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MEASURING SERVICE QUALITY IN SOUTH AFRICA HIGHER EDUCATION: DEVELOPING A MULTIDIMENSIONAL SCALE

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ABSTRACT

Increased competition in the educational environment has contributed to the growing importance of service quality measurement at higher education institutions. This paper investigates aspects of service quality in higher education as a step towards developing a standardised scale for its measurement. Using structured questionnaires, survey data was collected from students ($n = 391$) from two South African universities. Findings indicate that the service quality in higher education scale is a multidimensional construct loading on 13 factors with reasonable reliability coefficient and some construct validity. Significant relationships were found among a number of study variables. Some further research directions were suggested and policy implications discussed.

Key Words: Service quality, Higher education, South Africa

INTRODUCTION

In response to the dynamic national, regional and global developments, Higher Education institutions have been changing rapidly. In South Africa, examinations systems, structures and other related processes have changed drastically impacting on the pass rate at the highest school levels and affecting intake at tertiary level. Consequently, a large number of students relative to available spaces and available government loans/scholarships apply with limited success. Prospective higher education students and the tertiary institutions' administrators normally undertake extended decision making during their processing of applications for courses of study. De Jager and Du Plooy (2006) noted how the decision-making process with regard to a course or a specific institution can be very complex. An increased understanding of the potential higher education student decision-making process would enable Higher Education institutions to market their courses in a more timely and effective way (Moogan, Baron & Bainbridge, 2001). Consequently institutions of higher education should be well aware of what aspects students value most in order to make a final decision with regard to a specific institution (De Jager & Du Plooy, 2006). Institutions of Higher Education should determine the most important variables that are under their control in order satisfy the changing needs of the students.

Service Quality in Higher Education

According to Berry and Parasuraman (1991) practitioners in quality management have developed methods of improving service quality. Sohail, Rajadurai and Rahman (2003) points out that in the context of higher education many college administrators see implementation of quality practices, such as TQM as a way to reassure that institutions of higher education perform well and that the customers of higher education are being served well.

Oldfield and Baron (2000) suggest that there are three underlying factors of higher education service quality namely, requisite elements (encounters which are essential to enable students to fulfil their study obligations),

acceptable elements (which are desirable but not essential to students) and functional elements (which are of a practical or utilitarian nature). Cheng and Tam (1997) came to the conclusion that based on different conceptions of education quality and the different concerns about achievement of education quality, various people may use diverse indicators to assess education quality and miscellaneous strategies to achieve education quality. It may result in not including all aspects of the input, process and outcome of an education institution. Consequently, our discussion in this paper will focus on the factors emerging from the data.

Entering Tertiary Education

Service delivery and customer satisfaction in an education environment is dependent on personal interaction between students and staff. The personal interaction and labour intensive nature of this service translates in a potentially highly heterogeneous quality service experience (Hill, 1995). In respect of service delivery students are generally not interested in organisational hierarchies and expect all staff (academic or administrative) to work together to represent the institution in their service delivery (Oldfield & Baron, 2000). Students therefore are expected to view any dealing with staff, irrespective of the nature of the dealing, to impact on their experience of service delivery. All learners entering tertiary education have expectations with regard to the learning exercise and individual preferences. Various authors have attempted to identify issues more directly related to higher education institutions in order to determine factors that influence a student's decision making process. More often than not these include support facilities and infrastructure, image and marketing, academic issues, administrative issues, location and access (Peterson & Augustine, 2000; Sporn, 1999; Strydom, Lategan & Muller, 1997; Woodhouse, 1996).

It can be argued that the decision making process of students is based on five factors (Cubillo, Sanchez & Cervino, 2006). Three of these, external to the institution, are personal reasons, previous experiences by acquaintances and the location of the programme. The importance of experiences by acquaintances implies that experience by alumni translates into an important marketing tool and serves as an image builder outside the realm of the institution. The other two, directly related to and managed by the institution, are the image of the university and the perceived quality of the programme of study. Although the relative importance of these factors is not ascertained it is clear that universities have to build and protect both institution and programme images to maintain its competitive position in the industry.

Increasingly, quality as component of service delivery dominates as one of the prime aspects impacting student decision making for education (McBurnie & Ziguras, 2007). The quality of the overall experience for students is crucial to the success of programmes. Ensuring quality content delivery is important as the educational value in education is embedded in the rigour and image of programmes (Desoff, 2006).

Higher Education in the Marketplace

According to De Shields, Kara and Kaynak (2005) marketplace dynamics are forcing business schools around the world to re examine their structures and business strategies and the processes employed to deliver value adding quality education. This follows intense competition around the globe that forces companies to adopt a marketing orientation in order to differentiate their offerings from those of competitors. According to Ford, Joseph and Joseph (1999:171) services industries have been reluctant to adopt this kind of focus and nowhere has it been truer than in the case of higher education. According to these authors many institutions of higher education were in the luxurious position of seeing ever increasing enrolments and resultant budgets. However the boom of the 1970s and 1980s has been replaced by the bust of the 1990s and 2000s. In addition tertiary education has experienced a dramatic decline in government subsidies and an increase in student fees in various countries (Mok, 2003; Palihawadana, 1999; Soutar & Turner, 2002) especially many countries with similar educational systems to South Africa. Kotler (2003) indicates that the numbers of students enrolling in US business schools nationwide has levelled off or declined and new competitors are entering the market continuously. This is due to various changes in the respective environments. It appears as if tertiary institutions face increasing market and financial pressures in developing as well as in developed countries. The result has been a more competitive educational environment. Consequently institutions of higher education are competing for the most promising students, their customers, by applying scientific business principles in order to recruit and retain the student (De Jager & du Plooy, 2006).

According to Abouchedid and Nasser (2002: 198) the service quality concept in higher education is inextricably linked to the competitive service and success of an institution. Service quality serves to meet the basic objective of retention and enrolment of students in universities. The authors confirm the value of providing acceptable services to students in order to maintain the stature and academic reputation of an institution. Furthering on this Abdullah (2006: 31) states that service quality has emerged as a pervasive strategic force and a key strategic issue on management's agenda. In recent times higher education is being driven towards commercial competition imposed by economic forces resulting from the development of global education markets and the reduction of government funds that forces tertiary institutions to seek funds from other sources. The emerging scenario pushes conclusions along the lines that higher education should not only be concerned about the society's perception about the skills and the abilities of their graduates but also about the perception of students about their educational experience. This also calls attention to some specific management process suggesting that apart from the traditional areas like accreditation and performance indicators of teaching and research, emphasis should perhaps now include focusing on students as customers.

Access, Location, Facilities and Infrastructure of Higher Education

Some demographic groups (including gender, age, ethnicity and social class criteria) often do not enjoy the same degree of access to higher education and it is therefore essential to investigate the access to higher education and the composition of the student body (Halsey, 1992). Variation in access by institution or institution type could also be a result of segmentation and positioning policies adopted by providers (Tonks & Farr, 1995), including government policies. Social class has also been used for describing the social origins of the actual or potential student body and to identify and assess differences between universities and polytechnics in terms of segmentation outcomes (Halsey, 1992). The geographic location of people (closely linked to social class) can be an important determinant of opportunities and capacity to act on them. This is also true for students from poorer areas or countries in Africa with limited financial resources, accesses to transport, library, computer and internet facilities. Factors such as gender, ethnicity, social class and geographic location have a significant influence on the access of African students to educational institutions.

The location of a university and the geographic surroundings are often perceived as aspects which will influence the choice of a particular institution. In South Africa this can be seen as a decisive factor in the decision making process. Because of high unemployment rates and lack of sufficient funds, parents will be more likely to send their children to more accessible locations. Campus atmosphere, access to public transport and parking availability is also pointed out as indicative of a desirable institution of higher education (Moogan, Baron & Bainbridge, 2001, Souter & Turner, 2002). Russell (2005) points out that the effective arrangement of physical evidence is important as prospective students often look at the physical evidence that surrounds the service in forming their evaluation of the service.

Students choosing between higher education institutions will eliminate choice alternatives on the basis of geographic, economic and academic factors (Jackson, 1982). Various research results verify the importance of location when students make decisions regarding higher education (Moogan & Baron, 2001; Moogan, Baron & Harris, 1999; Roberts & Allen, 1997; Welki & Navratil, 1987). Moogan et al. (1999) identify course specifics, location and reputation of the institution as important attributes for UK students. For this study location include aspects such as distance from home, rural/urban place, atmosphere of the campus and facilities of the city/town of the university. The facilities of higher educational institutions can also influence their ability to attract quality research personnel, to create suitable learning environments and student perceptions of their learning experience (Price, Fides, Smith & Agahi, 2003). The infrastructure of the institution such as computer and library facilities, campus security and accommodation is also seen as a major consideration when choosing an institution of higher education (Veloutsou, Lewis & Paton, 2004). Price et al. (2003) in examining the influence of facilities and location factors on the decision making process of undergraduates when choosing where to study found that all aspects relating to learning and teaching facilities, especially library facilities and the availability of computers were regarded as relatively important.

South African Universities

Universities in South Africa have experienced stagnating and declining budgets and simultaneous pressures to increase enrolments (Samoff, 2001). Since the late nineties South African universities have experienced a gradual decline in student numbers translating in more choice and increased pressures on service delivery by students. Pressures also build up in respect of technological advances and skills with some institutions and staff delivering and using sub-standard computer technology (Miji, 2002; Zaaiman, Van der Flier & Thijs, 1998). An assessment of the South African education system indicates that individual universities display unique sets of characteristics with regard to historical origins, faculty and departmental organisation, human resources and student numbers (Cloete & Bunting, 2000). Each of these in turn contributes to the image and reputation of the university. At the same time all universities are governed by common national regulations which imply a level of homogeneity across all players. South African Universities like other universities in countries such as the United Kingdom and Australia (that have similar educational systems to South Africa) has experienced a dramatic decline in government subsidies and an increase in student fees (Palihawadana, 1999; Soutar & Turner, 2002). In South Africa the decline in funding from subsidies is a direct consequence of the trend of falling pass rates (Naidoo, 2003) and subsequently earns less government subsidy.

Given the above background, the effects of competition on institutions of higher education, especially in the South African context, can be seen as having far-reaching implications for these institutions. Traditionally, Technikons and Universities have competed indirectly, whereas they now compete directly, ostensibly for the same market. The impact of technology and the demand for a technologically literate workforce has also created a third stream of private educational institutions that not only compete for school-leavers, but also on post-graduate level. Private providers meeting a specialised demand are often highly responsive and provide credentials in areas that the public sector does not (Kruss, 2002). This increased level of competition in the education environment has led to institutions of higher education employing managerial techniques to improve the efficiency and quality of services (Palihawadana, 1999) and switching from a passive to a more active market approach (Naudé & Ivy, 1999). If universities are to satisfy student requirements they must be aware of their own offerings and how these are perceived in the market place. Being aware of the influential factors and the associated impact on potential students is important for institutional policy makers (Moogan et al., 2001).

Objective of the Study

The primary objective of the study is to examine some of the criteria used by South-African students, when choosing or evaluating a tertiary institution. The study specifically initiates a process of developing a standardised measure of service quality in higher education and explores the various factors and components within service quality measurement in higher education service delivery in South Africa. In addition, the study examines the relationship between the service quality measures on the one hand and some other related variables such as intention to leave the university, trust in management of the university and the overall satisfaction with the university.

Specific Hypotheses Tested:

1. The service quality in higher education scale is a multidimensional measure
2. There is a significant relationship among service quality measures, intention to leave university, trust in management of the university and overall satisfaction with the university

RESEARCH METHODOLOGY

The sample framework

A random sample of 391 South-African students in the Faculty of Management of two universities was selected (Tshwane University of Technology – TUT and Cape Peninsula University of Technology – CPUT). These Universities were selected because collectively they represents 40 per cent of students enrolment of the Universities of Technology in South Africa. Sample elements were selected from a list of all courses (including numbers of students per course). The sample comprises 41% males and 59% females. The attitudes of the student sampled were tested regarding the importance of pre identified service quality variables related to academic and non academic issues when assessing a specific tertiary institution.

Measuring instrument and reliability

The list of items developed to measure service quality in HE was based on an extensive literature research and the findings of preliminary focus groups consisting of students and lecturers. The resulting instrument, a structured questionnaire, included several variables related to service quality at higher educational institution. The questionnaires were distributed to randomly selected students in pre-determined classes. Some demographic information was sought.

Service Quality Scale: service quality in higher education was measured by 52-items on a 5-point scale from “very important” to “not important at all”. Examples of items include: (1) Location of the Institution, (2) Well equipped Computer facilities, (3) Offer wide range of degrees/majors. Cronbach’s alpha of 0.92 was obtained for all items for the sample. *Intention to leave:* was measured on by four items on a 5-point Likert-type scale from “strongly agree” to “strongly disagree”. Example item include: (1) I often think of quitting my present educational institution (reserved score) and (2) I plan to stay in my present educational institution to develop my skills and complete my education. Cronbach’s alpha was 0.70 for the sample. *Trust in Management and Support:* was measured by five items on a 5-point Likert-type scale from “strongly agree” to “strongly disagree”. Example item include: (1) I am convinced my educational institution treat me with respect (2) The management of my educational institution encourages ideas and suggestions about ways to make the institution better. Cronbach’s alpha was 0.86 for the sample. *Overall satisfaction with the university was also measured by a single item:* What is your overall level of satisfaction with the university where you are currently enrolled? Response was anchored on a 5-point scale from “very satisfied” to “not satisfied at all”.

The following variables were also measured with a single item fixed choice scale measure. They include academic performance, the main reason for study, living arrangement during school time, and satisfaction with transportation to the university.

DATA ANALYSIS AND FINDINGS

Our analysis of the respondent profile produced the following results. Respondents were 59% female, about 43% were in their first year, 25% were within the 18-19 years age bracket, 31% were between 20-21 years; while about 18% were over 22 years. TUT had about 59% students participating. On academic performance, nearly 40% indicated a B grade average (60-69%) and 37% a C grade (50-59%). Only 2% reported lower than 40% score while 12 were in the A category (70-100%). Majority of the respondents indicated that they became aware of the University through friends (40%), family member (34%), Media (20%), the institution itself (27%) and teachers (17%). The major reason for study was for better job opportunities (48%), personal development (32%) and higher income (15%). Results obtained on the living arrangement revealed that majority were still living with their parents (41%), University residence (25%), and rented flats (12%). It is also interesting to note that over 60% of respondents were satisfied with their university.

Table 1: Factor Analysis of Service Quality Scale, Mean, Standard Deviation & Cronbach’s Alpha

S/N	Factors (Service Quality Scale)	No. of items	Mean	Stan. Dev.	Alpha
1	Internationalisation	6	11.76	4.21	0.82
2	Marketing and support	6	12.17	4.31	0.78
3	Access and approachableness of services	7	11.35	3.81	0.81
4	International Students and Staff	4	8.52	3.38	0.79
5	Academic reputation	5	7.43	2.62	0.71
6	Student focused	3	5.55	2.16	0.65
7	Academic quality	3	5.04	2.07	0.67
8	Variety and reach	3	5.25	2.21	0.69
9	Location and Logistics	4	7.45	2.86	0.63
10	Accommodation and Scholarship	3	6.17	2.63	0.57
11	Sports reputation and facilities	2	4.11	1.96	0.79
12	Safety and Security	1	1.36	0.79	-
13	Parking	1	2.09	1.23	-

Factor analysis was used as a data reduction tool and as a technique to establish some construct validity for the measure of service quality in higher education. The principal components analysis methods was used for initial factor extraction and Varimax rotation was applied. Four items were redundant and thus eliminated from further analysis. Thirteen factors were identified as key dimensions of service quality in higher education. These factors were named as indicated in Table 1. Each factor has factor scores higher than ± 0.50 , which demonstrates significant evidence about correlations between the items and each factor. Dancey and Reidy (2002) noted that when performing factor analysis, at least 100 participants should be used and the study should have five times as many participants as variables. Both of these criteria were met by the present study, with a 52-item measure and 391 respondents. The percentage of total variance of all 52 items explained by the 13 factors is about 60 per cent. This finding confirms hypothesis 1 that service quality in higher education scale is a multidimensional measure.

The factor analysis also shows evidence of construct validity for the scale and an overall reliability coefficient (Cronbach's α) of 0.92. Moreover, the significant correlation with other study variables including intention to leave and trust in management of the university (see Table 2) is an indication of some convergent validity and, to a limited extent, discriminant validity (Churchill, 1995; Cooligan, 1999). Specifically, result shows that intention to leave the university correlates significantly with internationalisation, access and approachableness of services and being student focused. Secondly, trust in management and support correlates significantly with marketing and support; international students and staff; academic quality; and sports reputation and facilities. Finally, significant intercorrelations exist among all the factors emerging from the service quality scale further confirming internal consistency, reliability and some construct validity for the scale. There is obviously need for a more rigorous investigation to confirm these tentative findings.

The intercorrelation matrix among selected study variables is reported in table 2. The higher the academic performance reported the more satisfied students were with the university ($r = 0.11$, $p < 0.05$). Living arrangement, was inversely but significantly correlated with satisfaction with transport ($r = -0.21$, $p < 0.01$), but directly and significantly correlated with overall satisfaction with the university ($r = 0.19$, $p < 0.01$). Students who live farther from the University tended to be more concerned with a convenient transport arrangement. It is equally interesting that the more acceptable the living arrangement is for the student the more positive they generally feel about the university. The higher the satisfaction with transport the higher the trust in management ($r = 0.20$, $p < 0.01$). The significant positive link among trust in management, satisfaction with transport and overall satisfaction with the university is an important signal of the interwoven nature of the study variables. Satisfaction with transportation is a strong indicator of how positively the university administration is perceived by the students.

Table 2: Intercorrelations among Selected Study Variables

Study Variables	2	3	4	5	6	7	8	9	10	11	12
1 Overall Satisfaction (university)	-.28 ^b	.42 ^b	.03	-.00	-.06	.01	.05	-.04	.01	-.09	-.05
2 Intention to leave university	1	-.15 ^b	.11 ^a	.06	.12 ^a	.09	.00	.10 ^a	.04	.04	.00
3 Trust in Management & Support		1	.09	.12 ^a	.06	.11 ^a	.08	.06	.12 ^a	.05	.10 ^a
4 Internationalisation			1	.49 ^b	.54 ^b	.49 ^b	.46 ^b	.46 ^b	.52 ^b	.52 ^b	.26 ^b
5 Marketing & support				1	.44 ^b	.53 ^b	.38 ^b	.41 ^b	.46 ^b	.43 ^b	.45 ^b
6 Access & approachableness					1	.38 ^b	.58 ^b	.53 ^b	.52 ^b	.57 ^b	.21 ^b
7 International Students & Staff						1	.33 ^b	.42 ^b	.45 ^b	.43 ^b	.38 ^b
8 Academic reputation							1	.49 ^b	.43 ^b	.47 ^b	.25 ^b
9 Student focused								1	.55 ^b	.53 ^b	.23 ^b
10 Academic quality									1	.53 ^b	.29 ^b
11 Variety and reach										1	.19 ^b
12 Sports reputation & facilities											1

Notes: (2-tailed); ^a $p < 0.05$; ^b $p < 0.01$; $n = 391$

Another interesting finding is that the lower the intention to leave the university the higher the trust in management ($r = -0.15$, $p < 0.01$) and the higher the overall satisfaction with the university ($r = -0.28$, $p < 0.01$).

It is clear that students will want to stay in a University where they are generally happy and satisfied, believes that management of the University will continue to work in their interest hence the trust in management.

DISCUSSION AND IMPLICATIONS

The study set out to accomplish two main objectives. First, to what extent is the service quality scale in higher education a multidimensional variable and what are the components? Secondly, what is the relationship between the factors that may emerge from the scale and other study variables like intention to leave, trust in management of the university and overall satisfaction with the university. The result reveals that the developing service quality in HE scale is indeed a multidimensional scale loading on 13 factors and showing a very strong internal consistency among the factors. Some of the factors emerging from the scale were also strongly correlated with intention to leave and trust in management, especially notable and important are internationalisation, access and approachableness of services, being student focused, marketing and support; international students and staff; academic quality; and sports reputation and facilities.

Internationalisation also came up as a very important factor in our measure of service quality loading as two interrelated items internationalisation (6-items) and international students and staff (4-items). The importance of internationalisation in the emerging competitive Higher Education sector has been well discussed in many studies (e.g. Meares, 2003; Miji, 2002; Mok 2003; Stephenson, 2006). Similarly, other factors from the service quality scale identified as important in our result and also supported by earlier studies include academic reputation; access and approachableness of services (e.g. Abouchdid & Nasser 2002). Convenient and comfortable living arrangement during school time, and satisfaction with transportation to the university emerged as critical factors in students' satisfaction as well as trust in the management of the university. Similarly the students' overall satisfaction with the university was an important correlate of academic performance, although since the causal direction of the relationship was not established in this investigation the question which precede the other is not answered. Suffice to add also that the lower the trust in management and satisfaction of the student with the university the higher the intention to leave the university.

The findings of this study, tentative as they may be are however encouraging as it opens a number of areas for further research. The management of HE in South Africa continues to be challenging in many respects and especially so with the socio-political pressures given the historical antecedents of segregation and the need to stretch HE to reach all hitherto underprivileged groups while not necessarily depriving all other citizens a fair access. While the present data is not without limitations a more extensive exploration is possible and could yet reveal more meaningful information about the nature of the relationship among the study variables. This could be accomplished with partial and multiple regression analysis to show the partial and full impact of the variables between and among themselves. Follow-up interviews and focus groups discussion with carefully selected students and student groups may generate a wide range of rich additional information to what is obtainable with survey instruments which is not without its attendant limitations.

CONCLUSION

To conclude, these results emphasise the importance of the interwoven relationship among some of the study variables including the need for effective management in the HE sector in South Africa. Education has always been evaluated in terms of its practical value and in many parts of the world University education is highly revered and treasured because it has always been and may for a long time be available to very few people (De Jager & Gbadamosi, 2008). The importance of demographic differences and other respondent's profile unexplored in the present investigation are worthy of future investigation, just as a more systematic and longitudinal research approach – though time consuming and expensive – may be of significant value in advancing this all important research area in HE in South Africa. There is no doubt that the transformation of HE in South Africa is an imperative that demands innovation both at the HE management – student interface level and in the wider social and policy context.

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