ASSESSING SERVICE QUALITY IN SCHOOLS OF BUSINESS: DIMENSIONS OF SERVICE QUALITY IN CONTINUING PROFESSIONAL EDUCATION (CPE)*

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Abstract

This paper reports the results of a study on service quality in a business school. We examine the concept of service quality with data collected from 205 executive students. The results obtained from applying exploratory factor analysis to our data suggest that the theoretical factor structure consisting of five factors could not be empirically replicated. The empirical factor structure consists of four factors (tangibles, faculty, administration, and reliability-empathy) being reliability-empathy the most important dimension for professional students. Confirmatory factor analysis results provide strong support for the four-dimensional structure of service quality in a business school setting.

INTRODUCTION

Service quality is a feature of the literature in marketing and operations management, but is just starting to gain attention in higher education. Stern and Tseng (1993) reported that few business schools have adopted a service quality philosophy. Earlier research has demonstrated that consumers are reluctant to complain about poor professional service (Gronhaug and Arndt, 1980), but these same consumers are becoming increasingly more value conscious. In the current economic climate, business education (BE) and continuing professional education (CPE) programs are giving serious thought to the issue of service quality. This has come about for two reasons. The first reason is that the expansion phase in this branch of higher

education has now ended and there is real competition for students. Where there is competition, the quality of the service experience becomes an important factor in buyer decision making (Bateson, 1995). The second reason is that higher education quality assurance systems place emphasis on the student experience as one of the most important assessment criteria (Allen and Davis, 1991; Ramsden, 1991). The educational literature suggests that there is mounting pressure from the customers of BE and CPE, which include students, parents, executives, employers and even legislators, to close the widening gap between their expectations of institutional performance and the actual performance (Brigham, 1994). Therefore, it is imperative that business schools programs actively monitor the quality of their services and commit to continuous improvements in an effort to respond to the needs of the institutional constituencies. A better understanding of how these customers form impressions of quality can provide valuable information to educational management for designing service delivery systems that enhance customer satisfaction (Seymour, 1992), and for adapting the education environment to the students' needs (Hampton, 1993).

We report here on a study of the determinants of service quality in a business school conducted on a sample of executive students (continuing professional education, CPE) at one private Peruvian business school.

SERVICE QUALITY: CONCEPTUALIZATION AND MEASUREMENT

Quality is one of the competitive priorities which has migrated from the literature of manufacturing strategy to the service arena. As early as 1984, Hayes and Wheelwright (1984) suggested that cost, time, flexibility and quality are competitive priorities for manufacturers in the USA and international economies. These issues gravitated quickly to the service arena where the need to define and assess quality became a dominant issue (Collier, 1990; Parasuraman *et al.*, 1985). However, measuring service quality seems to pose difficulties for academics and practitioners because of the unique characteristics of service: intangibility, heterogeneity, inseparability and perishability. It is indeed an elusive and indistinct construct (Parasuraman *et al.*, 1985). However researchers have attempted to conceptualize and measure service quality.

The contributions and discussions center around the SERVQUAL scale created by Parasuraman *et al*. (1985, 1988). Parasuraman *et al*. conceptualized service quality as a gap between consumers' expectations and perceptions and suggest that service quality can be measured using SERVQUAL, a scale composed of five dimensions. SERVQUAL has been widely used by both academics and practitioners in various services industries, including education (Rigotti and Pitt, 1992; Hampton, 1992). Therefore, it is not an exaggeration to suggest that SERVQUAL has been and is the dominant model in service quality research. However, in spite of the popularity enjoyed by this scale, some studies have questioned its basic conceptualization and consequently the gap approach as an appropriate operationalization of the service quality construct (Carman, 1990; Finn and Lamb, 1991; Babakus and Boller, 1992; Brown *et al.*, 1993; Cronin and Taylor, 1992, 1994; Teas, 1993, 1994). Theoretical and

operational criticisms to SERVQUAL have been summarized by Buttle (1996). From a theoretical point of view: (i) SERVQUAL has been inappropriately based on a disconfirmation model rather than an attitudinal model of service quality (Cronin and Taylor, 1992, 1994), (ii) the P-E operationalization has been questioned because there is little evidence that customers assess service quality in terms of P-E gaps. Some authors argued that customers' assessments of continuously provided services (so as educational services) may depend solely on performance (Oliver, 1989; Cronin and Taylor, 1992); (iii) SERVQUAL has been also criticized for focusing on the process of service delivery rather than outcomes of the service encounter, and (iv) critics have raised significant questions about the psychometric properties of the SERVQUAL scale. The most serious are concerned with the number of dimensions, and their stability from context to context. From the operational point of view: (i) the more fundamental criticism is that expectations play no significant role in service quality; (ii) respondents appear to be confused by the administration of expectations and perceptions versions. In addition, performance based measures of service quality were found to be better for measuring the service quality construct (Cronin and Taylor, 1992). To judge from the articles published in 1994 (Parasuraman *et al,* 1994; Cronin and Taylor, 1994; and Teas, 1994), the debate on SERVQUALs' validity, the conceptualization and operationalization of a service quality measure, as well as its relation with consumer satisfaction, are topics still in force and controversial in the service quality literature. These criticisms indicate that there is still a need for fundamental research.

CONTINUING PROFESSIONAL EDUCATION, CPE

Business school's CPE programs provide advanced management training to highly motivated, and experienced executives, and middle managers. Companies have relied heavily on these programs to develop their executives and middle managers in specific functional areas, such as accounting, marketing or finance, and also in broader policy-related issues. The basic focus behind all of these programs, whether university-based or in-house, is on the individual development of executives and middle managers, in new technologies and practices for improved performance on current assignments and in preparation for future positions. On the whole, non-degree management development tends to be short in comparison with the traditional two-year MBA degree.

Evaluation of the education students receive has long been an area of concern to researchers and institutions (Cashin, 1990). Most educational institutions require it of their academic staff to evaluate their performance. Serious educational programs have recognized evaluation's importance in being able to assess the quality of the service they deliver, to manage it, to improve it (Rigotti and Pitt, 1992). Generally, student evaluation of courses is carried out using a range of questionnaires developed by unit and course leaders. These are considered functional, but it could be argued that they might be misleading as no research has been carried out into their reliability. Certainly the results are often very different from one year to the next. Even if such instruments are reliable, they have little validity for decision making about course delivery (Gibbs, 1995). However,

the literature on student learning reveals the use of well-validated instruments: the classroom environment scale (CES), my class inventory (MCI), the individualized classroom environment questionnaire (ICEQ) (Hattie and Watkins, 1988); the college student experiences questionnaire (CSEQ) (Pike, 1993); the course perception questionnaire (Entwistle and Tait, 1990) and the student evaluation of education quality (SEEQ) (Marsh and Bailey, 1993). Although these questionnaires all measure the student experience, there is considerable diversity in the range of constructs used. Additionally, these constructs only cover the teaching side of the educational experience.

Business schools are not only in the business of teaching service management, they are by definition also in the business of providing service in all its dimensions. The main target markets are under-graduate and post-graduate students and managers as participants on professional educational programs[1]. These customers not only receive the service they ostensibly pay for –a degree or professional development course– they are also at the receiving end of kept or broken promises, friendly or unfriendly systems, helpful or unhelpful staff, and physical facilities which may be wonderful or dreadful. If management education is viewed as a service –essentially intangible, heterogeneous, and inseparable from the provider– the service quality measurement tools seem eminently suited to at least offering further insights into the evaluation process.

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1   Continuing professional education CPE, for the purposes of this paper, focuses on the development of employees, managers, or executives at different levels within an organization.

Four studies report the use of service quality measures in an educational setting. McElwee and Redman (1993) report on some of the insights obtained in a preliminary investigation of quality in a university business school using upward appraisal. Their work demonstrates how the SERVQUAL model, developed for application within the financial services sector, has been redesigned to measure those components of service in higher education which generate student (customer) satisfaction. Rigotti and Pitt (1992) used a slightly modified version of the SERVQUAL instrument to measure service quality of MBA and executive development programs at a business school. Their results allow them to conclude that even though some modifications to SERVQUAL will need to be made, the reliability and validity of the instrument for use with the education services industry seems to be acceptable. On another study, Hampton (1993) presents the results of a study on service quality in a professional service, higher education. They used a survey containing 45 attributes that appear to contain statements similar to the dimensions of the SERVQUAL instrument. They report that the notion of gaps as presented in the Parasuraman, Zeithaml, and Berry model of service quality is a straightforward approach to identifying important service quality aspects of university education. Finally, LeBlanc and Nguyen (1994) examine the concept of service quality in business education. Literature review and focus groups allowed them to develop a 38-item questionnaire that they used in their study. Agreeing with Carman's critics they captured both expectations and perceptions of the service in one administration. They asked the respondents to evaluate to which degree the quality of the service

offered by the business school corresponded to their expectations on the variables related to the service. Their exploratory study identify seven factors that influence customer evaluations of service quality being reputation the most important. *Table 1* shows the dimensions of service quality in different educational settings.

THE CONCEPTUAL MODEL

The design of quality measures for educational service providers should be based on the reviewed past research and on characteristics of the service itself. Such attempt should lead us to a better understanding of the construct and to the adaptation of quality improvement programs that correspond to service company needs. Dependable measures of service quality for specific service industries are a viable research strategy to pursue (Zeithaml, 1988; Carman, 1990; Finn and Lamb, 1991; Cronin and Taylor, 1992; Brown and Koenig, 1993). The alternative conceptualizations of the service quality construct in the educational service literature provide the elements to develop a conceptual framework for assessing service quality of business school's CPE programs. The conceptual model used in this study is outlined in *Figure 1*.

Physical evidence (facilities, equipment, appearance of personnel, and communication materials) provides representations or images that customers will use to evaluate quality (Zeithaml and Bitner, 1996). Cues from the physical surroundings are indicative of the service firm's capabilities and the quality of its services (Bitner, 1990, 1992). The customer interacts with the tangible aspects of the service and forms impressions of the service quality of the firm (Eiglier and Langeard, 1987). Physical evidence has therefore a strong influence on the perceived quality of the educational service encounter.

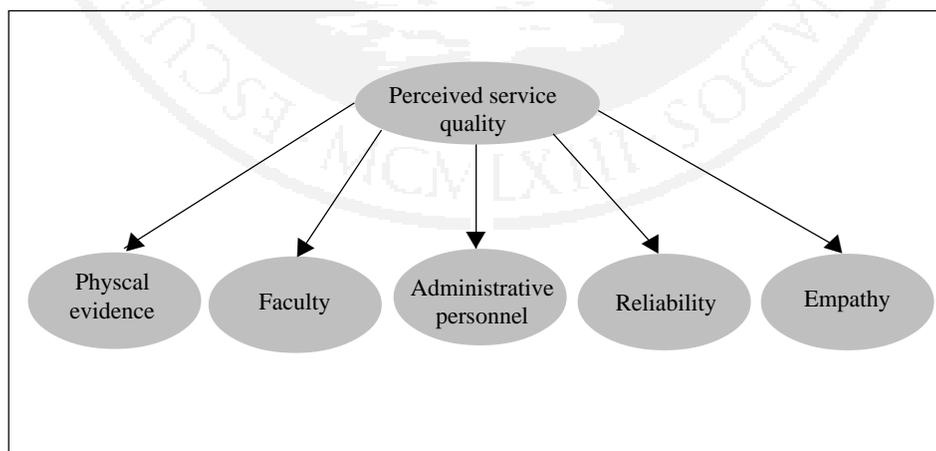**Figure 1: PERCEIVED SERVICE QUALITY IN A CPE SETTING**

Table 1
SELECTED DIMENSIONS OF SERVICE QUALITY IN AN EDUCATIONAL SETTING IN PAST RESEARCH

Hampton, 1993	LeBlanc and Nguyen, 1994	Rigotti and Pitt, 1992	Entwistle and Tait, 1990
• Quality of education	• Contact personnel: faculty	• Tangibles	• Standard of organization
• Teaching	• Reputation	• Reliability	• Appropiateness of assessments and quality of feedback
• Social life-Personal	• Physical evidence	• Responsiveness	• Relevance of assessments to the course material
• Campus facilities	• Contact personnel: administration	• Assurance	• Tutor enthusiasm and style of delivery
• Effort to pass courses	• Curriculum	• Empathy	• Relevance and interest of the material to the student
• Social life-campus	• Resposiveness		• Extent to which tutor is interested in the individual student
• Student advising	• Access to facilities		• Explanation, context setting and discussion of unit material
			• Difficulty, pace and quantity of workload
			• Willingness to allow and encourage class group interaction.

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The performance of contact personnel and the personnel-customer interactions that take place during service delivery are deemed to be important indicators of quality (Surprenant and Solomon, 1987; Eiglier and Langeard, 1987). The quality of interpersonal relationships in a professional setting is crucial in complex services (Crosby *et al.*, 1990) as in the dynamics of CPE (LeBlanc and Nguyen, 1994). Agreeing with LeBlanc and Nguyen (1994) we consider two types of contact personnel: faculty and administration. Faculty is in a key position to influence customers' perceptions of service quality. Professors are expected not only to be academically dependable and effective but also to exhibit exemplary attitudes and behavior with students so that student experiences with service are to their satisfaction (LeBlanc and Nguyen, 1994). Students attending a business school not only receive the educational training service they pay for. They also experience procedures of efficient or non-efficient administrative staff. Impressions of service quality may be affected by contact personnel other than academics.

Ability of professors to recognize students as customers with particular needs is particularly important in executive education. Middle managers needs are basically instrumental. Faculty must be able to switch from an MBA course setting to a more empirical and personalized approach in order to meet expectations. Professionals attending executive educational programs need provision of the service at convenient times. Thus, empathy (Parasuraman et al., 1988) is an important dimension of perceived quality in CPE programs.

Reliability is performing the service right the first time (Parasuraman et al., 1988). Students and specially middle managers expect that the teaching experience will be dependable. They are paying, and willing to receive what they have been promised to receive, is the core service in CPE. Concepts and practical implications are spread during the teaching service encounter to not always convinced audiences. Dependable performance of faculty in the teaching service encounter – teaching concepts and asking questions– is expected. This dimension is related to the core service.

RESEARCH METHODOLOGY

Sampling and data collection

We solicited anonymous responses to a questionnaire given to CPE students in a Peruvian private business school. Questionnaires were administered during the first three weeks of April 1998. The selected school is one of the most prestigious in Peru providing teaching, research, and consulting services. In greater detail the various services offered by this school include seminars, tailor-made executive programs, CPE, an MBA degree (for full time and partial time students), research, and consulting.

Data were gathered from students of two CPE programs. Surveys were hand-delivered to all students participating in courses in the Program for Executive Specialization (PEE) and in the Advanced Management Program (PADE). Two hundred and five executive students participating in several courses of these two programs accepted to participate in this study. Students were given verbal and written instructions, and completed the

questionnaire during the last fifteen minutes of class, resulting in a 100 per cent response rate.

Convenience sample was deemed appropriate because the purpose of the study was not to provide point and interval estimates of the variables, but to explore the relationships among them, and thus is adequate for this purpose (Calder *et al.*, 1981). Responses were gathered on the perceived service quality of the business school.

Measure instruments

The literature review along with interviews held with faculty members provided the basis for constructing our conceptual model and for developing the questionnaire used in this study.

The survey instrument contained 32 variables related to different dimensions of the business school's service offering, 3 variables measuring behavioral intentions and one measure of overall service quality. Items pertaining to service quality assessment were measured on a 7 point Likert scale (1 = Strongly disagree, 7 = Strongly agree). The behavioral intentions and overall service quality items were measured with a semantic differential scale ranging from 1 to 7 (questionnaire is available on demand to the first of the authors). According to recommendations made by Carman (1990) and Cronin and Taylor (1992), service quality was measured using performance-only items. The information gathered was analyzed using the factorial analysis and multiple regression techniques. The factorial analysis allowed us to identify the dimensional structure of perceived service quality. Then, the regression analysis allowed us to

identify the more important dimensions. Confirmatory factor analysis was also used to validate the factorial structure founded with the exploratory factor analysis and to assess convergent and discriminant validity of the instrument.

RESULTS

Dimensionality

Both exploratory and confirmatory factor analysis were used to assess the dimensionality of the service quality measure. During the course of the analysis, the service quality sub-scales were refined to produce an optimal set of items. *Table 2* presents the items and the factor loadings from a principal component analysis with varimax rotation. The factor program extracted four factors with an eigenvalue grater than 1,00. Seven items were eliminated from the scale because they performed poorly in the analysis. Specifically, they had low factor loadings or they had no clear loading on a particular factor.

The resulting scale was composed of nineteen items (See *Table 2*). The resultant empirical factor structure indicated that the contact personnel-faculty, contact personnel-administration, and the tangible items loaded as expected while some reliability and empathy items combined to form a fourth factor.

Factor 1, physical evidence, is loaded with items describing the tangible cues associated with business school's CPE service delivery system.

Factor 2, contact personnel-faculty includes items related to the performance of professors and their ability to inspire

	Factor 1	Factor 2	Factor 3	Factor 4
Table 2				
FACTOR LOADING MATRIX FOLLOWING VARIMAX ROTATION				
TANG2		0,764		
TANG3		0,755		
TANG4		0,764		
TANG5		0,646		
PROFS1		0,539		0,513
PROFS2				0,719
PROFS3				0,78
PROFS4				0,798
PROFS5				0,666
PERSON1			0,748	
PERSON2			0,815	
PERSON3			0,794	
PERSON5			0,705	
FIAB1	0,704			
FIAB3	0,805			
FIAB4	0,751			
FIAB5	0,736			
EMPAT2	0,711			
EMPAT4	0,579			
Eigenvalue	4,0	3,4	3,3	3,2
Cumulate explained variance (%)	21,1	39,2	56,4	73,3
Alpha	0,91	0,87	0,90	0,90

confidence. Cleanliness and neat appearance of faculty (PROF1) loads both, with the personnel-faculty items and with the other tangible cues. It appears that students who evaluated the business school service quality, perceived neat appearance of professors as a tangible cue of the service, and also as an intrinsic aspect the professor's personal image.

Factor 3 is loaded with variables pertaining to contact personnel-adminis-tration service. This factor includes variables linked to management's ability to provide personal attention to students in a professional and caring manner.

Finally, Factor 4 combines items of two theoretical different dimensions: reliability and empathy. A careful study of these six items shows that all of them refer direct to the actions of the institution as a whole. We can term this dimension reliability-empathy.

Table 3
RESULTS OF THE MEASUREMENT MODEL
(selected indicators)

Tests	Indicators
Normalized multivariate kurtosis estimate (Mardia's coefficient)	32,29 (133,04)
x^2 (p)	222,76 (0,19)
Degrees of freedom (*d.f.*)	141
$x^2/d.f.$	1,58
NFI	0,921
CFI	0,969
ROBUST CFI	0,99
GFI	0,89
AGFI	0,85
Average off-diagonal standardized residuals	0,032
RMSEA	0,056

Confirmatory factor analysis performed using EQS 5.6 (Bentler, 1995) was also used to assess dimensionality. The raw data was used as input in the analysis. The maximum likelihood estimation procedure with the Satorra-Bentler scaled chisquare was used because descriptive sample statistics and the multivariate kurtosis test statistics (Mardia's coefficients and normalized estimates) showed the distributions to be multivariate non-normal (Tabachnick and Fidell, 1996). *Table 3* gives the results of the EQS based analysis.

We first calculated the $x^2/d.f.$ ratio as a measure of fit. A $x^2/d.f.$ of 3 or 2 or less has been advocated as an acceptable level of fit for confirmatory factor models (Carmines and McIver, 1981; Wheaton *et al.*, 1977). The $x^2/d.f.$ of 1,58 is then satisfactory. The value of the NFI indicator (Bentler and Bonnett, 1980; Bentler, 1990) is above 0,90, indicating a fairly good fit. Also, because some of the fit statistics generated by the EQS (i.e., GFI and AGFI) are likely to underestimate the fit for a model for small sample sizes (Bentler, 1990; Bollen, 1990), two other measures of fit advocated as robust to sample size effects, the CFI and the robust CFI, were computed. The values of these indices, over 0,90, strongly suggest that the 4-dimensional structure founded with the exploratory factor analysis is confirmed by the data. The average off-diagonal value is 0,032 that reflects a fairly good fit to the data. Finally, 99% of the residual values fall between –0,10 and 0,10. Taking together, the findings indicate that the business school perceived service quality is a multidimensional construct that can be measured with a scale composed of four dimensions.

Internal consistency and validity

Internal consistency was measured by computing Cronbach's alpha for each multi-item scale. Reliability coefficients (*Table 2*) were uniformly above the recommended level of 0,80 (Nunnally, 1978) and compare well with reported alpha coefficients in the service quality literature (Morales *et al.*, 1998) and in consumer research (Peterson, 1994).

Validity is the most important consideration in selecting an instrument for research, it refers to the appropriateness and usefulness of interpretations or inferences made from the instrument (Leong and Austin, 1996). Basically, an instrument is valid if it actually measures what it purports to measure. The primary treat to validity of the service quality measure used in this study is construct validity.

Table 4
CONSTRUCT VALIDITY OF
SERVICE QUALITY MEASURE

Covergent validity	Average Loading	AVE	Discriminant validity	Shared variance between constructs
Tangibles	0,83	0,69	Tangibles/Faculty	0,511
Faculty	0,84	0,70	Tangibles/Administration	0,476
Administration	0,85	0,72	Tangibles/Reliability-Empathy	0,572
Reliability-Empathy	0,91	0,83	Faculty/Administration	0,501
Mean	0,86	0,74	Faculty/Reliability-Empathy	0,566
			Administration/Reliability-Empathy	0,612

Churchill (1979) suggests that convergent and discriminant validity should be assessed in investigating construct validity. Convergent validity involves the extent to which independent measures of the same construct are correlated (e.g. faculty and tangibles). Evidence of convergent validity is founded when the average variances extracted (AVE) shared between the constructs and their measures are above 0,50 (Fornell and Larcker, 1981). *Table 4* shows that AVE's range between 0,69 and 0,83 thus supporting convergent validity. Discriminant validity, refers to the degree to which measures of the various dimensions of service quality are unique. The AVE can also be used to evaluate discriminant validity (Fornell and Larcker, 1981). In this case the AVE for each construct should be greater than the shared variance between the constructs.

Table 4 shows that the largest shared variance between two constructs, 0,61 is even lower than the least AVE value (0,69 for tangibles) thus indicating evidence of discriminant validity.

Relative importance of service quality dimensions

In order to determine the relative importance of the five dimensions in influencing customers' overall quality perceptions we regress the overall quality assessment scores on the service quality scores for the individual dimensions. The results of such a regression analysis are shown in *Table 5*. The adjusted R^2 value is statistically significant, and similar to those obtained by Parasuraman *et al.* (1988). The combined dimension, reliability-empathy is the most critical dimension for executive

Table 5
RELATIVE IMPORTANCE OF THE FOUR DIMENSIONS IN PREDICTING
OVERALL CPE SERVICE QUALITY

Dimension	Stand. Coeff.	Significance Level	Adjusted R^2
Physical evidence	0,412	0,000	0,456 (p<0,000)
Faculty	0,201	0,000	
Administration	0,168	0,002	
Reliability-Empathy	0,478	0,000	

students. Tangible is the second most important dimension. A striking result in terms of the relative importance of the dimensions in predicting overall service quality is that faculty and administration are the least important dimensions for executive students. It seems that executive students take for granted the "quality" of faculty performance. This might be because of the prestige of the institution we have chosen (the selected private school is the most prestigious in Peru).

DISCUSSION

The results obtained from applying exploratory factor analysis to our data suggest that the theoretical factor structure consisting of five factors (tangibles, faculty, administration, reliability and empathy) could not be empirically replicated. The empirical factor structure consists of four factors being one of them a composition of our theoretical reliability and empathy dimensions. An examination of the empirical factor structure found in this study reveals a clear structure and a straightforward interpretation of factors. The only item that loads significantly in two factors (PROFS1) doesn't complicate the interpretation. This item measures the appearance of professors and this is perceived as both a physical evidence of the service and a characteristic of professors themselves. Thus it seems theoretically logic to found this item loading onto these two different factors. The confirmatory factor analysis results provide strong support for the four-dimensional structure of service

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ege choice is closely related to the perceived quality of the education provided by the institution (Hampton, 1993; Cook and Zallocco, 1979; Punji and Staelin, 1978; Vaughn *et al.*, 1978). Surprisingly, faculty is not the most important factor in predicting service quality for professional students. Its third position from four doesn't means that it is not important. Even small, the regression coefficient is statistically significant and its simple correlation is also significant. Therefore, while faculty is apparently one of the least important dimensions in CPE setting it is by no means unimportant.

CONCLUSIONS

Delivering quality service has become an important goal for most business schools. This study represents an important starting point in the development of valid and reliable measures of business school's service quality. It contributes to the marketing and educational literature by introducing a new measure that provides both researchers and practitioners with more specific information concerning service quality's effect on students' satisfaction with business schools services. In particular it suggests that business school CPE service quality can be measured with a four-dimension scale where reliability-empathy is the most important for professional students. In practice, the impor-

tance of this dimension points to the need for stronger management emphasis on service dependability and demonstration of personalized interest when interacting with professional students. Although the results of this study provide valuable insight into the relationship of student satisfaction with business schools services, one obvious limitation is its external validity. Since this study is based on a single business school, the generalizability of findings beyond a business school setting must be viewed with some caution. The external validity of our measure cannot be claimed until a series of follow-up studies are conducted in different business schools or educational settings.

As competition for students has escalated among business schools and universities, student loyalty has received increased attention. Since service quality and student satisfaction are important factors in retention and loyalty, it is important that faculty and business schools measure service quality and use tools of continuous improvement. "Quality is what our customers tell us it is, not what we say it is. Progress can only be determined and improved by measurement" (Coates, 1990). This study is an attempt to measure service quality.

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