ABSTRACT

Purpose

This research sought to empirically identify context specific dimensions of service quality at Zimbabwean State Universities. The study also sought to measure the 'university-wide' overall service quality at National University of Science and Technology (NUST) and to explore differences in service quality perception based on selected students' demographic characteristics.

Design/methodology

A case study strategy was used. Focus group discussions were used to qualitatively identify service quality variables; which were then subjected to quantitative evaluation through the administration of questionnaires on a sample of 294 students. Exploratory Factor Analysis was used to reduce the service quality variables into service quality dimensions.

Findings

Five dimensions of service quality were identified, namely: General Attitude, Facilitating Elements, Access, Lecture Rooms and Health Services. Results also showed that most students (48.3%) perceived overall service quality at NUST to be average while 28.6% and 23.1% had a negative and positive perception of overall service quality respectively. Perceived overall service quality at NUST was found to differ significantly based on 'students' year of study' and 'faculty group'. Differences based on gender were found to be insignificant.

Originality/value

Identification of the five dimensions was a progressive step in developing a relevant service quality measurement instrument for a Zimbabwean State University context; and in so doing, contributing to literature on relevant service quality dimensions and measurement instruments in Zimbabwe and Africa in general. This was the first such study in Zimbabwe to address the context specific literature-gap on relevant service quality dimensions.

INTRODUCTION

This paper empirically explores determinants of service quality at state universities in Zimbabwe. This research took place on the backdrop of increasing competition among state universities in the country. This competition resulted from: (i) an increase in the number of State Universities (ii) inadequate financial support from Central Government; (iii) Introduction of parallel (evening) and block-release (part time) programmes and; (iv) a general increase in student enrolment levels.

Such competition in other parts of the world has resulted in Higher Education (HE) providers becoming more involved in understanding students' expectations and perceptions of service quality (Nadiri *et al*., 2009). Hill *et al*. (2003) noted that Students' views on all aspects of their Higher Education (HE) experience were being widely canvassed and were considered to be essential to the effective monitoring of quality in universities; and Zimbabwean State Universities need to do the same.

While there is currently an abundance of research and literature that discusses the subject of student perceived service quality, "nearly all of the literature concerning student perceived service quality is conducted in the context of developed countries" (Sumaedi *et al*., 2012). Ford *et al*. (1999), Lagrosen *et al*. (2004), Mai (2005) and Kao (2007); all cited by Sumaedi *et al*. (2012); have provided empirical evidence suggesting that students with different cultures have different views of service quality provided by a University. The general position of literature was that service quality determinants were culture and country specific (Owino, 2014; Sumaedi *et al*., 2012 and Wong, 2012). Zimbabwe therefore could not rely on existing research. Instead, a new study needed to be undertaken to establish relevant determinants of service quality in a Zimbabwean State University context.

The results of this study could bring new insights and understanding of the quality construct in the context of Zimbabwe as a developing country. In addition, this study responded to the call by Owino (2014) for a closer examination of service quality dimensions in developing countries. Furthermore, it is important to satisfy students, since satisfied students would recommend the service to other prospective students and would also be more likely to continue the relationship with the service provider (Munteanu *et al*., 2010). Therefore, since the student was the main recipient of the service, it became even more crucial to understand service quality and its influence on the service delivery process, in an attempt to fulfil students' needs more effectively (Beaumont, 2012)

The overarching problem of this study was that determinants of student perceived service quality had never been established for a Zimbabwean State University context. According to existing literature, only Kenya (Kimani *et al.,* 2011; Owino *et al.,* 2014) and South Africa (Jager and Gbadamosi, 2009) had conducted such studies in Africa.

The specific purpose of the study was to: establish the criteria that students use to evaluate service quality, that is, determinants of student perceived service quality applicable to Zimbabwean State Universities. The study also sought to measure the 'university-wide' overall service quality at National University of Science and Technology (NUST) as well as to explore any service quality perceptual differences based on selected students' demographic categories.

The following questions sought to be answered by the study:

i.   What are the determinants of service quality in Zimbabwe's State Universities?

ii. What is the overall student perception of service quality at NUST?

iii. Are there any differences in the perception of overall service quality based on students' year of study, gender, and Faculty?

The following hypotheses were also tested:

Hypothesis 1

H_0: There is no difference in student perceived service quality based on students' year of study.

H_1: There is a difference in student perceived service quality based on students' year of study.

Hypothesis 2

H_0: There is no difference in student perceived service quality based on students' gender.

H_1: There is a difference in student perceived service quality based on students' gender.

Hypothesis 3

H_0: There is no difference in student perceived service quality based on students' faculty group.

H1: There is a difference in student perceived service quality based on students' faculty group.

LITERATURE REVIEW

Definition of Service Quality

O'Neil and Palmer (2004) cited by Ramaiyah *et al.* (2007) defined service quality as the difference between what a student expected to receive and his/her perceptions of the actual service delivered. To support this definition, Zeithaml *et al.* (1990) stated that service quality could be measured by making the comparisons between customers' expectations and perceptions.

A consideration of the above demonstrates that service quality is a subjective construct and is defined by each customer based on his or her expectations and perceptions of the same.

Who is the University Customer?

Identifying the right customer is not a straight or simple task, especially for institutions of learning. Quinn *et al.* (2009) noted that many stakeholders function as customers in their unique ways. Examples are: providers of funding who view quality as 'value for money'; students who consume education courseware; employers of university graduates who view quality as 'fitness of graduates for purpose'; (Harvey and Green, 1993 cited by Srikanthan, 2003).

While there is a clear plurality of customers, there seemed to be a general consensus among researchers that students were the most important customer. A survey conducted by Owlia and Aspinwall (1997), cited by Abdullah (2006b); and Quinn *et al.* (2009), that examined the views of different professionals and practitioners on service quality in higher education institutions from United States, Europe, India and Australia gave the highest ranking to students, ahead of the other different customers of higher education. This position was supported by Helms and Key (1994). For purposes of this research, students were deemed to be the bonafide 'customers' of universities, based on the above convergence of literature. Thus it becomes important to identify determinants of service quality from the standpoint of students being the primary customers (Abdullah, 2006b).

The strategic role of Service Quality in Higher Education

Perception of service quality is of strategic importance for an organization due to its influence on the post-enrolment communication behaviour of the students (Marilyn, 2005). Highly

satisfied customers were expected to spread a positive word of mouth about the institutions, thus attracting new applicants at much lower marketing costs.

Furthermore Taylor and Baker (1994) noted that service quality and customer satisfaction were widely recognized as key influences in the formation of consumers' purchase intentions in service environments. According to Parasuraman *et al.* (1988); and Cronin and Taylor (1994), perceptions of quality were also found to be important influences on students' post enrolment word-of-mouth communications

Models of Service Quality

Abdullah (2006a, 2006b), Cronin and Taylor (1994, 1992), Zeithaml *et al.* (1990), Parasuraman *et al.* (1988, 1985) and Gronroos (1984) have all developed conceptual models that attempted to describe and provide a basis for understanding the service quality construct. The researcher observes that all the models of service quality can be categorised into two paradigms, namely: the Disconfirmation and the Perception Only models.

Disconfirmation models are those that visualise service quality as the difference between a customer's expectations and their perception of the service actually delivered. Examples from this type of paradigm are:

i. Gronroos (1984) model: In this model, both Technical and Functional quality are perceived through the filter of corporate image and compared with customer expectations in order to arrive at a judgement.

ii. The GAP model was developed by Parasuraman *et al.* (1985). It states that consumers' service quality perception is influenced by a number of gaps (GAP 1 – GAP 4) which culminates in the difference between the perceived service and the expected service (GAP 5). Service quality perceptions will be favourable if the service delivery exceeds the customers' expectations or will be unfavourable when service expectations are not met.

iii. The SERVQUAL model by Parasuraman *et al.* (1988), which later became known as the RATER: This model became the basis of an instrument that measured the difference between customer service expectations, on the one hand, and actual services received, on the other; in line with the disconfirmation

paradigm. SERVQUAL consists of a 22-item scale grouped into five service quality dimensions namely: tangibles, reliability, responsiveness, assurance, and empathy

Unlike Disconfirmation models, Perceptions Only models require the customer to only evaluate the service provider's performance in a particular service encounter, without making any consideration of customer expectations. Examples from this type of paradigm are:

i. SERVPERF model: Cronin and Taylor (1992) developed the SERVPERF scale, which was born out of the inadequacies of SERVQUAL instrument. This was a 'performance only' scale, instead of a disconfirmation scale. Empirical research by Cronin and Taylor (1992) showed that SERVPERF offered better reliability than SERVQUAL, illustrating that expectations could be disregarded for assessment.

ii. HEdPERF model: Generic measures (for example, SERVQUAL and SERVPERF) of service quality were not totally suitable for assessing perceived quality in higher education (Abdullah, 2006a), creating the need for an instrument specific to the higher education sector. As a result, Abdullah (2006b) developed the HEdPERF instrument, which was an adaptation of the standard SERVPERF model by Cronin and Taylor (1992); through adopting a perceptions-only approach. Abdullah (2006b) states that the aim of this model was to capture a context specific view of service quality in higher education, enabling the whole student experience to be measured. The instrument measured 41-items and each item was tested for reliability and validity, using both types of factorial analysis: exploratory and confirmatory (Abdullah, 2006b). Furthermore, comparative results showed that the HEdPERF scale captured more variance relative to that of the SERVPERF scale (Abdullah, 2006a).

Conceptual Framework

Having discussed the various service quality models presented in the previous section, this researcher adopted a 'single level' (non-hierarchical), 'perceptions only' and 'multiple variables' conceptual framework for visualising and understanding the service quality construct and its dimensionality in a Zimbabwean State University context. This conceptual framework is shown in Figure 1 below. In this conceptual model, the service quality construct is made up of several dimensions (dimension 1 to the nth dimension). Each of the

dimensions also consists of multiple variables ($v_1 - v_n$). A non-hierarchical framework was adopted because the most popular and successful models to date (Gronroos, RATER and GAP) were all non-hierarchical. Dabholkar et al. (1996) also suggested that hierarchical models were largely applicable to banks and retail stores. 'Multiple variables' were incorporated into the conceptual framework because all models to date have had multiple variables. This is a 'perceptions only' framework because empirical evidence from Cronin and Taylor (1992) and Abdullah (2006b) endorsed the feasibility of this approach, demonstrating that the validity of this study was not compromised by the disregard for students' expectations.

- **Insert Figure 1 here –**

Service Quality Dimensions in Higher Education

Sumaedi *et al.* (2012) noted that several researchers (Cuthbert, 1996; Pariseau and McDaniel, 1997; Ham and Hayduk, 2003; Abu Hasan *et al.*, 2008) chose to adopt dimensions from SERVQUAL model proposed by Parasuraman *et al.* (1988). However, the expanse of literature showed that there was no uniformity in the dimensionality of the service quality construct. For example, Table 1 below shows that there was a range of eighteen (18) service quality dimensions from only seven (7) authors. Some researchers such as Hill (1995) proposed up to 14 dimensions to measure student perceived service quality. A more exhaustive analysis by Sumaedi *et al.* (2012) also points to a wide variety of dimensions, thereby necessitating an empirical investigation for each context.

- Insert Table 1 here –

Perception of Overall Service Quality at NUST

A World Bank report by Holm-Nielsen (2001) cited by Kimani (2011), stated that the quality and relevance of research, teaching and learning had continued to decline in public tertiary education institutions, citing that many universities operated with overcrowded and

deteriorating physical facilities, limited and obsolete library resources, insufficient equipment and instructional materials, outdated curricula, unqualified teaching staff, poorly prepared secondary students and an absence of academic rigor and systematic evaluation of performance. On the basis of this assertion, there should therefore be a general expectation of declining perceived overall service quality.

Differences in the Perception of Overall Service Quality Based on Students' Year of Study, Gender and Faculty

Zeithaml et al. (1993) postulated that personal characteristics were one antecedent that affected customer perceived quality.

Year of Study

Kao (2007) showed that there was a significant difference in students' perception of service quality based on the students' year of study. This finding was also supported by Oldfield and Baron (2000), Hill (1995) and Jusoh et al. (2004), cited by Min, S. and Khoon, C. C. (2014).

Gender

Research by Joseph et al. (2005) showed that there was a significant difference between male and female students' perceptions of service quality. This view was however contradicted by Maphala (2014) who found that perceptual differences based on gender were statistically insignificant.

Faculty of the student

Literature search by the researcher could not identify any specific hypothesis of how students' quality perceptions differed based on the faculty of the student.

RESEARCH METHODOLOGY

Research Design and Approach

A two-stage sequential explorative design comprising of both qualitative and quantitative approaches was used. Incorporating both quantitative and qualitative techniques can strengthen the validity of a methodology, offsetting some of the limitations and problems associated with individual research techniques (Sechrest and Sidani, 1995). According to Gray (2009) this mixed design is useful in circumstances where relatively little or nothing is known about the research problems, as the case was in this study.

In the first stage, factors of service quality were qualitatively gathered through focus group discussions. The second phase involved the quantitative evaluation of identified factors through the administration of questionnaires. The questionnaire data, obtained from the second phase of the study, was then statistically reduced into service quality dimensions through exploratory factor analysis (EFA).

A case study strategy was adopted for this research because it satisfied case study conditions suggested by Yin (2003b) in that it was a) empirical b) investigated a "contemporary" phenomenon and c) within its real-life context of state universities. In addition, a case study strategy can accommodate both qualitative and quantitative data (Yin, 2003b; Gerring, 2007), thereby allowing the researcher to get a rich mix of data for the study. NUST was used as the case organisation.

Sampling

The population of the study was 7525 undergraduate students at NUST. The sampling frame was a list of students registered for the second semester of the 2015-2016 academic year. Three focus group discussions were held in the first phase of the study with each focus group consisting of between of between 5-10 students as guided by Morgan (1998a) and Ghauri and Gronhaug (2010). The choice of three focus groups was in line with guidelines by Morgan (1988b) and Stewart *et al.* (2007), cited by Wong (2012). A combination of purposive and convenience sampling were used for selecting focus group participants. Convenience sampling is inexpensive while Purposive sampling brought a balance between homogeneity and heterogeneity in the group (Krueger and Casey, 2009). One focus group was created for

each of the science and non-science faculties. A third, randomly constituted cross-faculty group was created in order to have the minimum of three focus groups.

In the second phase of the research involving a survey of students through questionnaire administration, the calculated sample size was 368 students; based on a 95% confidence level (significance – 0.05) and a population proportion of 0.5 (Krejcie and Morgan, 1960).

Data Collection

For each of the focus groups, participant were welcomed, given an overview of what to expect, introduced to key terms; and informed of the ground rules in line with guidelines provided by Krueger and Casey (2009).

The second phase involved the collection of data using self-administered questionnaires. The questionnaire had three sections, namely: (a) Profile of respondent, that is, age, gender, year of study, department and faculty of the student; (b) Measurement of service quality attributes that were identified during focus group discussions and; (c) measurement of overall perceived service quality. A five-point Likert-scale ranging from Strongly Disagree to Strongly Agree was used, in line with similar studies (Sumaedi *et al.*, 2012).

Measurement

Three measures were taken to improve the face validity of the questionnaire, those being:

i. The wording of questionnaire items was done in a manner similar to that used in previously validated instruments (Lai et al. 2007; Zhao et al.2002; Parasuraman et al. 1988, 1985 as cited by Ravichandran et al. 2012).
ii. The questionnaires were pilot tested on 30 respondents to get feedback on, and address any perceived ambiguities, omissions or errors in the draft questionnaire.
iii. The questionnaire items were generated using comprehensively explorative focus group discussions, resulting in the inclusion of all relevant aspects of service quality that were under investigation.

The reliability of the survey questionnaire was tested using Cronbach's alpha analysis. A research instrument is considered to be reliable and consistent if it returns a Cronbach's alpha value of at least 0.7 (Churchill, 1979). The questionnaire used in this study had a Cronbach's alpha value of 0.908, meaning that the questionnaire had high construct measurement reliability.

RESULTS

Focus Group Attributes

There were three focus groups (group 1-3) that constituted the first phase of the study. Group 1 had eight participants from science faculties only. 50% were male and 50% were female. Group 2 had seven participants from non-science faculties, of which 42.9% were female and 57.1% were male. Group 3 had ten participants, of which 55% and 45% were drawn from science and non-science faculties respectively.

Questionnaire Responses

While the calculated sample size was 368 students, the realised sample size was 294. 458 questionnaires were issued in order to mitigate the impact of low response rates and 350 responses were obtained, of which 56 were invalid because of missing information. Stratified random sampling based on faculty strata was used in selecting questionnaire respondents. This was in line with suggestions of several studies (Brown *et al*., 2009; Gatfield *et al*., 1999; Oldfield and Baron, 2000; Punch, 2005) that were reviewed by Wong (2012). The above resulted in an effective response rate of 64%. In spite of having realised a smaller sample size of 294, this was considered to be adequate because it fell within the acceptable range of an EFA sample size suggested by several researchers (Comrey and Lee, Hair *et al* and Tabachnick's rule of thumb, cited in William *et al*, 2012)

Survey Data Characteristics

58.2% of the respondents were male while 41.8% were female. 49% of respondents were from non-science faculties while 51% were from science faculties. Respondents comprised of first years (29.6%); Final years (28.6%); and second and third years (41.8%)

The Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy, returned a result of 0.85, a figure which was above the minimum of 0.5 suggested (Williams *et al*, 2012). The Bartlett's Test of sphericity returned an output of 0.000 which was significant (p<.05). These results ensured an excellent sampling adequacy and support for the factor structures to be determined.

Statistical tests

The Mann-Whitney U and the Kruskal-Wallis test were used to test if differences in the perception of overall service quality at NUST differed significantly between different student demographic groups. The above two test are the non-parametric equivalent of the parametric 2 Independent Samples T-test and the One-Way ANOVA respectively; which could not be used on data collected using an ordinal Likert scale.

Findings of the Study:

Objective 1: Determinants of service quality in Zimbabwe's State Universities

Stage one of this study involving focus groups discussions identified a total of 67 variables used in the evaluation of service quality by NUST undergraduate students. These variables were converted into the statements that made up the first 67 statements in section B of the questionnaire.

EFA was conducted using Principle Component (PC) factor extraction and Varimax rotation. Kaiser's criterion of selecting factors with eigenvalue greater than 1 was used for factor extraction (Hair et al., 1995 cited by Williams *et al*., 2012). 21 dimensions that explained 63.49% of the total variance in the data set were obtained. Items that had a factor loading of less than 0.45 were discarded. A cut-off point of 0.45 used in this study was a good fit between practical significance and inclusion of important factor elements (Hair et al., 1995 cited by William et al., 2012). The dimensions were systematically reduced from twenty one (21) to five (5), by dropping those dimensions that had fewer than three variables; and then iterating the extraction and rotation until clean and concise dimensions emerged. The final rotated component matrix that emerged is shown in Table 2 below. As can be observed from the table, a total of five dimensions constituted by twenty five (25) items emerged. These dimensions explained 30% of the total variance in the original dataset. No fixed threshold of the explained variance has been set in literature. However, certain percentages have been suggested (Williams *et al*, 2012), for instance, in the humanities, the explained variance of 50% has been observed (Hair *et al*, 1995 cited by Williams *et al*., 2012).

- **Insert Table 2 here –**

Having arrived at a satisfactory number of statistically significant factors, appropriate names were assigned as shown in Table 2 above. Each of the dimensions has been discussed below.

a) Dimension 1: **General Attitude**

This dimension had six significant factor loadings. The 'Lecturers respect students' was the most highly correlated variable followed by 'NUST administration has a good external image', 'Students are held in high regard by University staff', 'University administration is responsive to students' needs', 'Marking and assignment of marks to students is always based on merit' and 'Students' views and concerns are taken seriously by the university administration'. This dimension was named 'General Attitudes', as Hadikoemoro (2002) cited by Ramaiyah, (2007) had used the same term to refer to fairness of grading and courteous handling of students problems. Owlia and Aspinwall (1996) used the term 'Attitude' while Parasuraman et al, (1985) used the term 'Courtesy' to refer to the same theme.

b) Dimension 2: **Facilitating Elements**

This factor consisted of seven significant variables, namely: 'The library is big enough to meet demand from students', 'Student accommodation provided by NUST is adequate', 'University transport for students is available and adequate', 'Lecturer evaluation by students has resulted in improved performance and service delivery by lecturers', 'The library has adequate power points for use by students', 'NUST administration consults and engages students when formulating policies and making decisions' and 'The students' representative council is influential and effective in the championing of students' issues.'

Ultimately, this dimension was named 'Facilitating elements' because it was generally concerned with elements that enhanced the overall student experience in so far as service delivery was concerned. These elements included physical facilities, students' services as well as student engagement and representation.

c) Dimension 3: **Access**

This factor consisted of four variables, namely: 'the wifi signal is widely distributed across the university campus', 'It is easy to log into the NUST wifi', 'adequate food and catering outlets are available on campus' and 'library opening hours are convenient for students'. 'Access' relates to issues such as approachability, ease of contact, availability and convenience (Parasuraman 1985; Abdullah 2006a); hence the use of this term in relation to wireless internet (wifi) signal distribution, library opening hours and availability of catering outlets.

d) Dimension 4: **Lecture Rooms**

This factor consisted of five variables namely: 'Lecture rooms have adequate furniture (chairs, tables *et cetera*)', 'Lecture rooms are fitted with whiteboards', 'NUST lecture rooms are big enough for the number of students in a class', 'Furniture in the lecture rooms is suitable for the intended use' and 'NUST has enough lecture rooms to satisfy demand from conventional, block and parallel students.' This factor was named 'Lecture rooms' since it was exclusively concerned with lecture room issues.

e) Dimension 5: **Health Services**

The fifth factor consisted of three variables, namely; 'A doctor is always available at the NUST clinic', 'NUST has a good and functional clinic', and 'Drugs/ medication is always available at the NUST clinic'. These variables formed a coherent group that had a strong focus on health services. Consequently, this factor was named health services.

Objective 2: Overall student perception of service quality at NUST

The mode, instead of the mean, was selected as the most appropriate measure of central tendency to use in describing the overall perceptions of service quality at NUST. This was because a Likert scale is only useful in ranking observations but does not assume equal magnitudes between rank-steps.

Most of the respondents felt that the overall service quality at NUST was 'Average'; a score which was interpreted as 'indifference'. This rating represented 48.3% of responses. 24% of respondents felt that overall service quality was bad while 5% felt that the service was very bad. Only 2% of respondents felt that overall service quality was very bad while the remaining 21% felt that the service was good.

A total of 23.1% gave a positive rating ranging from 'Good' to 'Very Good'. On the other hand, 28.6% gave a negative rating ranging from 'Bad' to 'Very Bad'. As a result, there were

more students who gave a negative rating of quality compared to those who gave a positive rating.

These findings also seem to support a World Bank report by Holm-Nielsen (2001) cited by Kimani (2011), who contended that the quality and relevance of research, teaching and learning has continued to decline in public tertiary education institutions.

Objective 3: Quality perception differences based on students' demographic characteristics

Hypothesis 1: Quality perception differences based on students' year of study

The study sought to examine whether there were statistically significant differences in the perception of overall service quality provided at NUST; based on the students' year of study. The Kruskal-Wallis test showed that there was a statistically significant difference in perception of overall service quality at NUST based on students' year of study, *(Kruskal-Wallis χ^2=24.801, p=.000, sig≤05, 2-tailed).* This research has provided empirical evidence supporting other researchers such as Kao (2007), Abouchedid and Nasser (2002), Oldfield and Baron (2000), and Hill (1995).

Hypothesis 2: Quality perception differences based on students' gender

The study sought to examine whether there were statistically significant differences in the perception of overall service quality at NUST, based on the students' gender. The Mann-Whitney U test showed that there was no statistically significant difference in perception of overall service quality based on student gender. *(Mann-Whitney U =9840.5, p=.312, sig≤05, 2-tailed).* This finding contradict Abouchedid and Nasser (2002) who found significant differences in a Lebanon private university's students' attitudes differed significantly based on gender.

Hypothesis 3: Quality perception differences based on students' faculty groups

The study sought to examine whether there were a statistically significant difference in the perception of overall service quality at NUST, based on the students' faculty group. The Mann-Whitney U test showed that there was a statistically significant differences in perception of overall service quality based on students' faculty group, (Mann-Whitney U =9352.0, p=.033, sig≤.05, 2-tailed). This finding provides evidence in support of Abouchedid and Nasser (2002).

CONCLUSIONS AND RECOMMENDATIONS

Service quality dimensions in a Zimbabwean State University context

This study identified five dimensions of service quality relevant to students in a Zimbabwean State University context. These dimensions were: General Attitude, Facilitating Elements, Access, Lecture Rooms and Health Services.

The researcher observed that, out of the five dimensions extracted in the study, none of them contained academically oriented factors such as curriculum, research expertise, teaching capacity and qualifications of faculty staff. This was contrary to Western countries where these issues were a recurrent theme in literature (Sumaedi *et at.*, 2012). The researcher also noted that unlike Zimbabwe, Kenya, a fellow African country; was similar to the West in concerning itself with 'academic issues' such as lecturer conduct and experience, curriculum content and examinations (Owino et al., 2014).

Another glaring observation noted by the researcher was the emergence of 'lecture rooms' as a stand-alone dimension. Lecture rooms have generally fallen under the "Tangibles' dimension in most research (Abdulla, 2006a; and Parasuraman et al, 1985). This prominence could have been a sign of poor infrastructure at State Universities, especially lecture rooms.

Overall student perception of service quality at NUST

Findings were unsettling in that there were more students (28.6%) that had a negative opinion of service quality at NUST than those that had a positive opinion (23.1%). In other words, a negative word of mouth was more likely to prevail over a positive word of mouth resulting in the erosion of NUST's reputation and brand equity. Perceptions of quality have been found to be important influences on students' post enrolment word-of-mouth communications (Parasuraman et al, 1988; Angela, 2006; Ben, 2007; Berry, 2006; Cronin and Taylor, 1994).

Implications of findings

From a theoretical perspective , the identification of the five dimensions was a progressive step in developing a relevant service quality measurement instrument for a Zimbabwean State University context; and in so doing, contributing to literature on relevant service quality dimensions and measurement instruments in Zimbabwe and Africa in general.

From a management perspective, this study showed that if NUST ever needed to demographically segment its undergraduate student population as part of a broader service quality initiative; it would be advisable to carry out such segmentation based on the students' 'faculty group' and 'year of study'. This is because the gender demographic showed no statistically significant difference in perceived service quality.

The NUST Institutional Audit Sub-Committee of Senate could benefit by adopting the resultant dimensions for evaluating and managing service quality. University management could also use these five dimensions to invest in suitable service recovery strategies that could increase customer satisfaction levels.

Future research

Future studies need to subject the five dimensions to empirical validation through the performance of a Confirmatory Factor Analysis (CFA) study using a fresh sample. There is also a need to conduct a longitudinal study assessing how service quality dimensions at State Universities change over the passage of time in order to enable service quality managers to stay ahead of customer expectations. Further studies need to be conducted to explain the uncharacteristic non-emergence of academically oriented factors in the final service quality dimensions. Future research needs to determine if this finding would also hold for research and other postgraduate students; who were beyond the scope of this study.

Figure 1: Conceptual Framework of the Determinants of Perceived Service Quality at Zimbabwean State Universities
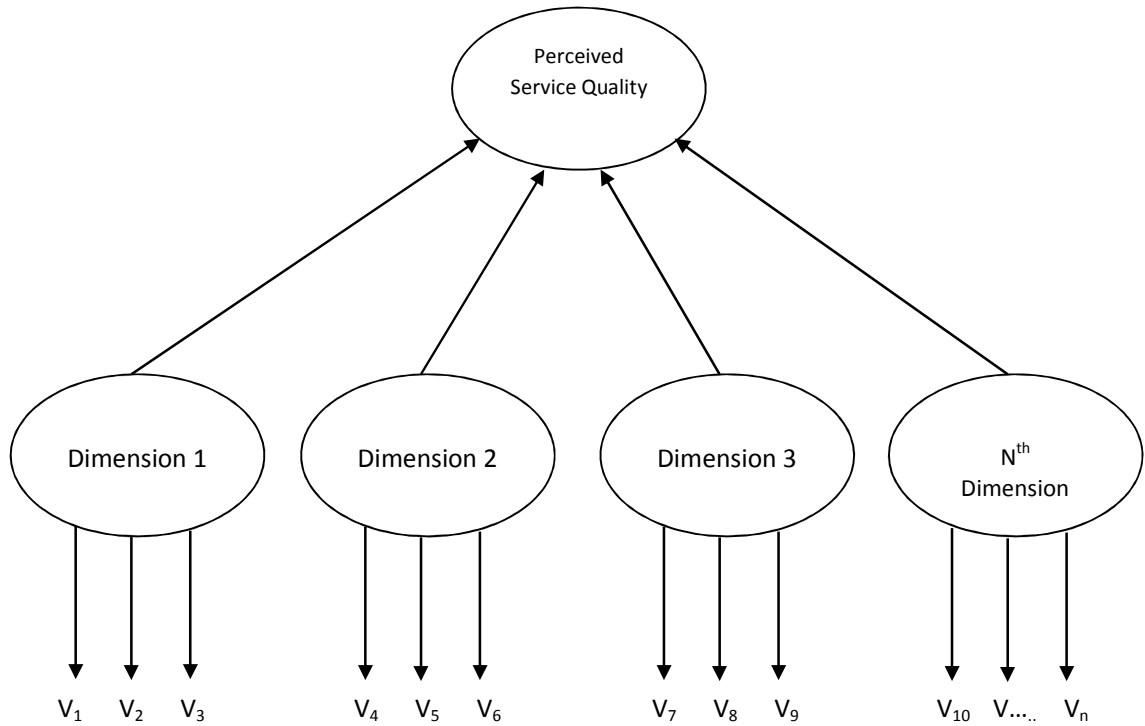
Source: Author – Adapted from Parasuraman *et al.*, (1988)

Table 1: Summary of Service Quality Determinants identified by various authors

Dimension	Parasuraman et al. (1988)	Gronroos, (1988)	Brooks (2005) cited by Ramaiyah, (2007)	Sangeeta et al. (2004), cited by Ramaiyah (2007)	Soutar and McNeil (1996), cited by Sumaedi et al. (2012)	Hadikoemoro (2002), cited by Ramaiyah, (2007)	Owlia and Aspinwall (1996)	Athiyaman (1997)
Tangibles	✓				✓		✓	✓
Reliability	✓	✓		✓	✓	✓	✓	
Responsiveness	✓	✓			✓	✓		
Empathy / Attitude	✓	✓		✓	✓	✓	✓	
Assurance	✓				✓			
Recovery		✓						
Reputation and credibility		✓	✓					
Professionalism and skill/ Competence		✓	✓	✓			✓	
Faculty Research and content			✓	✓			✓	
Student Educational Experiences and Outcomes			✓				✓	
Competence:				✓	✓	✓		✓
Access				✓				✓
Communication					✓			
Systems					✓			
Fairness						✓		
Class size								✓
Curriculum load and difficulty								✓

Source: Author

Table 2: Rotated component matrix showing factor loadings of dimension elements

	Component (Dimension)				
	1	2	3	4	5
Dimension 1: **General Attitude**					
Lecturers respect students	.602				
NUST administration has a good external image	.575				
Students are held in high regard by University staff	.574				
University administration is responsive to students' needs	.515				
Marking and assignment of marks to students is always based on merit	.470				
Students' views and concerns are taken seriously by the university administration	.468				
Dimension 2: **Facilitating Elements**					
The library is big enough to meet the demand by students		.600			
Student accommodation provided by NUST is adequate		.582			
University transport for students is available and adequate		.502			
Lecturer evaluation by students has resulted in improved performance and service delivery by lecturers		.501			
The library has adequate power points for use by students		.487			
NUST administration consults and engages students when formulating policies and making decisions		.471			
The students' representative council is influential and effective in the championing of students' issues.		.453			
Dimension 3: **Access**					
The wife signal is widely distributed across the university campus			.573		
It is easy to login to the NUST wife			.491		
Adequate food and catering outlets are available on campus			.458		
Library opening hours are convenient for student			.456		
Dimension 4: **Lecture Rooms**					
Lecture rooms have adequate furniture (chairs, tables *et cetera*)				.618	
Lecture rooms are fitted with whiteboards				.514	
NUST lecture rooms are big enough for the number of students in a class.				.511	
Furniture in the lecture rooms is suitable for the intended use				.506	
NUST has enough lecture rooms to satisfy demand from conventional, block and parallel students.				.464	
Dimension 5: **Health Services**					
A doctor is always available at the NUST clinic					.617
NUST has a good and functional clinic					.579
Drugs/ medication is always available at the NUST clinic					.515

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization. (**Source: SPSS Output**)

REFERENCES

Abdullah, F. (2006a), "Measuring service quality in higher education: HEdPERF versus SERVPERF", *Marketing Intelligence and Planning*, 24(1), pp.31 -47.

Abdullah, F. (2006b), "The development of HEdPERF: a new measuring instrument of service quality for the higher education sector", *International Journal of Consumer Studies*, 30(6), pp.569-58.

Abouchedid, K. and Nasser, R. (2002), "Assuring quality service in higher education: registration and advising attitudes in a private university in Lebanon", *Journal of Quality Assurance in Education*, 10(4), pp. 198-206

Angela, R. (2006), "Student Services: A Student's Eye View", *College and University*, 81(2), pp. 65.

Beaumont, D. J. (2012), "Service Quality in Higher Education: The students' viewpoint". B.Com Project, University of Manchester, Manchester Business School, UK.

Ben, A. M. (2007), "Identifying the needs of customers in higher education", *Education*,127(3), 332.

Berry, L. L., Wall, E. A., and Carbone, L. P. (2006), "Service Clues and Customer Assessment of the Service Experience: Lessons from Marketing". *Academy of Management Perspectives, 20*(2), 43-57.

Brown, T.J., Churchill, G.A., and Peter, J.P. (1992), "Improving the Measurement of Service Quality", *Journal of Retailing*, Vol. 69, No. 1, pp. 127-139.

Churchill, G.A. (1979), "A paradigm for developing better measures of marketing constructs", *Journal of Marketing Research*, Vol. 19 No. 4, pp. 491-504.

Cronin, J.J. Jr and Taylor, A.S. (1994), "SERVPERF versus SERVQUAL: reconciling performance based and perception based – minus – expectation measurements of service quality", *Journal of Marketing*, Vol. 58 No. 1, pp. 125-31

Cronin, J.J., Jr.and S. A. Taylor.1992, "Measuring service quality: A re-examination and extension." *Journal of Marketing*, Vol. 56: 55-68.

Dabholkar, P. A., Thorp, D. I., and Rentz, J. O. (1996), "A Measure of Service Quality for Retail Stores: Scale Development and Validation", *Journal of the Academy of Marketing Science*, 24, pp 3-16.

Gerring, J. (2007), *Case study research: Principles and practices*, Cambridge University Press, Cambridge, UK.

Gray, D. E. (2009) *Doing Research in the real world*, 2nd Edition. SAGE Publications, CA.

Gronroos, C. (1984), "A service Quality model and its marketing implications" *European Journal of Marketing*, 18(4), 36-44.

Gronroos, C. (1988), "Service Quality: The six criteria of good perceived service", *Review of Business*, 9 (3).

Helms, S. and Key, C.H. (1994), "Are students more than customers in the classroom?", *Quality Progress*, 27, pp. 97–99.

Hill, F.M. (1995), "Managing service quality in higher education: the role of students as primary consumer", Quality Assurance in Education, Vol. 3 No. 3, pp. 10-21.

Jager, J. and Gbadamosi, G. (2009), "Specific remedy for specific problem: measuring service quality in South African higher education", *Higher Education*, Springer Science and Media, UK.

Joseph, M., Yakhou, M. and Stone, G. (2005), "An educational institution's quest for service quality: customers' perspective", *Quality Assurance in Education*, Vol. 13 No. 1, pp. 66-82.

Kao, T.H. (2007), "University students' satisfaction: an empirical analysis", Master of Commerce and Management thesis, Lincoln University, Jefferson City, MO.

Kimani, S. W., Kagira, E. K. and Kendi, L. (2011), "Comparative Analysis of Business Students' Perceptions of Service Quality Offered in Kenyan Universities", *International Journal of Business Administration*, Vol. 2, No. 1, pp. 98-112

Krejcie R. V. and Morgan D. W., (1960), 'The NEA Research Bulletin', Vol. 38, p. 99.

Krueger, R.A. and Casey, M.A. (2009), *Focus Groups: A Practical Guide for Applied Research*, Sage, London.

Maphala, P. J. (2014), "Students' perceptions on service quality at the Admissions and Student Record Department: the case of National University of science and Technology (NUST)", MSc Marketing dissertation, NUST, Zimbabwe (Unpublished).

Marilyn, R. (2005), "Marketing education: A review of service quality perceptions among international students" *International Journal of Contemporary Hospitality Management*, 17(1), 65

Min, S. and Khoon, C. C. (2014), "Demographic Factors in the Evaluation of Service Quality in Higher Education: A Structural Equation Model (SEM) Approach", *International Journal of Marketing Studies*; Vol. 6, No. 1 pp 90-102

Morgan, D. L. (1998a). *The focus group guidebook*. Sage, London.

Morgan, D.L. (1988b), *Focus Groups as Qualitative Research*, Sage, London

Munteanu, C., Ceobanu, C., Bobâlca, C., and Anton, O. (2010), "An analysis of customer satisfaction in a higher education context", *International Journal of Public Sector Management*, 23(2), pp.124-140

Nadiri, H., Kandampully, J, and Hussain, K. (2009), "Students' perceptions of service quality in higher education", *Total Quality Management & Business Excellence*, Vol. 20 Iss 5 pp. 523-535.

Oldfield, B.M. and Baron, S. (2000), "Student perceptions of service quality in a UK university business and management faculty", *Quality Assurance in Education*, Vol. 8 No. 2, pp. 85-95.

Owino E., Kibera, F., Munyoki, J. and Wainaina G. (2014), "Service Quality in Kenyan Universities: Dimensionality and Contextual Analysis", *European Journal of Business and Management*. Vol.6, No.11, pp 180-194

Owlia, M. S., and Aspinwall, E. M. (1996), "Quality in higher education - a survey", *Total Quality Management,* 7(2), pp.161-171.

Parasuraman, A., Zeithaml, V.A. and Berry, L.L. (1985), "A conceptual model of service quality and its implications for future research", *Journal of Marketing*, Vol. 49 No. 4, pp. 41-50.

Parasuraman, A., Zeithaml, V.A. and Berry, L.L. (1988), "SERVQUAL: a multiple-item scale for measuring consumer perception of service quality", *Journal of Retailing*, Vol. 64 No. 1, pp. 12-40.

Quinn, A., Lemay, G., Larsen, P. and Johnson, D. M. (2009), "Service quality in higher education", *Total Quality Management & Business Excellence'*, 20 (2), pp.139-152

Ramaiyah, A. Md. Zain, A.N. and Ahmad, H. (2007), "Exploring the dimensions of service quality in higher education research", Paper presented Regional conference on quality in higher education.Pretoria, SA. Avaialable at *https://core.ac.uk/download/pdf/11435570.pdf* (accessed 20 March 2016)

Ravichandran, K. Kumar S. A. and Venkatesan, N. (2012), "Student's perception of Service quality", *International Academic Research Journal of Business and Management* Vol. 1, Issue 1, pp.23 - 38.

Sechrest, L. and Sidani, S. (1995), "Quantitative and qualitative methods: Is there an alternative?", *Evaluation and Program Planning*, Vol 18 (1), pp. 77-87.

Srikanthan, G. and Dalrymple, J. (2003), "Developing alternative perspectives for quality in higher education", *International Journal of Education Management*, Vol. 17, No. 3, pp. 126 - 36.

Stewart, D.W., Shamdasani, P.N. and Rook, D.W. (2007), *Focus Groups: Theory and Practice*, Sage, London.

Sumaedi, S., Bakti, G. M. Y. and Metasari, N. (2012) "An empirical study of State University students' perceived service quality", *Quality Assurance in Education*, Vol. 20 Iss 2 pp. 164 – 183

Taylor, S. A., & Baker, T. L. (1994), "An Assessment of the Relationship Between Service Quality and Customer Satisfaction in the Formation of Consumers' Purchase Intentions", *Journal of Retailing, 70*(2), pp.163-178.

Williams, B., Brown, T., and Onsman, A. (2012), "Exploratory factor analysis: A five-step guide for novices". *Australasian Journal of Paramedicine*, 8(3).

Wong, P. H. S. Y. (2012), "Service quality in a higher education context: an integrated model", *Asia Pacific Journal of Marketing and Logistics*, Vol. 24 Iss 5 pp. 755 – 784

Yin, R. K. (2003b), *Case study research: Design and methods*, 3rd edition, London, SAGE Publications.

Zeithaml, V., Parasuraman, A, & Berry, L. (1990), *Delivering quality service: Balancing customer perceptions and expectations*. New York: The Free Press

Zeithaml, V.A., Berry, L.L. and Parasuraman, A. (1993), "The nature and determinants of customer expectations of service", *Journal of the Academy of Marketing Science*, Vol. 21 No. 1, pp. 1-12