International Review of Management and Marketing
Vol. 1, No. 3, 2011, pp.30-42
ISSN: 2146-4405
www.econjournals.com

An Empirical Investigation into the Construct of Higher Education Service Quality

Jaroslav Dado
Matej Bel University, Faculty of Economics
Tajovskeho 10, 974 01 Banska Bystrica / SLOVAKIA
E-mail: jaroslav.dado@umb.sk

Janka Taborecka Petrovicova
Matej Bel University, Faculty of Economics
Tajovskeho 10, 974 01 Banska Bystrica / SLOVAKIA
E-mail: janka.petrovicova@umb.sk

Dejan Riznic
University of Belgrade, Technical faculty in Bor
Vojske Jugoslavije 12, 19210 Bor / SERBIA
E-mail: driznic@tf.bor.ac.rs

Tamara Rajic
University of Belgrade, Technical faculty in Bor
Vojske Jugoslavije 12, 19210 Bor / SERBIA
E-mail: trajic@tf.bor.ac.rs

ABSTRACT: The paper addresses the issue of higher education service quality measurement and stresses the need of devising psychometrically as well as diagnostically sound measurement instruments, suitable to the context being investigated. The study builds upon the SERVQUAL scale, the inventory successfully tried and tested across a broad spectrum of service industries. Notwithstanding significant resemblance with the original five dimensions of service quality, research findings indicate six-dimensional structure of the construct of higher education service quality. Study performed on a sample of Engineering Management students reveals perceptions falling short of expectations across all of the determinants of service quality. The largest negative gap between students' perceptions and expectations has been discovered concerning the potential for future career development, whereas research findings indicate the same dimension to be the most important predictor of students' future behavioral intentions. In an attempt to inspire further interests in this field, managerial implications and directions for future research have been discussed.

Key words: higher education, service quality measurement, SERVQUAL
JEL Classifications: L84, M31

1. INTRODUCTION

Western economies have witnessed rapid growth of service sector over the previous several decades. Adding up to more than 70% of GDP in some OECD countries, nowadays services are seen as the major driver of economic growth and development. Whereas service-related jobs absorbed about 55% of work force in 1980s, more than 70% of employees in some of the OECD countries have been engaged in service-related activities at the beginning of new millennium (OECD, 2000). Due to numerous positive consequences of quality discovered in the area of physical goods manufacturing and growing importance of service industries academics and practitioners alike have exhibited considerable interest in the field of service quality measurement and improvement. Service quality has been recognized as a strategic weapon in widening the gap between service leaders and their merely good competitors. According to Heskett *et al.* (1994) internal service quality leads to employees'

satisfaction, their retention and productivity. Satisfied employees deliver valuable services to customers, which positively influences customer satisfaction and loyalty. Due to experience-curve effects customers who remain with the company can be served more efficiently. Being pleased with the service and treatment they are willing to buy additional products and services and by spreading positive word-of-mouth loyal customers bring in new ones, which ultimately affects company's future growth and profitability (Reichheld, 1996; Reichheld, 2003). Services dominate contemporary economies and the rising trend is expected to continue with the proliferation of information-intensive services.

Transition towards knowledge-based society, whereas the key strategic resource necessary for prosperity is knowledge itself, requires quality human capital. Therefore, over the previous two decades higher education service quality has gained the status of major concern among academic communities worldwide. The interests in the field have also been fueled up by prevailing trends in the area of higher education. Whereas in the past most universities served regional needs, modern technology erases geographical barriers and makes yesterday's potential entrants, such as virtual and foreign for-profit educational service providers, today's reality. In such a case, incumbent's image of high quality service provider might serve as a strategic asset, difficult for bypassing by newcomers. Besides global competition higher education has also been affected by massification and higher rates of participation (Sursock and Smidt, 2010). Massification of higher education and public purse not being able to support growing demand have brought about changes in funding formulas of higher education. Students and their families expected to assume rising share in the costs of education become more demanding consumers and call for responsible and quality provision of educational services. Today's universities find additional source of much needed revenue through tuition-paying students, usually mature students with previous work experience, who are due to time and financial constraints less tolerant of poor educational services. Thus, identifying the main factors influencing students' attitudes represents a step that all universities must take if they are to sustain their market position (Ford *et al.*, 1999:186). Australian response to calls for quality assurance and accountability has been the development of Course Experience Questionnaire, which has been mailed to every university graduate since the year of 1993. Students' feedback is expected to assist higher education institutions to enhance and improve their processes and consequently students' experience. The results of surveys are also used for ranking of academic institutions and are publicly available through more commercial material such as Good Universities Guide (Griffin *et al.*, 2003). Concerns for quality have been also expressed by academic communities constituting European Higher Education Area. They have undergone significant changes in order to harmonize educational systems which is expected to enhance international competitiveness of European system of higher education. Unlike unified Australian approach, standards and guidelines for quality assurance in European higher education systems are not intended to dictate practice or be interpreted as prescriptive and unchangeable (ENQA, 2009). Due to diversity of socio-cultural and educational traditions, aspirations and expectations of constituting parties, they are rather generic principles that provide the framework for quality assurance and enhancement. According to the standards and guidelines, provision of quality higher education services lies within the responsibility of providers of higher education whereas the interests of all the beneficiaries of higher education should be safeguarded. It is stated that all higher education institutions should be dedicated to improvement and enhancement of the quality of education, although in order to preserve academic authonomy concrete steps towards the aim have been left to the resolution of academic institutions.

Therefore, this study aims to gain deeper insights into the construct of higher education service quality. Knowledge of the attributes and dimensions that constitute the construct of quality and company's performance on those determinants is very important as a practical basis for directing quality improvement efforts. This study builds upon the SERVQUAL scale and takes into consideration students' viewpoint. By no means does it imply that the perspectives other then students' are not important for quality management undertakings in higher education context. In order to make the examination convenient, the focus on students' perspective has been chosen. The authors acknowledge the perspectives of other stakeholders of higher education, as will be highlighted in the following section. This will proceed with a detailed overview of the SERVQUAL scale and the results of its previous applications across variety of service industries. After the outline of research

methodology and results managerial implications as well as limitations of the study and directions for future research will be discussed.

2. CONCEPTUAL BACKGROUND

2.1 The Construct of Higher Education Service Quality

While there is a common agreement concerning importance of higher education service quality, among the major challenges facing today's education providers is to identify and implement the most appropriate measurement instrument. The complexity stems from considerable and up to now unresolved debates on how best to define the construct of higher education service quality (Becket and Brookes, 2006). Cheng and Tam (1997:23) claim that education quality is rather vague and controversial construct. They further argue that different people may hold various conceptions, wheareas some emphasize the quality of inputs to the education systems, others prioritize process or output quality, which add up to the multi-dimensional nature of the construct and absence of one single indicator of quality in higher education. Numerous disputes have revolved around the question whose perspective should guide quality management actions in the area of higher education. Almost two decades ago Sines and Duckworth (1994:2) claimed that it was high time for educational providers to face two facts, that they were in a competitive battle for students and that students were customers. The authors highlighted the necessity of academic institutions to investigate the practice of commercial businesses in the area of customer service and apply it in the context of higher education. This perspective is also supported by Kanji *et al.* (1999) who claim that people who pay for the service, as is the case with rising number of students who directly participate in the costs of education, should be treated as customers. In the total number of students enrolled to the first level of higher education studies in Serbia in 2009, according to the Statistical Office of the Republic of Serbia, 57,7 per cent was self-financed. In comparison with 2007, there was a rise of 8,9 per cent in number of tuition-paying students in 2008 and the rise of 17,8 per cent in 2009 in comparison with 2007. The notion of student-as-customer has originated within TQM movement, which has started to gain certain popularity among academic institutions in light of funding and management changes in higher education context. Though its basic principles, such as customer delight, people-based management, continuous improvement and management by facts, have strong common sense, educational institutions have lagged behind manufacturing counterparts in the adoption of this paradigm. Studying the practice of US, UK and Australian higher education sectors Cruickshank (2003) among barriers to TQM implementation recognizes organizational culture, academics' scepticism towards management fads and reluctance of educational communities to treat students as customers. Svensson and Wood (2007:22) claim that marketing metaphors are inappropriate in higher education sector and that the relationship between students and universities should not be treated as a customer-supplier relationship. The authors argue that money may let one purchase a car, but money alone should not let one purchase a university degree. Regarding students as customers and conducting students' evaluations of teachers and teaching practice, according to Emery *et al.* (2001), result in lowering of academic standards. Whereas in the private sector the issue of customer is clear and unambiguous, in the context of public services it is difficult to define customers and the term itself may be inappropriate. Individuals, government agencies and society as a whole may as well be regarded as customers. More often than not the interests of those diverse sets of customers are in conflict, which further complexifies the issue of addressing those requirements and proper allocation of scarce resources in quality improvement interventions (Wisniewski and Donelly, 1996). There are many beneficiaries of higher education and thus it is claimed that defining and managing quality in higher education call for less controversial term, such as stakeholders. It is clear that the interests of students and their families should not be neglected. In addition, interests of prospective employers who are looking for quality human capital should be safeguarded, as well as requirements of funding bodies seeking for good return on investments and job satisfaction of the employees of higher education sector. Society as a whole should also be taken into consideration since better-educated workforce is expected to lead to stronger economy (Srikanthan and Dalrymple, 2003; Redding, 2005). According to Harvey and Green (1993) quality is, like freedom or justice, a slippery construct. Although we all intuitively understand what quality means, it is difficult to define it. Higher education service quality is a stekeholder-relative construct. It means different things to different people and just like beauty it is in the eyes of a beholder. Although it is important to address the perspectives of diverse set of

beneficiaries, this study, due to time and financial constraints, takes into account student population as beholder of higher education service quality.

2.2 SERVQUAL Framework

Service quality conceptualization and measurement have gained the status of most debated and controversial topics in the literature of Services Marketing to date and are still considered unresolved and far from conclusive issues. Generally, various approaches have revolved around two schools of thought, European and North-American perspective. According to the former, whose representatives are Lehtinen and Lehtinen and Gronroos, service quality is a three-dimensional construct. Whereas the dimensions revealed by Lehtinen and Lehtinen (1991) on a sample of restaurant customers are physical quality, interactive quality and corporate quality, Gronroos (1984) claims that service quality dimensions can be classified as technical quality, functional quality and corporate image. However, the differences among these approaches are more of a semantic than intrinsic nature. Technical quality refers to the outcome of customer's interaction with service provider, functional quality perceptions are based on the manner of service provision whereas corporate image acts as a sort of perceptual lens, filtering customers' perceptions of functional and technical quality. Parasuraman, Zeithaml and Berry (1985), originators of North-American paradigm, acknowledge Gronroos's perspective and the importance of technical quality, but focus their future studies on functional part of customers' perceptions. Perceived service quality, i.e. the discrepancy between customer's perceptions and expectations, serves as a building block of both schools of thought. However, with few exceptions striving to reconcile these two perspectives (Brady and Cronin, 2001; Kang and James, 2004) researches have genarally been more inclined towards SERVQUAL scale and North-American school of thought.

A conceptual foundation for the SERVQUAL scale derives from extensive explorative investigation comprising customers and executives of service companies operating in the field of retail banking, credit cards, securities brokerage and product repair and maintenance (Parasuraman *et al.*, 1985). On the basis of group discussions with clients and in-depth interviews with managers of service businesses authors devised Gap model of service quality. The most important gap from customers' point of view is Gap 5, defined as perceived service quality. Gap 5 relates to the degree and direction of discrepancy between customers' expectations and their perceptions of service delivery. It is consumer's judgement about an entity's overall excellence or superiority (Parasuraman *et al.*, 1988:15). Perceived service quality is a function of differences between customers' expectations and management perceptions of those expectations (Gap 1), discrepancy between management perceptions and service quality specifications (Gap 2), differences between service specifications and actual service delivery (Gap 3) as well as discrepancy between service delivery and what was promised to customers by means of exteral communications (Gap 4). Services are considerd as acts, deeds, efforts (Rathmell, 1966), they are performances rather than objects (Parasuraman *et al.*, 1985). Due to their distinctive characteristics, such as intangibility, heterogeneity and inseparability of production and consumption, service quality cannot be measured in an objective way. Comprehensive qualitative and quantitative research conducted by Parasuraman *et al.* (1985, 1988) yielded SERVQUAL, a multiple-item scale for measuring consumers' perceptions of service quality. In its basic form the instrument comprises two sets of 22-items, relating to customers' expectations and perceptions, that measure service quality along five dimensions, reliability, responsiveness, assurance, empathy and tangibles. Reliability refers to the ability of service provider to perform the service dependably and accurately. Responsiveness relates to the willingness of service employees to help customers and provide prompt service, assurance addresses knowledge and courtesy of service personnel. Empathy relates to individualized attention service company provides its customers, whereas tangibles refers to the appearance of service personnel, equipment and physical facilities. Service quality, as perceived by consumers, stems from a comparison of what they feel service firms should offer., i.e. their expectations, with their perceptions of performance of firms providing the service (Parasuraman *et al.*, 1988:). The construct of service quality is thus operationalized as a mean difference between perceptions and corresponding expectations items. In addition, quality along each of the service quality dimensions can be assessed by calculating average difference scores on statements making up the dimensions.

According to Parasuraman et al. (1988) SERVQUAL is a concise scale that can be used for service quality evaluations across a wide variety of service industries. Many subsequent studies have invoked SERVQUAL scale, but numerous replications have failed to confirm the five-dimensional structure of service quality. Thus, dimensional instability is among major criticisms directed towards the SERVQUAL framework. Results from the study conducted by Bowers *et al*. (1994) on a sample of patients suggest that they define and evaluate health care service quality in terms of empathy, reliability, responsiveness, communication and caring. Consequently, the authors advise health care administrators to determine the attributes which are important for patients' quality evaluations and use modified version of SERVQUAL scale for future quality measurements. Evaluating hospital service quality by means of adapted SERVQUAL scale Wu *et al*. (2004) reveal the same service quality dimensions as suggested by Parasuraman, Zeithaml and Berry. Analysing service quality gaps in health care industry on a sample of recent users of services provided by five hospitals Rohini and Mahadevappa (2006) argue that SERVQUAL is consistent and reliable measurement instrument. In the study performed on a sample of business travellers in Turkey, Akbaba (2006) identified five-dimensional structure of service quality. However, the findings indicated service quality dimensions to a certain extent different in comparison with those addressed by the items of original SERVQUAL scale. The author claimed that the scale should be adapted to the specific service environment, as well as to the cultural context within which it is used. Study of IT service quality, conducted on a sample of employees of Australian university, revealed two-dimensional structure of the quality construct being studied (Kang and Bradley, 2002). The authors argue that SERVQUAL can be regarded as effective instrument for IT service quality evaluation. On a sample of customers of four different retail types Finn and Lamb (1991) examined the usefulness of SERVQUAL scale in retail settings. Results of the study do not conform to the five-dimensional structure proposed by Parasuraman, Zeithaml and Berry. The authors suggest that SERVQUAL items might not capture the essence of service quality construct in retailing. They further argue that SERVQUAL scale was developed on samples of customers of appliance repair and maintenance, retail banking, long distance carriers and credit cards, which are different than goods retailing and fall closer to pure service end on a continuum of service (in)tangibility. Finn and Lamb (1991) thus argue that customers might rely on different attributes when they evaluete pure service offers in comparison to more tangible services. Higher education however exhibits all of the distinctive characteristics of services. It certainly is intangible, since it cannot be seen, tried or tested prior to purchase. Production and consumption of educational services are inseparable and the services are mainly perishable, in spite of the appearance of modern technology. Educational services are also labour intensive and heterogeneous, quality varies among teachers as service providers and also the performance of one provider varies among classes and different circumstances. Educational services are also intensive in credence attributes, i.e. features that customers find difficult to evaluate even after service provision (Cuthbert, 1996; Owlia and Aspinwall, 1996). Calling the audience to rethink classical marketing practice and concepts Shostack (1977) argues that the more intangible market offer is, the greater the divergence from product marketing approach should be. The author stresses education as a typical representative of intangible services. Thus, unique features of higher education services lend support for the application of SERVQUAL as a generic scale devised to be used in a wide range of service categories.

In spite of numerous applications of SERVQUAL scale in variety of service settings its replications in the context of higher education have been scant. Results of the study applying modified SERVQUAL scale on a sample of Business and Management students of a UK university indicate that students' perception of service quality are shaped along three dimensions, requisite, acceptable and functional attributes (Oldfield and Baron, 2000). Wright and O'Neill (2002) applied revised SERVQUAL battery to examine the construct of on-line library service quality. Analysis performed on a sample of Australian students revealed four dimensions of quality, those being contact, responsiveness, reliability and tangibles. Examination of the construct of service quality in business education in the Middle East, conducted by Sohail and Shaikh (2004), on the basis of inventory corresponding to five dimensions of SERVQUAL scale, resulted in six dimensions of higher education service quality, such as contact personnel, physical evidence, reputation, responsiveness, access to facilities and curriculum. Studying students' and staff' perceptions in IT service quality within university setting Smith *et al*. (2007) discover four-dimensional structure of quality and conclude that SERVQUAL has many benefits as an effective measurement instrument that could help higher

education institutions to improve quality of their services. According to the authors application of SERVQUAL in the public sector can produce different factor structure in comparison with private service sector. Among the rare exceptions that replicated five service quality dimensions proposed by Parasuraman *et al*. (1988) is the study performed by Barnes (2007) on a sample of Chinese post-graduate students studying in the UK. According to the author SERVQUAL has proven to be a useful tool for measuring higher education service quality. It is argued that many service companies fail to satisfy customers' expectations not due to lack of service attitude, but simply because they fail to recognize what their customers value. It is thus important to gain deeper knowledge of the attributes deemed to be of importance to student population. What attributes constitute quality and along which dimensions Serbian students shape their perceptions of higher education service quality will be dealt with in the following section.

3. RESEARCH METHODOLOGY AND RESULTS

3.1 Sample and Data Collection

Field research has been conducted in two stages. Following the recommendations of Parasuraman *et al*. (1988) that the adaptation of scale items to specific service context is advisable, the focus of qualitative stage has been on rewording the inventory. Whereas the original version of the scale contains a number of items with general nouns such as „employees“, qualitative study began with their substitution with more specified nouns „professors“, in order to make the statements relevant for student population. Translation of the scale into native language of respondents, altogether with initial rewording and back translation, preceded group discussions with students. Students of bachelor course in Engineering Management at small state faculty in Serbia participated in the study. They were initially asked to comment on the construct of higher education service quality. Findings indicated that students had vague perceptions of the construct. Although they were able to articulate what they expect as a result of the process, they obviously lacked clear opinion of what should be expected of a process itself. As one of the participants at first year of studies put it „Never before have I been a student nor have I studied somewhere else to know what I should expect now“. After they have been presented with the reworded version of the scale students agreed that all of the statements addressed the process itself, but were not of equal importance for their service quality evaluations. However, group discussions revealed certain attributes referring to the outcome of higher education that have not been included in the original version of the scale. Those attributes were related to graduates' capability for practical application of knowledge, gaining good foundation for future career development, competence to work in leading global companies and competence for higher-level studies at leading universities abroad. Thus, reworded original version was supplemented with four additional items. Group discussions proceded with quantitative research.

In order to make the study as representative as possible sample comprising students of all years of undergraduate studies have been included in the analysis. Data collection was performed in co-operation with teaching staff whose permission was sought to utilize twenty minutes of their lecture time. Objectives and rationale of the study were explained in brief to to the students and they were asked to indicate their level of agreement with two sets of statements, expectations and corresponding perceptions statements included in the modified version of SERVQUAL self-complete questionnaire. In addition, students were asked to rate their overall perception of service quality and behavioral intentions, in line with the measures proposed by Zeithaml *et al*. (1996). Respondents were asked to indicate their willingness to recommend the faculty to friends and family members and to imagine themselves into the situation of choosing faculty again and then indicate how likely they would be to choose the same higher education service provider. Responses were collected on a 7-point Likert-type scale ranging from Strongly disagree (1) to Strongly agree (7) with no description for the points between the opposites of the scale. Participation in the survey which was both voluntary and anonymous, altogether with the explained personal approach, resulted in high response. In total, 261 respondents participated in the study. Statistical Package for the Social Sciences v. 18 was used for data analyses.

3.2 Reliability and Validity Analysis

In line with the purpose of this study and following Churchill's (1979) paradigm for developing better measures of marketing constructs, the focus of the analyses at first was on underlying dimensionality, scale's reliability and construct validity. Investigation into the construct of

higher education service quality calls for reduction of larger number of observable variables to a smaller number of underlying factors and thus principal component analysis was performed on gap scores of quality attributes. However, prior to the analysis factorability of correlation matrix of manifest variables was tested by means of Bartlett's test of sphericity and Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy (Hair *et al*., 2009). Bartlett's test of sphericity tests the null hypothesis that correlation matrix is an identity matrix, i.e. the variables are not correlated among themselves in which case factor analysis would not be an appropriate method. Bartlett's test yielded a value of 2820,786 and associated level of significance less than 0,001. Thus the null hypothesis was rejected. Lower bound of KMO measure to proceed with factor analysis should be 0,5. In this case test revealed KMO measure of 0,877; indicating meritorious degree of common variance among the variables. Principal component analysis with varimax rotation was carried out on a total sample. All communalities were higher than 0,4 attesting to reliability of the indicators. In line with Kaiser's rule factors with eigenvalues greater than one were extracted and subjected to rotation (Hair *et al*., 2009). Absolute values of factor loadings less than 0,40 were suppressed. Analysis yielded six factors of higher education service quality which account for 60 per cent of the variation in the data. Rotated component matrix summarized in Table I reveals clusters of items, implied by factor loadings, which differ from the *a priori* clusters, i.e. five generic dimensions of service quality proposed by Parasuraman *et al*. (1988). This pattern suggests a reconfiguration of 26 service quality attributes into six dimensions. Coefficient alpha, according to Churchill (1979:68) should be the first measure one calculates in order to assess the quality of the instrument. It tests the homogeneity of the items making up a construct, i.e. the extent to which a set of items is consistent in what it intends to measure (Cronbach, 1951). The coefficient takes values from 0 to 1, its widely acceptable cut-off value is 0,70; although lower tresholds such as 0,60 are deemed acceptable in exploratory studies (Hair *et al*., 2009). Reliability coefficients calculated for the perception-minus-expectation scores of items representing newly discerned factors range between 0,607 to 0,904 and indicate acceptable internal consistency of the sub-scales. Two factors with the least number of items have somewhat lower alpha scores which indicates the need to add items to the scale in future studies. Cronbach's alpha coefficients are represented within brackets in Table I.

In accordance with factor loadings the following labels were imputed to new dimensions: career prospects (F1), care for students (F2), tangibles (F3), understanding of students (F4), assurance (F5) and timeliness (F6). Since internal consistency is said to be necessary, but insufficient condition for construct validity (Churchill, 1979) it was necessary to test construct validity before further analyses and drawing conclusions on the basis of new dimensions. Construct validity pertains to the extent to which a scale fully and unambiguously captures the underlying construct it is intended to measure (Parasuraman *et al*., 1988:28). Face validity is rather subjective criterion which relates to the meaningfulness of the scale's items to the context in which it is applied. Group discussions with students as well as discussions with teaching staff provide support for the scale's face validity. However, it's worth noting that some distinctions appeared in students' and staff' attitudes. Whereas teaching staff recognize scientific research as one of the most important antecedents of higher education service quality and basically as a *raison d'etre* of universities, professors' scientific results were not of primary interest to students. This obviously points out to the different views and calls for bringing into line diverse expectations of stakeholder groups. Unlike face validity, which is necessarily assessed qualitatively, convergent and discriminant validity were assessed empirically by examining correlation coefficients between service quality dimensions, overall perception of service quality and students' behavioral intentions. Correlation matrix is summarized in Table II.

Convergent validity relates to the similarity, i.e. convergence between the measures that should theoretically be similar, whereas discriminant validity refers to the distinctiveness of two conceptually similar constructs (Hair *et al*., 2009). Correlations among service quality dimensions and linkages between the dimensions and overall rating of service quality which are uniformly higher than cross-construct correlations, i.e. associations between service quality dimensions and behavioral intentions provide support for discriminant and convergent validity, and hence construct validity of the scale. Results of factor analysis, summarized in Table I, reveal that service quality dimensions discovered in this study do not correspond to generic service quality dimensions, i.e. assurance, responsiveness, empathy, reliability and tangibles.

Table I. Rotated component matrix and reliability coefficients of quality dimensions[a]

	Components					
	F1	F2	F3	F4	F5	F6
Career	(0,904)					
G_{50-24}	,844					
G_{51-25}	,832					
G_{49-23}	,831					
G_{52-26}	,750					
Care		(0,790)				
G_{27-1}		,676				
G_{36-10}		,672				
G_{28-2}		,611				
G_{31-5}		,576				
G_{37-11}		,513				
G_{43-17}		,488		,436	,444	
Tangibles			(0,766)			
G_{39-13}			,752			
G_{33-7}			,735			
G_{38-12}			,728			
G_{34-8}			,541			
G_{35-9}			,471			
Understanding				(0,763)		
G_{40-14}				,714		
G_{42-16}				,629		
G_{41-15}				,627		
G_{47-21}	,421			,538		
G_{48-22}	,431			,526		
G_{46-20}				,523		
Assurance					(0,607)	
G_{45-19}					,761	
G_{44-18}					,641	
G_{32-6}					,499	
Timeliness						(0,654)
G_{30-4}						,793
G_{29-3}						,746
Eigenv.	3,579	2,896	2,889	2,825	1,815	1,663
% of Variance	13,767	11,138	11,113	10,865	6,981	6,397
Cumulative %	13,767	24,905	36,019	46,884	53,865	60,262

[a]Numbers within brackets are reliability coefficients; The grouping of expectation items in the *a priori* categorization of the instrument was as follows: Assurance (Q1, Q6, Q18, Q19); Responsiveness (Q2, Q4, Q16, Q17); Empathy (Q5, Q8, Q20, Q21, Q22); Reliability (Q3, Q10, Q11, Q14, Q15); Tangibles (Q7, Q9, Q12, Q13) and additional dimension (Q23, Q24, Q25, Q26)

Literature review indicates that numerous replication studies have also failed to conform to five-dimensional structure of the construct. Other researchers have reported factor structures varying from single to sixteen service quality factors (Ekinci *et al*., 1998:63). However, there are certain similarities between newly discovered and generic dimensions. Three out of four assurance items load significantly on the same factor, whereas first item a priori classified into assurance group loads heavily on second factor, together with responsiveness, empathy and reliability items. In the study of Parasuraman *et al*. (1991:440) responsiveness and assurance dimensions show considerable overlap and according to previously mentioned authors numerous replication studies imply even greater overlap among responsiveness, assurance and empathy.

Table II. Correlation matrix

	Career	Care	Tang	Unders	Assur	Time	OSQ	BI
Career	1							
Care	,439**	1						
Tang	,466**	,419**	1					
Unders	,407**	,535**	,571**	1				
Assur	,410**	,487**	,409**	,524**	1			
Time	,210**	,301**	,334**	,427**	,239**	1		
OSQ	,468**	,316**	,319**	,335**	,365**	,224**	1	
BI	,248**	,124*	,175**	,166**	,176**	,059	,400**	1

** Correlation is significant at the 0.01 level (2-tailed)
* Correlation is significant at the 0.05 level (2-tailed)

Three out of six items comprising F4 relate to empathy, which has again shown to have something in common with responsiveness and reliability. Consequently, an issue worthy of further study would be the examination of antecedence relations among quality dimensions, particularly whether empathetic behavior of professors leads to students' perceptions of responsive attitude of teachers and as a result students' impressions that their educators are reliable. An intriguing finding of the current study is also the second factor. It comprises all the *a priori* classified tangibles items plus one empathy item dealing with individual attention given to students by their professors. One plausible explanation for the relatedness of those theoretically dissimilar traits lies in the practice of the higher education institution included in the study. This faculty is a small one, dislocated from the capital and oriented toward fulfillment of regional educational needs. As such, and in line with prevailing change of higher education funding formulas, professors' attention towards students might be perceived by the students as visible as it were tangible. Faced with low promotional budget, the faculty relies heavily on positive word-of-mouth of its current students in recruitment of new ones. Whether it is living up to its students' expectations will be discussed in the following section.

3.3 Gap Analysis

In order to establish whether students' perceptions differ significantly from their expectations mean scores for expectation and perception items along service quality dimensions were calculated. Series of paired-sample t test were performed on expectation and perception scores. Significant positive discrepancy between perceptions and expectations would imply that students' expectations are exceeded, whereas significant negative difference indicates unsatisfactory service. Results of the analyses are presented in Table III.

Findings suggest that the faculty is underperforming along all dimensions which shape students' perceptions of service quality. Students are most concerned with the provision of services at the promised time and that they are informed by the professors when the services will be performed. On the other hand, professors do not behave as expected from the point of view of students. Even more disturbing from students' perspective are career prospects, according to the largest negative discrepancy. As future graduates, students expect to be competent to apply gained knowledge in practice, to be capable of finding a job and developing career in leading international companies and also expect solid foundation for prospective higher level studies at some of leading universities abroad. Closer inspection of the ratings reveals that students have rather high expectations. As for the

perceptions, although they are lower than expected, it can be noticed than on a seven-point scale perceptions do in fact fall in the range of neutral to good and even slightly higher in the case of timeliness. Therefore, an avenue worthy of further study would be examination of students' zone of tolerance, i.e. comparison of perceptions with minimally acceptable and desired expectations, and behavioral consequences of service quality.

Table III. Paired-sample t test of expectation and perception scores

	Mean Expectations	Mean Perceptions	P-I	t-value	Sign. (2-tailed)
Career	5,98	4,49	-1,49	14,618	,000
Care	5,57	4,67	-0,9	11,992	,000
Tangibles	5,36	3,90	-1,46	16,239	,000
Understanding	5,54	4,60	-0,94	11,878	,000
Assurance	5,85	5,02	-0,83	11,080	,000
Timeliness	6,22	5,22	-1	11,107	,000

N=261

Stodnick and Rogers (2008) argue that continual improvement of service quality is likely to generate higher levels of customer satisfaction and loyalty, which will manifest itself in higher retention of current student population and together with their positive word-of-mouth the ultimate effect will be decreased costs of attracting new students. Scarce resources are prevailing reality of today's higher education institutions which calls for informed choices in the area of quality improvement. Priority areas of service quality improvement for the faculty included in this study have been investigated by means of multiple regression. Behavioral intentions as dependent variable was regressed on factor scores of revealed service quality dimensions. Results of stepwise regression are summarized in Table IV.

Table IV. Model summary and coefficients[a]

	Standardized Beta Coefficients	t	Sig.
Career	,224	3,696	,000
Care	,083	1,368	,172
Tangibles	,031	,503	,616
Understanding	,072	1,195	,233
Assurance	,112	1,849	,066
Timeliness	,005	,074	,941
Adj. R Square ,047			

[a] Dependent variable: Behavioral Intentions

Findings indicate that career prospects, the dimension with largest negative gap, is the only significant predictor of behavioral intentions. As expected, this dimension is associated positively with behavioral intentions and the higher the perceptions of chances for career development, the more inclined is student population to recommend the faculty and more convinced are the students that they have made the good choice when they decided to enroll this faculty. Rather low adjusted R square value implies that there are other factors, not included in the model, which explain 95 per cent of the variation in students' behavioral intentions. Thus, future research is needed to identify additional factors that influence students' behavioral intentions. It is however worth highlighting that students'

perceptions of career prospects are actually not made on their direct experience. Since the respondents included in the study have all been undergraduate students at the moment of interviewing, and as such have not yet experienced the process of looking for a job or studying at higher level studies abroad, it would be interesting for future studies to examine the influence of expectations on perceived performance. Notably, whether high expectations, shaped by positive word-of-mouth, have negative influence on perceptions. If their perceptions are based on observing obstacles their graduate colleagues are facing in looking for a job, the question also remains as to what extent finding a good job is the sole consequence of sound academic knowledge. Are there other factors, besides academic achievement, necessary for obtaining desired employment, such as social and emotional intelligence, and if the problem lies in the lack of those skills should proper training in desired behavioral traits be incorporated in educational institutions' curricula and in what manner?

4. DISCUSSION AND CONCLUSIONS

In spite of the widespread agreement among academics on the importance of higher education service quality, a consensus on its conceptualization has not been reached yet. Consequently, the best way to measure service quality is still regarded an unresolved issue. One thing is indisputable, quality will not improve unless it is measured and appropriate corrective actions are taken. However, constrained budgets of higher education institutions call for informed choices in the area of resource allocation and therefore reliable, valid and diagnostically sound measurement instruments. This study has attempted to gain deeper insights into the construct of higher education service quality. Generic scale adapted to the context of higher education has been applied and research findings indicate six-dimensional structure of the construct. Group discussions with students revealed the importance of technical dimension of service quality, which has later been confirmed by factor analysis. Thus, this study bridges the gap between Nordic and American perspective of service quality indicating that both technical and functional attributes shape the perceptions of undergraduate students. However, it does not intend to be prescriptive and it certainly raises more questions than it gives answers. The battery used in this study should not be regarded as a final answer, but rather a good starting point for future undertakings in the area of higher education service quality management. Gathering both students' expectations and perceptions has its drawback in the length of the inventory and needed effort of the respondents to fill in the questionnaire, but it offers the possibility to spot particularly troubling areas before they become critical. Although higher education differs in comparison with commercial businesses in the way that it is not as easy for unsatisfied customer to switch the supplier, in new educational environment spurious loyalty is not an option anymore. This study reveals that students' perceptions fall short of expectations across all service quality dimensions. Probing into the causes of discrepancy would require additional qualitative research. However, one plausible explanation lays in the structure of the sample, i.e. relatively higher proportion of students attending first year of study. Secondary education environment differs substantially from university setting and expecting the same treatment would be unrealistic and a step towards dissatisfaction. However, organizing introductory courses for newcomers university administrators could help students to comprehend what is reasonable to expect and also what is the desired behavior. The latter applies to the students of all years of study, due to the specific nature of higher education and the fact that customers provide vital input into the process and thus their adeqate participation is a necessary precursor for desired outcome of the process.

The study has been performed on a convenient sample of students of one faculty. Thus, due to the very nature of the study its results should not be generalized. However, future studies should include more randomized samples of students and besides full-time students, expectations and perceptions of part-time students should be addressed also. In addition, an area worthy of further study would be dimensional stability of the construct in a cross-cultural study. The main drawback of the study is definitely its one-sided perspective. However, in order to make the study feasible the authors have chosen to focus on students' perspective only, but do acknowledge that including the perspectives of other stakeholders, such as teaching staff one would get deeper insights into potential discrepancies among students' expectations and service personnel' perceptions of students' expectations. Moreover, the study could be supplemented with qualitative studies focused on revealing potential hindrances and obstacles that prevent front-line employees in the delivery of high quality service. Measurement instrument supplemented with eventual additional items, that would be revealed during more thorough

qualitative research, would be the most useful if it were implemented on a longitudinal basis, for tracking trends in students' expectations and perceptions. Comparing expectations and perceptions of students attending different years of study could also yield additional fruitful information for better direction of quality improvement actions. Another beneficial application of the instrument would be to use it for segmentation of student population in accordance with their perceived-quality scores or the importance they assign to various service quality attributes. This and previously mentioned applications could help university administrators to reveal potentially troubling aspects of service delivery and take timely actions to bridge service quality gaps.

REFERENCES

Akbaba, A. (2006), *Measuring service quality in the hotel industry: A study in a business hotel in Turkey.* Hospitality Management, 25, 170-192.

Barnes, B. R. (2007), *Analysing Service Quality: The Case of Post-Graduate Chinese Students.* Total Quality Management, 18(3), 313–331.

Becket, N., Brookes, M. (2006), *Evaluating quality management in university departments.* Quality Assurance in Education, 14(2), 123-142.

Bowers, M. R., Swan, J. E., Koehler, W. F. (1994), *What attributes determine quality and satisfaction with health care delivery?* Health Care Management Review, 19(4), 49-55.

Brady, M. K., Cronin, J. Jr. (2001), *Some New Thoughts on Conceptualizing Perceived Service Quality: A Hierarchical Approach.* Journal of Marketing, 65, 34-49.

Cheng, Y. C., Tam, W. M. (1997), *Multi-models of quality in education.* Quality Assurance in Education, 5(1), 22-31.

Cronbach, L. J. (1951), *Coefficient Alpha and the Internal Structure of Tests.* Psychometrika, 16, 297-334.

Cruickshank, M. (2003), *Total Quality Management in the higher education sector: a literature review from an international and Australian perspective.* TQM & Business Excellence, 14(10), 1159-1167.

Cuthbert, P.F. (1996), *Managing service quality in HE: is SERVQUAL the answer? Part 1.* Managing Service Quality, 6(2), 11–16.

Ekinci, Y., Riley, M., Fife-Schaw, C. (1998), *Which school of thought? The dimensions of resort hotel quality.* International Journal of Contemporary Hospitality Management, 10(2), 63-67.

Emery, C., Kramer, T., Tian, R. (2001), *Customer vs. Products: Adopting an Effective Approach to Business Students.* Quality Assurance in Education, 9(2), 110-115.

Finn, D. W., Lamb, C. W. Jr. (1991), *An Evaluation of the SERVQUAL Scales in a Retailing Setting.* Advances in Consumer Research, 18, 483-490.

Ford, J. B., Joseph, M., Joseph, B. (1999), *Importance-performance analysis as a strategic tool for service marketers: the case of service quality perceptions of business students in New Zealand and the USA.* The Journal of Services Marketing, 13(2), 171-186.

Griffin, P., Coates, H., McInnis, C., James, R. (2003), *The Development of an Extended Course Experience Questionnaire.* Quality in Higher Education, 9(3), 259-266.

Gronroos, C. (1984), *A Service Quality Model and Its Marketing Implications.* European Journal of Marketing, 18(4), 36-44.

Hair, J. F. Jr., Black, W. C., Babin, Barry J., Anderson, R. E. (2009), *Multivariate Data Analysis,* 7th ed., Pearson Prentice Hall

Harvey, L., Green, D. (1993), *Defining Quality.* Assessment & Evaluation in Higher Education, 18(1), 1-26.

Heskett, J. L., Jones, T. O., Loveman, G. W., Earl Sasser, W., Schlesinger, L. A. (1994), *Putting the Service-Profit Chain to Work.* Harvard Business Review, 72(2), 164-174.

Kang, H., Bradley, G. (2002), *Measuring the performance of IT services: An assessment of SERVQUAL.* International Journal of Accounting Information Systems, 3, 151–164.

Kang, G., James, J. (2004), *Service quality dimensions: an examination of Gronroos's service quality model.* Managing Service Quality, 14(4), 266–277.

Kanji, G. K., Malek, A., Tambi, B. A. (1999), *Total quality management in UK higher education institutions.* Total Quality Management, 10(1), 129-153.

Lehtinen, U., Lehtinen, J. R. (1991), *Two Approaches to Service Quality Dimensions.* The Service lndustries Journal, 11(3), 287-303.

Oldfield, B. M., Baron, S. (2000), *Student perceptions of service quality in a UK university business and management faculty.* Quality Assurance in Education, 8(2), 85-95.

Owlia, M. S., Aspinwall, E. M. (1996), *A framework for the dimensions of quality in higher education.* Quality Assurance in Education, 4(2), 12-20.

Parasuraman, A., Zeithaml, V. A., Berry, L. L. (1985), *A Conceptual Model of Service Quality and Its Implications for Future Research.* Journal of Marketing, 49, 41-50.

Parasuraman, A., Zeithaml, V., Berry, L. (1988), *SERVQUAL: A Multiple-Item Scale for Measuring Consumer Perceptions of Service Quality.* Journal of Retailing, 64, 12-40.

Parasuraman, A., Zeithaml, V. A., Berry, L. L. (1991), *Refinement and Reassessment of the SERVQUAL Scale* Journal of Retailing, 67(4), 420-450.

Rathmell, J. M. (1966), *What is Meant by Services?* Journal of Marketing, 30, 32-36.

Redding, P. (2005), *The evolving interpretations of customers in higher education: empowering the elusive.* International Journal of Consumer Studies, 29(5), 409-417.

Reichheld, F. F. (1996), *Learning from Customer Defections.* Harvard Business Review, 74 (2), 56-69.

Reichheld, F. F. (2003), *The One Number You Need to Grow.* Harvard Business Review, 81 (12), 46-54.

Rohini, R., Mahadevappa, B. (2006), *Service Quality in Bangalore Hospitals – An Empirical Study.* Journal of Services Research, 6(1), 59-84.

Shostack, L. G. (1977), *Breaking Free from Product Marketing.* Journal of Marketing, 41(2), 73-80.

Sines, R. G. Jr, Duckworth, E. A. (1994), *Customer service in higher education.* Journal of Marketing for Higher Education, 5(2), 1-15.

Smith, G., Smith, A., Clarke, A. (2007), *Evaluating service quality in universities: a service department perspective.* Quality Assurance in Education, 15(3), 334-351.

Sohail, S., Shaikh, N. (2004), *Quest for excellence in business education: a study of student impressions of service quality.* The International Journal of Educational Management, 18(1), 58-65.

Srikanthan, G., Dalrymple, J. (2003), *Developing alternative perspectives for quality in higher education.* The International Journal of Educational Management, 17(3), 126-136.

Standards and Guidelines for Quality Assurance in the European Higher Education Area, European Association for Quality Assurance in Higher Education, 2009, Helsinki, 3rd edition, Available at http://www.enqa.eu/pubs.lasso, (accessed 19 May 2011).

Statistical Office of the Republic of Serbia, Available at: http://webrzs.stat.gov.rs/WebSite/Public/PageView.aspx?pKey=127 (accessed 06 July 2011)

Stodnick, M., Rogers, P. (2008), *Using SERVQUAL to Measure the Quality of the Classroom Experience.* Decision Sciences Journal of Innovative Education, 6(1), 115-133.

Sursock, A., Smidt, H., *Trends 2010: A decade of change in European Higher Education.* European University Association, Available at http://www.eua.be/publications.aspx, (accessed 19 May 2011).

Svensson, G., Wood, G. (2007), *Are university students really customers? When illusion may lead to delusion for all!* International Journal of Educational Management, 21(1), 17-28.

The Service Economy, Organization for Economic Co-operation and Development, 2000; Available at www.oecd.org, (accessed 04 May 2010).

Wisniewski, M., Donnelly, M. (1996), *Measuring service quality in the public sector: the potential for SERVQUAL.* Total Quality Management, 7(4), 357-365.

Wright, C., O'Neill, M. (2002), *Service Quality Evaluation in the Higher Education Sector: An Empirical Investigation of Students' Perceptions.* Higher Education Research & Development, 21(1), 23-39.

Wu, W.Y., Hsiao, S. W., Kuo, H. P. (2004), *Fuzzy Set Theory Based Decision Model for Determining Market Position and Developing Strategy for Hospital Service Quality.* Total Quality Management, 15(4), 439–456.

Zeithaml, V. A., Berry, L. L., Parasuraman, A. (1996), *The Behavioral Consequences of Service Quality.* Journal of Marketing, 60, 31-46.