & Tam (1997) identify both internal and external stakeholders in the quality management process. Current students and academic staff are internal constituents in the quality management process whereas employers, government funding bodies, institutional management, prospective students or professional bodies are external; these stakeholders are likely to have disparate definitions of quality as well as different preferences for how quality is assessed (Cheng & Tam, 1997). This study concentrates on two internal stakeholders: students and academic staff. The selection of these two stakeholder groups from the range of potential stakeholders reflects the desire to focus, as far as possible on the prime relationship in the pedagogical exchange.

In synopsis, the literature proposes a 'pragmatic approach' (Harvey *et al.*, 1992, p. 6) to addressing quality: an approach that determines a set of criteria that are considered to be the determinants of quality, which are stakeholder-determined and are then used for measuring quality.

Methodology

The purpose of this study is to identify the dimensions that define quality for a private university, as identified by two of its stakeholders, students and teaching staff, and the identification of the quality perceptions of these stakeholders as tools for quality management. The following research questions, reflecting the study's primary purpose and objectives, were formulated:

- RQ 1: Which are the dimensions that define quality in higher education as identified by university students and teaching staff, and do they differ between the two stakeholders?
- RQ 2: Are there any differences in how quality is defined by students or teaching staff based on demographic variables?
- RQ 3: Which are the students' and teaching staff's perceptions of the quality of the institution?

RQ 4: What should be the priorities of the university administration with respect to the quality dimensions for quality improvement efforts?

The research was undertaken in three stages. The first explored the determinants/ characteristics of quality and, for that purpose, the expectations for quality of two stakeholders were collected through a series of focus groups and interviews. These qualitative methods were selected for collecting data since they are considered more appropriate for exploration purposes (Gummerson, 1991). A total of four student focus groups and four teaching faculty focus groups were carried out at the university and participants selected represented all three academic schools of the university. The data collected were analysed using Miles and Huberman's (1984) framework for qualitative data analysis in order to identify any emerging patterns. The emerging patterns, compared with existing theory from the literature search, led to the development of the questionnaire that was used for conducting this study.

The second phase was the construction and piloting of the questionnaires, based on the outcomes of the qualitative research and the literature. A four-point Likert-style rating scale, as used in similar studies (Harvey, 2002) was utilised. Prior to administration, the questionnaires were pilot-tested for reliability with the utilisation of the test-re-test method (both for students and academic staff) and for validity with a panel of three experts.

The third phase was the survey of the two targeted groups. The target population of the study included all students (local and international) pursuing an undergraduate academic degree and all full-time academic staff. The student population of the study was 2530 students and because of the big size of the population a sample was selected. A stratified random sample was used to avoid the danger of over- or under-representation of some members of the population. The specific strata selected were the school of enrolment and the student's year of study (first to fourth). A statistical error of 4% was adopted (which is widely considered as acceptable for a research study) leading to a sample size of 480 students. The sample size was, however, increased to 680 students to accommodate for expected non-responses. The student questionnaires were administered to the selected participants through group-distributions and were personally delivered to the academics teaching the selected course. The distribution was made before class to enable the researchers to discuss the purpose of the research and obtain the permission of the teaching staff for the administration of the questionnaires.

The teaching population consisted of all full-time academic staff members teaching in the three schools of the university during the academic year of 2007. According to the data provided by the university a total of 113 full-time academics were included in the research population. Because of the small size of the population and the typical problem with the response rate all 113 individuals were included in the study. The majority of the teaching staffs' questionnaires were personally delivered by the researchers and the rest were delivered to the office mail-boxes of the academic staff members with a cover letter explaining the purpose of the study and soliciting their contribution, making clear that participation was voluntary and anonymity was guaranteed.

The collected data were analysed using a statistical package. Descriptive and inferential statistics, namely reliability analysis (Cronbach's alpha), exploratory factor analysis, independent sample *t*-test, paired sample *t*-test and one-way ANOVA with *post hoc* multiple comparison test (Tukey HSD), were utilised to analyse the collected data, test their reliability and answer the formulated research questions. The findings for the last research question were derived through the use of the 'importance-performance' technique (Martilla & James,

1977) which is a very popular diagrammatic technique that enables the researcher to draw conclusions that assist in identifying and prioritising areas for quality improvement efforts. The model has been used in many studies and has great applicability in the higher education area (Petruzzellis *et al.*, 2006; Chen *et al.*, 2006 ; Douglas *et al.*, 2006) because as argued 'the information derived from this technique proves invaluable in terms of the development of strategies for the educational institutions that use it' (Joseph & Joseph, 1997, p. 17).

Research findings

Overall, there was a very satisfactory response rate both from students (86%) and from teaching staff (65%), which compares favourably with the response rate of most related studies identified in the literature (56% in Telford & Masson (2005); 61% student response rate in Pariseau & McDaniel (1997); 89% in Catfield (2000)). The demographic data (Table 1) collected indicated that there was a good match between the sample and the population.

To reduce the large number of variables investigated (64 items) to a smaller number of factors, the researchers conducted an exploratory factor analysis with the use of SPSS

TABLE 1. Demographic characteristics

Demographic variable	Students	Frequency	Valid %	Teaching staff	Frequency	Valid %
Gender	M	298	56.0	M	29	46.0
	F	234	44.0	F	34	54.0
	Total	532	100.0	Total	63	100.0
Age	17–20	158	29.7	20–29	1	1.6
	21–23	240	45.1	30–39	35	55.6
	24–26	84	15.8	40–49	19	30.2
	27+	50	9.4	50–59	7	11.1
				60+	1	1.6
	Total	532	100.0	Total	63	100.0
Univ. status	First yr	211	39.7	Lecturer	11	17.4
	Second yr	140	26.3	Senior lecturer	14	22.2
	Third yr	88	16.5	Assist. prof.	25	39.7
	Fourth yr	93	17.5	Assoc. prof.	11	17.5
	Total	532	100.0	Prof.	2	3.2
			Total	63	100.0	
School	Business	224	42.1	Business	27	42.9
	Humanities	161	30.3	Humanities	24	38.1
	Science &	147	27.6	Science &	12	19.0
	Engineering			Engineering		
	Total	532	100.0	Total	63	100.0
Nationality	National	426	80.1	National	45	71.4
	International	106	19.9	International	18	28.6
	Total	532	100.0	Total	63	100.0
Enrolment status	Full-time	472	88.7	Experience	10	15.9
				0–2 Yrs		
	Part-time	60	11.3	3–5 Yrs	17	27.0
				6–9 Yrs	17	27.0
	Total	532	100.0	10 + Yrs	19	30.1
			Total	63	100.0	

principal component analysis with varimax rotation (Kaiser normalisation). The appropriateness of the factor model was indicated by both a Kaiser–Mayer–Olkin (KMO) statistic value of 0.944, which confirmed its high sampling adequacy and the significance ($\chi^2 = 16108.65$; $p < 0.001$) of the Bartlett's test of sphericity. According to relevant literature, both a KMO value of 0.6 or higher and a significant Bartlett's test of sphericity ($p < 0.05$) suggest a good factor analysis (Tabachnick & Fidell, 2007). Principal components with varimax rotation factor analysis revealed seven factors with an eigenvalue of greater than 1.0 which is the typical value for accepting a factor according to Kaiser's criterion. This seven-factor solution explained satisfactorily 53.72% of the total variance, which is comparable to many similar studies (for example, 52.33% in Gatfield (2000)). Factor loadings, indicating the correlation coefficients between the variable and factors, of less than 0.300 (some scholars such as Raubenheimer (2004) suggest 0.400) are considered low and thus were excluded from the analysis since they provide the least meaning (in an interpretation sense) to the factor solution; as a result, two questions were eliminated. All variables included in the factor analysis were tested for reliability with the utilisation of Cronbach's alpha. The overall reliability of the 62 items integrated in the factor analysis, is 0.966, whereas the reliability of the seven retained factors ranges from 0.657 to 0.931; all, but one, within the parameters of the widely acceptable level of reliability 0.700 (Nunally & Bernstein, 1994). The authors acknowledge that on Factor 7, named the 'Competencies of lectures and students', the reliability score was slightly lower than 0.700, nevertheless, it was decided to retain it due to its explained context (Table 2).

Respondents (both students and teaching staff) were asked to rate how important the determinants of quality were to them as far as defining the quality of a higher education

TABLE 2. Summary of factor analysis (varimax rotation with Kaiser normalisation) and descriptive analysis ($n = 595$)

Factor	Eigen-value	% variance explained	Reliability Cronbach's α	Mean	SD	Overall rank
Factor 1: Teaching and learning facilities (11 items)	21.051	32.893	0.931	3.45	0.525	3
Factor 2: Student examination and assessment (15 items)	3.660	5.719	0.908	3.41	0.490	5
Factor 3: Teaching and learning issues (12 items)	2.525	3.946	0.890	3.46	0.642	2
Factor 4: Buildings and general facilities (7 items)	2.394	3.741	0.864	3.36	0.596	6
Factor 5: Programmes and courses of study (6 items)	1.751	2.735	0.832	3.47	0.506	1
Factor 6: Students support services (7 items)	1.637	2.557	0.923	3.44	0.598	4
Factor 7: Competencies of lecturers and students (4 items)	1.382	2.160	0.657	3.16	0.609	7
Total scale reliability α (62 items)			0.966	3.39		
Total % explained variance		53.751				

Notes: Kaiser–Mayer–Oklin measure of sampling adequacy = 0.944; extraction method, principle component analysis; two questions were excluded because of low factor loading (less than 0.300), expectations scale: 1, not an expectation; 2, weak expectation; 3, strong expectation; 4, extremely strong expectation.

institution (this is referred to as 'importance'). Furthermore, they were asked to rate their expectations of quality on each determinant (this is referred to as 'expectations'). In addition, they were asked to rate how satisfactory they perceived the university's performance on those determinants, based on their overall experience at the university (this is referred to as 'performance'). As the use of mean values for ranking and other statistical purposes is quite acceptable (Martilla & James, 1977; Zopiatis, 2004; Chen *et al.*, 2006), mean values for 'importance', 'performance' and 'expectations' were calculated and the quality dimensions were analysed and ranked.

In response to the first research question, the factor analysis of the student and the teaching staff questionnaires led to the identification of seven dimensions of quality (Table 2). Those seven dimensions are endorsed by the two sets of stakeholders as priorities for defining quality for a higher education institution. The quality dimensions identified were the following: 'programmes and courses of study', 'teaching and learning process', 'student support services', 'teaching and learning facilities', 'student examination and assessment', 'buildings and general facilities' and 'competencies of lecturers and students'. Each of the seven dimensions identified addressed several issues as follows:

- 'Teaching and learning facilities'. Availability and access to: library facilities; study rooms; laboratories; computers; printers; software and the Internet.
- 'Student examination and assessment'. Rules and policies for examinations; uniformity of application of rules and policies by academic staff; uniformity and fairness in assessment; feedback on course work.
- 'Teaching and learning process'. Knowledge gained by students; improvement in students' problem-solving skills; teaching skills of the academic staff members; punctuality of the staff; attitude and behaviour of academic staff towards their students.
- 'Buildings and general facilities'. Appearance of the university campus; appearance of the class rooms; sports facilities available.
- 'Programmes and courses of study'. Programmes and courses offered; extent to which programmes and courses of study prepare students for employment; programme contribution to personal development of students; development and updatedness of the programmes; overlap among courses.
- 'Student support services'. Programme, registration and career advice; tutorials; counselling.
- 'Competency of the lecturers and the students'. Industry experience and research output of the academic staff; student academic performance.

The factor analysis indicated that students and teaching staff expect a quality university to address and be 'good' on these seven dimensions. Identifying the dimensions based on which students and academic staff define quality is vital for any university as it generates a conceptual framework of quality based on the stakeholders' expectations and thus an agenda for quality efforts and resource allocation.

The most striking finding is the absolute high importance rating for all seven dimensions by both stakeholders group (Table 3). Both students and teaching staff rate all dimensions more than 3 on a scale of 1–4. The high importance rating of all dimensions suggests that students and teaching staff of the university are very demanding and have very high expectations for quality from the university. This further suggests that it may be difficult for the institution to meet the expectations of the two groups given the limited resources available to the institution.

TABLE 3. Quality dimensions' importance ranking

Quality dimension	Mean	Importance ranking
Programmes and courses of study	3.48	1
Teaching and learning process	3.46	2
Student support services	3.43	4
Teaching and learning facilities	3.45	3
Student examination and assessment	3.42	5
Buildings and general facilities	3.37	6
Competency of lecturers and students	3.16	7

Importance scale: 1, not at all important; 2, slightly important; 3, important to some degree; 4, extremely important.

The quality dimensions identified and their importance agrees with the findings of other similar studies found in the literature (Harvey *et al.*, 1992; Joseph & Joseph, 1997; Clemes *et al.*, 2001; Lagrosen *et al.*, 2004; Douglas *et al.*, 2006). The *Quality in Higher Education* (QHE) project, for example, (Harvey *et al.*, 1992) revealed that based on a survey of 4000 respondents, the most important criteria of quality relate to support for teaching and learning, the course and programmes of study and student assessment. A study by Clemes *et al.* (2001) identifies campus facilities and issues relating to the teaching and learning process as the most important criteria of quality. Similarly, a study by Joseph & Joseph (1997) identified issues such as programmes and courses of study and physical facilities as significant criteria of quality. More recently, Lagrosen *et al.* (2004) identified issues such as campus facilities, teaching practices, computer and library facilities (learning facilities) and programmes of study as the most important quality dimensions. Finally, a study by Douglas *et al.* (2006) identified teaching and learning, teaching and learning support facilities and material, and ancillary facilities and services as the most important dimensions of quality. The findings of this study amount to an amalgamation of the findings of higher education literature and are, therefore, supported and validated by the aforementioned studies. This suggests that despite the unique environment of the highly-regulated private higher education sector of Cyprus, the views, opinions and expectations of Cypriot students and academic staff with respect to the quality of a university are similar to those of students and academic staff in other countries.

Further investigation of the findings identified a noteworthy difference in the importance ranking (Table 4) between students and teaching staff on four of the seven dimensions of quality ('teaching and learning facilities', 'student examination and assessment', 'student support services', 'competency of the lecturers and the students'); congruence though was identified in the other three ('teaching and learning process', 'buildings and general facilities', 'programmes and courses of study').

In addressing the second research question, the researchers, consistent with other similar studies, ensued with testing the findings based on the demographic characteristics of the respondents, such as age, school of enrolment, origin of respondent, year of study and other characteristics, in order to identify any significant differences. The findings of the ANOVA carried out for teaching staff did not reveal any statistical differences. The findings of the ANOVA carried out for students again did not reveal any statistical differences with the exception of the importance assigned to the seven quality dimensions based on one demographic variable: the school of enrolment. ANOVA findings point out that the importance

TABLE 4. Student and teaching staff importance

Factor	Quality dimension	Group	<i>n</i>	Mean	SD	<i>t</i> -value	<i>t</i> -test sig. (2-tailed)	Rank
A	Teaching and learning facilities	Students	508	3.43	0.544	-3.513	0.000	4
		Teaching staff	63	3.69	0.271			2
B	Student examination and assessment	Students	531	3.39	0.470	-4.204	0.000	5
		Teaching staff	63	3.64	0.284			3
C	Teaching and learning process	Students	532	3.45	0.411	-0.995	0.320	2
		Teaching staff	63	3.50	0.301			5
D	Buildings and general facilities	Students	529	3.36	0.511	-0.726	0.468	6
		Teaching staff	62	3.42	0.244			7
E	Programmes and courses of study	Students	525	3.46	0.503	-1.997	0.058	1
		Teaching staff	63	3.54	0.279			6
F	Student support services	Students	513	3.44	0.675	-3.309	0.001	3
		Teaching staff	63	3.71	0.268			1
G	Competency of lecturers and students	Students	528	3.13	0.584	-5.288	0.001	7
		Teaching staff	63	3.53	0.346			4

Notes: A four-point Likert scale was used for ranks: 1, not at all important; 2, important to some degree; 3, very important; 4, extremely important; when independent-sample *t*-test *p*-value < 0.05 statistical difference exists—equal variances assumed.

assigned by students to the dimension of 'buildings and general facilities' (*F* ratio 4.003; *p* = 0.019) as well as to 'student support services' (*F* ratio 3.271; *p* = 0.039) differed statistically by school of enrolment. According to the findings the importance assigned to these two quality dimensions by the students enrolled in the School of Business was greater than the importance assigned by the students of the School of Science and Engineering and that of the students enrolled in the School of Humanities. In addition, the *post hoc* Tukey analysis indicated a greater statistical difference between the importance assigned to those quality dimensions by the students enrolled in the School of Business and the students enrolled in the School of Humanities. The findings suggest that the students enrolled in the School of Business have higher expectations and assign greater importance to 'buildings and general facilities' and to 'student support services' than the students enrolled in the other two schools. This is another important finding and a valuable tool for the university administration for the allocation of the scarce resources of the institution in a manner that addresses the stakeholders' expectations.

In response to the third and fourth research questions, the findings are the following: to measure the quality perceptions of the stakeholders the expectations expressed for each quality dimension by each group was compared with their perceptions of the university's performance with that dimension. To evaluate the statistical significance of any differences, inferential statistical analysis was conducted, specifically paired sample which,

TABLE 5. Quality perception—students (paired-sample analysis and quality score)

Factor	Quality dimension	Mean EXPECT.	Mean PERFOR.	Paired-sample <i>t</i> -value	Paired-sample <i>p</i> -value	Quality score
A	Teaching and learning facilities	3.43	2.90	15.668	0.000	-0.53
B	Student examination and assessment	3.38	3.01	16.185	0.000	-0.37
C	Teaching and learning process	3.45	2.93	19.654	0.000	-0.52
D	Buildings and general facilities	3.34	2.98	11.029	0.000	-0.36
E	Programmes and courses of study	3.47	2.97	15.722	0.000	-0.50
F	Student support services	3.43	2.75	18.060	0.000	-0.68
G	Competency of lecturer and students	3.12	2.69	13.489	0.000	-0.43

Notes: $p < 0.05$, statistical difference; $p < 0.001$, high statistical difference; quality score < 0 , quality is perceived as 'low'; expectation ratings obtained from a four-point scale of: 1, not at an expectation; 2, weak expectation; 3, strong expectation; 4, extremely strong expectation; performance ratings obtained from a four-point scale of: 1, not satisfactory; 2, slightly satisfactory; 3, very satisfactory; 4, extremely satisfactory.

according to the literature (Saunders *et al.*, 2003; Hussey & Hussey, 1997), is the most widely used method for this type of analysis. At a significance level of 95% when the p -value is less than 0.05 a statistical difference exists. Furthermore, to identify whether any statistical difference identified suggests perceptions of 'ideal' or 'unacceptable' quality the 'quality score' (performance minus expectations) was determined which serves as an indicator of a stakeholders' perception of quality (Soutar & McNeil, 1996; Joseph & Joseph, 1997; Smith *et al.*, 2007). A negative quality score shows that quality is perceived as 'unacceptable'.^[1]

The overall findings from the use of the paired sample analysis indicated a high statistical difference between expectations and perceived performance on all dimensions. Since the quality score was negative (for all dimensions) the conclusion is that both groups perceive the quality of all dimensions to be 'unacceptable'

Student perceptions of quality

For all dimensions of quality there is a gap between students' expectations of quality and the performance of the university on those dimensions. The dimension perceived by students to have the lowest quality is the 'student support services' (highest negative quality score of -0.68). Other dimensions which were also perceived by students to be of low quality are 'teaching and learning facilities' followed closely by the 'teaching and learning process' and the 'programmes and courses of study'. The quality of the three remaining quality dimensions was also perceived by students as 'low' but the negative quality score was smaller and below the overall mean, indicating a smaller dissatisfaction. Those dimensions were the 'student examination and assessment', 'buildings and general facilities' and 'competency of lecturers and students' (Table 5).

Teaching staff perceptions of quality

A gap between teaching staff expectations for quality in a higher education institution and the performance of the university was also identified for all dimensions investigated (Table 6).

The findings show there is disparity between teaching staff expectations of quality and the performance of the university on these dimensions. The findings indicate that the dimension perceived by them to have the lowest quality is the 'student support services' (highest negative quality score of -1.41). Academic staff perceptions of low quality were also identified for the dimension of 'competency of lecturers and students', 'teaching and learning facilities' and 'student examination and assessment'. For the remaining three quality dimensions the perceptions are again of low quality but the negative quality score is significantly smaller and below the overall mean, suggesting lower dissatisfaction. These dimensions are the 'teaching and learning process', 'buildings and general facilities' and 'programmes and courses of study'.

The aforementioned findings suggest that both stakeholders share the same perceptions about 'low quality' on all quality dimensions investigated. For both groups, there is a gap between expectations for quality and performance and thus quality is perceived as low and dissatisfaction exists with all quality dimensions. The gaps between expectations and perceived performance need to be further addressed by the university administration, as managing quality is a matter of managing these gaps (Parasuraman *et al.*, 1985, 1988). Focus groups could be utilised, for example, to investigate the high expectations of both students and academic staff, since unrealistic or unattainable expectations will always lead to dissatisfaction and perceptions of low quality. The university's advertising strategy, recruitment, prospectus, motto for 'excellence,' and so forth need to be re-evaluated as they may lead to high expectations. The expectations of the stakeholders need to be aligned with what the university can offer or perceptions of low quality and dissatisfaction will prolong.

TABLE 6. Quality perception—academic staff (paired-sample analysis and quality score)

Factor	Quality dimension	Mean EXPECT.	Mean PERFOR.	Paired-sample <i>t</i> -value	Paired-sample <i>p</i> -value	Quality score
A	Teaching and learning facilities	3.72	2.52	15.083	0.000	-1.2
B	Student examination and assessment	3.63	2.57	14.577	0.000	-1.06
C	Teaching and learning process	3.54	2.83	8.585	0.000	-0.71
D	Buildings and general facilities	3.47	2.82	8.424	0.000	-0.65
E	Programmes and courses of study	3.52	2.50	12.412	0.000	-1.02
F	Student support services	3.70	2.29	14.278	0.000	-1.41
G	Competency of lecturer and students	3.54	2.26	14.701	0.000	-1.28

Notes: $p < 0.05$, statistical difference; $p < 0.000$, high statistical differences; quality score < 0 , quality is perceived as 'low'; expectation scale: 1, not at an expectation; 2, weak expectation; 3, strong expectation; 4, extremely strong expectation; performance scale: 1, not satisfactory; 2, slightly satisfactory; 3, very satisfactory; 4, extremely satisfactory.

	Quality Dimension	Mean Importance	Mean Performance
A	Teaching and Learning facilities	3.43	2.90
B	Student Exam. and Assessment	3.39	3.01
C	Teaching and Learning Process	3.45	2.93
D	Buildings and Gen. Facilities	3.36	2.98
E	Program. and Courses of study	3.46	2.97
F	Student Support Services	3.44	2.75
G	Competency of Lecturers and Students	3.13	2.69

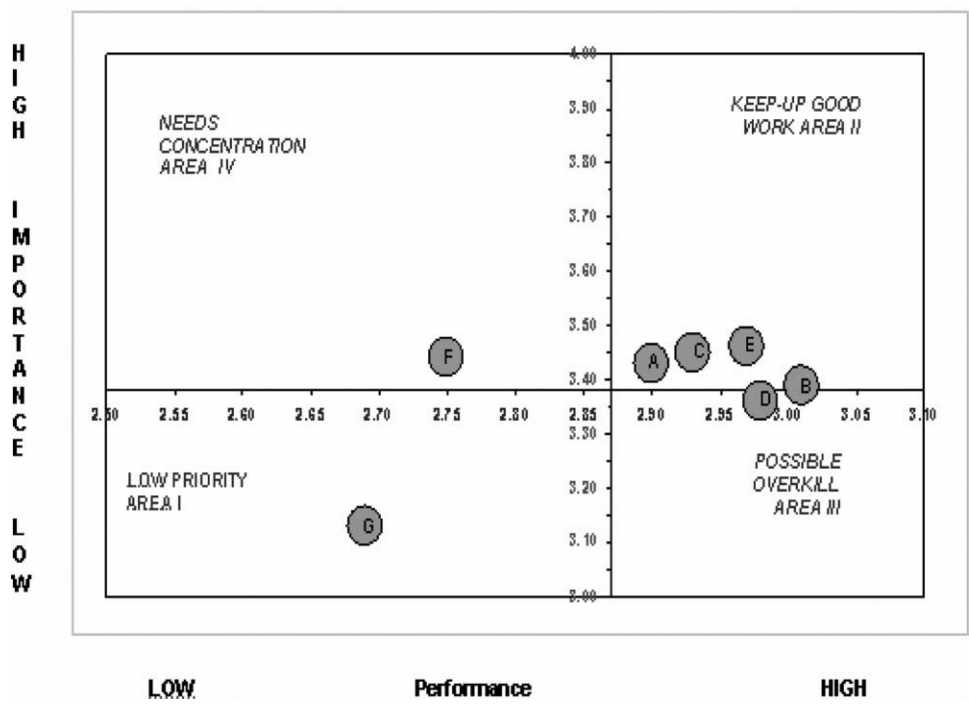


FIGURE 1. Students' perceptions of quality

The findings for the last research question were derived through the importance–performance analysis, the use of which provides the opportunity of mapping the dimensions in a manner that leads to the identification of the dimensions for which performance is good, the dimensions for which quality efforts are needed the most and even identifies where resources, time and efforts are most likely invested while they are not needed. To accomplish this the quality dimensions are separated into quadrants based on perceived performance and importance ratings (Figure 1).

Based on Figure 1, the following findings are revealed:

- Area I: 'low priority'. For the dimension of 'competencies of lecturers and students' perceived performance is low but importance is low too. This suggests that for the students and the academic staff of this institution this dimension ranks low in relative importance, despite what one might automatically assume. This should be an important consideration for the institution for its mission and strategy formulation regarding the adoption of a research or teaching orientation, as teaching ranked significantly higher in importance than research.
- Area II: 'keep-up-the-good-work'. For the quality dimensions of 'teaching and learning facilities', 'student examination and assessments', 'teaching and learning process' and 'programmes and courses of study' both importance and perceived performance is high. This suggests that for these four quality dimensions performance is satisfactory and the existing quality efforts are adequate. The university management must however ensure that the good quality of provision with these dimensions is maintained.
- Area III: 'possible overkill'. For the dimension of 'buildings and general facilities' perceived quality is high but importance is low. This suggests that students find satisfactory the performance of the university on a dimension though which ranks relatively low in importance. This suggests that the university may be allocating resources in an area which, for the students, is not a priority
- Area IV: 'needs concentration'. For the dimension of 'student support services' importance is high but perceived performance is low. The finding suggests that the perceptions of the students are of low quality for this aspect of the educational provision of the university and that dissatisfaction exists. As a result this dimension must become a priority for quality improvement efforts by the university management.

The quality perceptions of the academic staff members were also identified through the importance–performance grid, with the following results (Figure 2):

- Area I: 'low priority'. For 'programmes and courses of study' and 'competencies of lecturers and students' perception of performance is low but importance is relatively low too. This suggests that, even though academic staff members do not find very satisfactory the university's performance on this dimension it is a dimension with a relative low importance and thus an area of low priority. This is a finding that contradicts what one might assume.
- Area II: 'keep-up-the-good-work'. For the quality dimensions of 'student examinations and assessments' and 'teaching and learning process' both importance and perceived performance is high. This suggests that for these quality dimensions the existing quality efforts are adequate. However, the university administration must continuously ensure that good performance is maintained.
- Area III: 'possible overkill'. For the dimension of 'buildings and general facilities' perceived performance is high but relative importance is low. This suggests that academic staff members find the university's performance very satisfactory with a dimension that was ranked by them as relatively low in importance. The university must consider whether resources need to be reallocated to other areas where importance is higher.
- Area IV: 'needs concentration'. For the dimension of 'student support services' and 'teaching and learning facilities' importance is high but perceived performance is low. This finding indicates that these two dimensions are the areas where priorities must be set for immediate quality improvement efforts by the university management.

	Quality dimension	Mean Importance	Mean Performance
A	Teaching and Learning facilities	3.69	2.52
B	Student Exam. and Assessment	3.64	2.57
C	Teaching and Learning Process	3.50	2.83
D	Buildings and Gen. Facilities	3.42	2.82
E	Program. and Courses of study	3.54	2.50
F	Student Support Services	3.71	2.29
G	Competency of Lecturers and Students	3.53	2.26

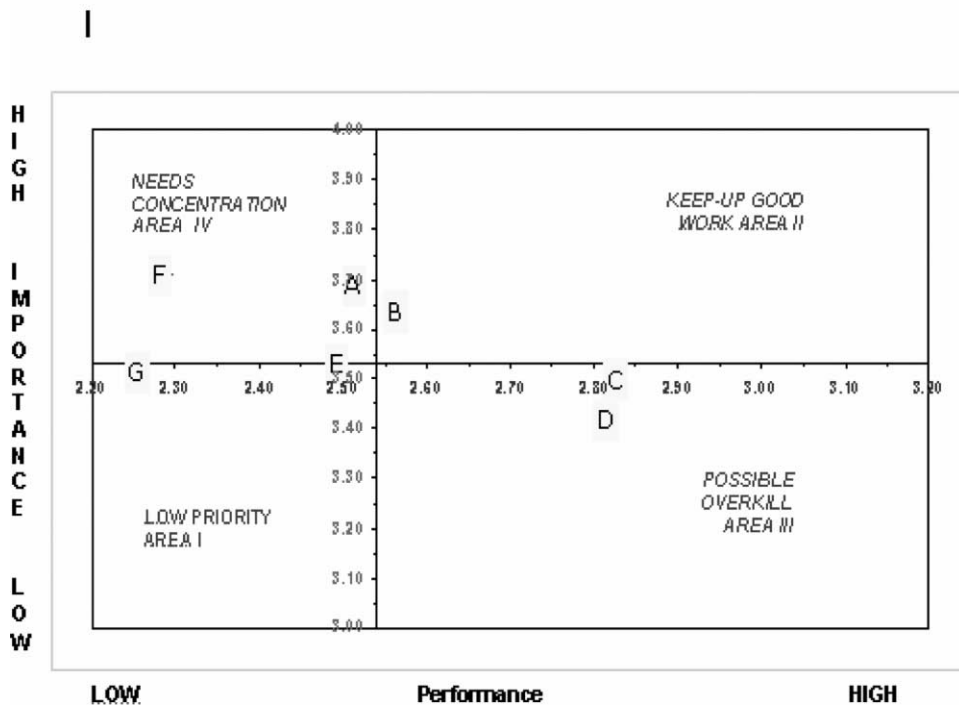


FIGURE 2. Teaching staff perceptions of quality

Prioritisation of quality efforts

A summary comparison of the findings of the importance–performance analysis for the two stakeholders reveals the following priorities for quality improvement efforts. The quality dimension that ranks first in priority for quality improvement efforts is the ‘student support services’ as it is classified as ‘needs concentration’ by both stakeholders. Next in line is the ‘teaching and learning facilities’, which is also classified as ‘needs concentration’ but only by academic staff. After that, priority for the university will be to ensure that the quality of provision of ‘student examination and assessment’ and of ‘teaching and learning process’ is maintained. ‘Buildings and general facilities’ is a dimension of ‘possible overkill’, suggesting

that resources may be wasted and, finally, 'competency of lecturers and students' is a 'low priority' and thus a dimension with which, that at present, the university should not be concerned.

Reflection and conclusions

Quality was defined by the stakeholders of the university by reference to specific quality characteristics, which were identified by them and which are classified (based on factor analysis), into the following seven dimensions: 'teaching and learning facilities', 'student examination and assessment', 'teaching and learning process', 'buildings and general facilities', 'programmes and courses of study', 'student support services' and 'competency of the lecturers and the students'. These dimensions indicate what students and academic staff expect from a 'quality' university and it is thus valuable information for university managers, as it may serve as a conceptual framework of quality. The dimensions of quality identified may be used by the university administrators as guidelines for quality improvements, resource allocation, as well as for the development of policies and practices that will lead to quality improvements.

The importance rankings of those dimensions were not affected by demographic variables, except for the importance ranking by school of enrolment (for students only). Both students and teaching staff assigned high importance to all of the quality dimensions investigated, expressing thus high quality expectations on all quality dimensions investigated. The perceived performance of both students and academic staff with the quality dimensions investigated was low (less than 'very satisfactory'). The stakeholders' perceptions of quality were determined based on the comparison of the expectations assigned to a dimension with the perceived performance on that dimensions. The findings revealed dissatisfaction and perceptions of 'low' quality on all dimensions. The dissatisfaction and perception of low quality were the result of the high expectations assigned to all quality dimensions by both stakeholders. This suggests that the university needs to address further the expectations and the importance assigned to the quality dimensions by its two key internal stakeholders and attempt to manage them. First, a university can not be 'excellent' in all dimensions, due to limited resources. Second, unrealistic expectations will always result in dissatisfaction and perceptions of low quality. This implies that there is a need for the university to re-assess its advertising, prospectus, recruitment promises, and motto for excellence, as a tool for managing those expectations.

The use of the importance–performance grids enabled the researchers to categorise the quality dimensions investigated in a manner that identifies and prioritises those dimensions according to the need for quality efforts. The results provide valuable information about the strengths and the weaknesses of the educational provision at the university. The use of this grid provides the opportunity of identifying the dimensions for which performance is good, the dimensions for which quality efforts are needed the most and even identifying where resources, time and efforts are most likely invested while they are not needed. This information is precious for the development of appropriate quality-related strategies by the university administrators. A comparison, for instance, of the two charts which depict the relative strength of importance and perceived performance for the two stakeholders offers interesting issues for management. The different intensity of the two groups is an important issue that may reveal the greater knowledge of education held by the academic staff or their greater preparedness to compare the existing institution with those they had previously worked or studied at. This in itself might create an unrealistic focal point given the resources

of Cyprus and might be worth greater investigation particularly as the teaching staff's own attitudes are likely to influence those of their students.

Turning now to the specifics of the seven quality dimensions mapped on the two importance–performance matrices:

Teaching and Learning Facilities

Students see these as relatively important and find the university's performance more satisfactory than say student support services and competency of lectures. This indicates a matching of expectations of what is required in a university from the customers' perspective. This view is not shared by teaching staff as, for them, this dimension is much more important than others and it is one for which they do not find the university's performance satisfactory. For instance, they perceive their performance with their own teaching and learning process to be more satisfactory. Of course academic staff might be evaluating different aspects of the environment, such as lecture theatres and laboratories available for student use. A phenomenological approach to the issue of how both see their 'world of academic work' might be undertaken in an attempt to understand this issue.

Student Examinations and Assessment

For students this dimension is surprisingly relatively low in importance and they find the university's performance with how it is conducted satisfactory. This view is not shared though by those who do the assessment! Although the importance of this dimension is much the same relative to other attitudes, teaching staff are less satisfied by its delivery. This would suggest a review of the assessment procedures is warranted unless the university management is happy that they are providing to the needs of the students' rather than the academic rigour of the academics.

Teaching and Learning Process

This dimension would seem to be central to the needs of the students and they seem relatively satisfied with the university's performance on this important attribute. The delivery of these services seems to be more important for staff who find their own performance and delivery of the services to be less satisfactory.

Building and General Facilities

Response to this attribute is similar in both groups, as it is rated by both students and academic staff as average in importance and satisfactory in performance. As a result this dimension ranks low in priority for quality efforts.

Programmes and Courses of Study

For students this has the best relative performance perception of all seven attributes. This is clearly an important finding for the institution leading to satisfaction for its core provision to students. However the same satisfaction is not shared by the teaching staff. Given the Cypriot method of accrediting programmes by the Education Ministry it may reflect lack of

control. Indeed its average position may reflect this lack of influence on what is taught once the programme has been accredited.

Student Support Services

These are very important for students and for academic staff and both groups are relatively dissatisfied with the university's performance. This is an issue that clearly needs attention and together with the building and facilities are the only two on which both stakeholder groups have the same relative perception.

Competency of Lecturers and Students

This is another area that both stakeholder groups rate relatively low in importance and perceptions of performance. This finding is contrary to what most would expect, regarding the importance assigned to the competencies of the teaching staff and the students. The finding deserves greater interrogation to see why importance is relatively low and if students are dissatisfied with lecturers and lecturers with students or if there is a more evaluative process underway in the institution.

Conclusions

The findings on student and faculty mapping of the dimensions of quality suggest different stakeholder worlds and set the management of the college with a real issue in the prioritisation of where to start to improve performance, match expectations and increase satisfaction levels. The two groups of stakeholders' importance–performance perceptions for the most part do not overlap. This in itself is a useful finding for the management to consider in building a successful learning community. The main implication for higher education institutions is for senior managers to develop strategies that will meet stakeholders' expectations of service quality and to create a culture of quality and satisfaction in academic staff so they positively influence students.

In previous studies (Lagrosen *et al.*, 2004; Douglas *et al.*, 2006, Petruzzellis *et al.*, 2006), it was suggested that further research was needed on the subject of quality in higher education. The contribution of this study is that the findings not only support but supplement and enhance other similar studies. First, the study attempts to overcome some of the limitations of previous studies, such as restriction of the survey to students only or to the students enrolled in one school only, or even to first-year students only. Second, the results show that Cypriot students and academic staff behave in a very similar way to their counterparts in other countries and this might be of significant interest to higher education institutions in other countries especially those with private institutions of higher education. Third, and most important, it proposes a pragmatic framework for quality, by combining both importance with performance, and thus suggests a way to map the main areas for policy and decision making that will lead to the enhancement of the quality of the university. This pragmatic quality management framework can serve as a reference for other institutions. This is the primary contribution of this study.

A limitation of this study is that any congruence or gaps in the definition and perception of quality between students of private versus public universities were not investigated. This may be the purpose of a future study.

It is hoped that the study can serve as reference for similar studies by other higher education institutions and that the results will be applicable, at least to some extent to other universities.

Note

- [1] Editorial note. This process, although adopted in some studies, is seen by other commentators as subtracting scores that lie on two different dimensions and is thus misleading. The negative score that invariably arises is not, it is argued, indicative of low quality. Publication of this paper does not mean that the Journal endorses this methodology.

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