

Service Quality in Kenyan Universities: Dimensionality and Contextual Analysis

Dr. Edward Owino^{1*}, Prof. Francis Kibera², Dr. Justus Munyoki³, Prof. Gituro Wainaina⁴

1. School of Business, KCA University, P.O. Box 23604 – 00100 Nairobi, Kenya
2. School of Business, University of Nairobi, P.O. Box 30197 – 00100 Nairobi, Kenya
3. School of Business, University of Nairobi, P.O. Box 30197 – 00100 Nairobi, Kenya
4. School of Business, University of Nairobi, P.O. Box 30197 – 00100 Nairobi, Kenya

*drowino@gmail.com, profkibera@gmail.com, jmunyoki@yahoo.com, giturowainaina@yahoo.com

Abstract

The dimensionality of service quality remains debatable with extant literature revealing divergence in thought. This study examined the dimensions of service quality and tested the existence of a significant difference in service quality perception between public and private university students in Kenya. Guided by a positivist paradigm and cross sectional sample survey, data was collected from 750 randomly selected respondents. A 56 item scale instrument based on performance only paradigm was self-administered to select university students. Factor analysis was employed in determining potent service quality dimensions and Analysis of Variance test used in comparative analysis. A four factor construct was revealed, with service blue print emerging as an additional dimension of service quality in the Kenyan university context. It was established that there exist a significant difference in the dimensions of service quality between public and private university students. This implied that an appreciation of service quality dimensions is imperative in managing student's expectation and that the university managers have to apply contingent service quality practices. The study recommends adequate regulation to standardize service quality irrespective of the service context.

Key words: Kenya, service quality, dimensions, university

1.0 Introduction

The higher education servicescape in Kenya is experiencing profound changes occasioned by increased student enrolment, reduced government funding of public universities, acquisition of middle level colleges by public universities to cater for excess demand and emergence of competitive private universities (Economic Survey 2012; Magutu, Mbeche, Nyaoga, Ongeru & Ombati, 2010). Despite this metamorphosis, Ngware, Onsomu and Manda (2005) observed that supply of public education in Kenya continuously falls short of demand for quality education. Service quality in education is fast gaining prominence with the main stay remaining customer's quest for high service quality.

The construct of service quality has spurred scholarly debate with literature revealing absence of consensus on the measurement of service quality, owing to service intangibility, heterogeneity and multidimensionality (Navarro, Iglesias & Torres, 2005). Empirical review by Kang and James (2004) and Kay and Pawitra (2001) points at convergence in thought that the Service Quality (SERVQUAL) model pioneered by Parasuraman, Berry, and Zeithaml (1985) is widely acceptable in the measurement of service quality. Interest in measurement of service quality is attributed to the relationship between service quality and costs, profitability, customer satisfaction and retention (Shekarchizadeh, Rasli & Hon-Tot 2011). Analysis of the Profit Impact of Marketing Strategy (PIMS) database by Buzzel and Gale (1987) evidenced a positive relationship between perceived quality and organization's financial performance.

1.1 The Construct of Service Quality

A service is an activity that one party offers to another which is essentially intangible and through some form of exchange satisfies an identified need (Zeithaml, Bitner, & Gremler, 2006). Service quality is considered by Zeithaml (1987) as consumer's judgment of an entity's overall excellence or superiority. Kibera (1996) posited that service quality is the conformance of a service to customer specification and expectation. In contrast, Carman (1990) and Cronin and Taylor (1992) observed that service quality centers on the perceived quality. The later position is supported by Sultan and Wong (2010), who described service quality as a form of attitude representing a long run overall evaluation. In tandem with the perception paradigm, this study examines service quality as a form of attitude representing customers' long run overall evaluation of a service after a service encounter.

The protagonist of quality management in organizations, include: Joseph Juran (1950's), Edward Deming (1950's) and Philip Crosby (1980's) whose works culminated in the promulgation of the concept of Total Quality Management (TQM). Magutu et al. (2010) while endorsing adoption of the Quality Management (QM) model at the University of Nairobi observed that different approaches have been adopted for studying quality management in universities; including self-assessment and external assessment of the institutions, accreditation and certification systems. Becket and Brookes (2008) attest to the fact that besides TQM, many more models have been adopted by higher education institutions in measuring service quality, but in their critique they note that these models are industry based including: European Framework for Quality Management (EFQM), Balanced Scorecard, Malcom Baldrige Award, International Standards Organization (ISO) 9000, Business Process Re-engineering and SERVQUAL. They question the ability of service managers to successfully adopt industrial models in a university set up.

Heterogeneity of services, result in service differential between service providers or even within the same service context. Parasuraman et al. (1985), pioneered the gaps model that explains why customers experience quality differential. In a subsequent study, Parasuraman et al. (1988, p.5) gave the definition; "service quality is the degree of discrepancy between customers' normative expectations for the service and their perceptions of the service performance". They applied this conceptualization in the construction of a 22 item scale instrument that they subsequently named the SERVQUAL model. Sureshchandar, Rajendran, and Anatharaman (2002) acknowledged that SERVQUAL forms the cornerstone along which all other works have been actualized.

1.2 Higher Education in Kenya

In 1984, the 7-4-2-3 education system was replaced with the 8-4-4 education system in Kenya. The 8-4-4 education system requires a student to spend eight years in primary schooling, four years in secondary level before joining university where the student spends a minimum of four years depending on the course undertaken. Unlike many education systems in the world, the Kenyan education system does not have the advanced level of education; this has raised quality issues over the years. The 8-4-4 system has been critiqued as negatively affecting the quality of Kenyan education system (Amutabi, 2003 & Muda 1999 in Makori, 2005).

In 1961 the Royal College, Nairobi was elevated to university status and named the University of East Africa. It enrolled 571 students in its debut intake, making it the first university in Kenya (Mutula, 2002). Since then, the higher education system in Kenya has expanded and today Kenya has 29 public and 20 private universities (CUE, 2013). The overhaul of the Kenyan education in 1984 saw public universities double their intake to accommodate ordinary level and advanced level students in the 1990/91 intake. In 1998, public universities citing idle capacity, need to bridge financial gaps and create a window of opportunity for thousands of Kenyans who could not access university education, invested in Module II or the parallel degree programme (Government of Kenya 1988) – Kamunge Report. Module II allowed Self Sponsored Students (SSS) to pursue higher education without being accommodated within the university premises. Private universities emerged soon after to bridge the gap not filled by public universities (Abagi, Nzomo & Otieno 2005). The mounting demand for higher education led the government to establish the Commission for Higher Education (CHE) in 1985 through an Act of Parliament (The Universities Act Cap 210B), to regulate growth and quality in higher education in Kenya. Ngware et al. (2005) noted that CHE had been reduced to a body that charters and issues letters of interim authority but had no control over the service quality of universities thereafter. For this and other reasons, the Commission of University Education (CUE) was enacted to replace CHE in 2013.

1.3 Research Problem

The search for a measurement tool of service quality forms the cornerstone of service quality theory (Gronroos, 1982 & Parasuraman et al., 1985). The Gap-model by Parasuraman et al. (1988) posits the service manager's dilemma as that of not knowing what customers want from the organization. While literature has left a gap in ascertaining a generic tool of measuring service quality, two predominant models exist, the SERVQUAL model and Service Performance (SERVPEF) model. Despite the widespread use of the SERVQUAL model, its dimensionality and operationalization remains ambivalent (Sureshchandar, Rajendran & Anatharaman, 2002). The SERVPEF theorists have advanced a performance based measure and exemplified it over the disconfirmation model (Carman, 1990 & Cronin & Taylor, 1992). Overtime, the use of performance based measure is gaining momentum; however, limited empirical literature is prevalent on the use of performance based models in universities in Kenya.

Parasuraman et al. (1988) advanced five dimensions of service quality (SERVQUAL model). While questioning the completeness of the SERVQUAL model, Sureshchandar et al. (2002) amalgamated the dimensions of service quality into two factors and introduced three additional dimensions; core service, non-human elements and

corporate social responsibility. This study consolidated the five dimensions of SERVQUAL into two; human elements (reliability, responsiveness, assurance, empathy) and non-human elements (physical evidence). Two other dimensions were introduced and tested; core service and service blueprint. The study therefore proposed an examination of an enhanced four factor service quality construct.

The dimensions of service quality in higher education context vary from one institution to another, from one country to another and even from culture to culture, posing a contextual debate. In Kenya, the rapid expansion of university education led to impecunious conditions and deteriorated quality of university education in terms of quality of teaching and research, library facilities, overcrowding in halls of residence, student riots and staff dissolution (Mutula, 2002). Mwaka et al. (2011) adds that the high enrolment levels have led to the quantity vis a vis quality debate and ultimately a phenomenon described as non-education. Under this circumstance, the sustainability of service quality in universities in Kenya remains questionable.

The emerging service quality issues facing universities in developing countries calls for a closer examination of service quality dimensions. On the premise of gaps and variations manifest in the measurement of service quality in universities, this study sought to determine the dimensions of service quality and explain the perceived service quality variation between private and public university students in Kenya. The specific objectives of this study were to determine the dimensions of service quality in universities in Kenya and to establish the existence of a significant difference in service quality perception between public and private university students. The hypothesis of interest was:

H₁: The service quality dimensions in private universities are not significantly different from those of public universities

2.0 Literature Review

Anchoring on the service quality theory advanced by Gronroos (1982) and promulgated by Parasuraman et al. (1985), the study traced the theoretical background of service quality to the pioneering works of Juran (1950s) and Deming (1950s) who laid the foundry works on the measurement of quality in manufacturing plants paving way to the contemporary subject of TQM and specifically service quality (Deming, 1986). The generic determinants of service quality are presented by Parasuraman et al. (1985) as encompassing; reliability, responsiveness, competence, access, courtesy, communication, credibility, security, understanding the customer and tangibles. Subsequently, Parasuraman, Berry and Zeithaml (1988) collapsed the ten dimensions into five determinants reliability, assurance, tangibles, empathy, and responsiveness. They named the five factor construct, SERVQUAL. The five factors; reliability, assurance, tangibles, empathy and responsiveness are acronymed RATER by Buttle (1996).

Service reliability is a dimension of service quality that examines the ability of the service provider to perform services right the first time and keep service promises (Smith, Smith & Clarke 2007). Buttle (1996) considered responsiveness as the willingness to help customers and provide prompt service. Smith et al. (2007) and Kay and Pawitra (2001) both agree that assurance is knowledge and courtesy of employees and their ability to convey trust and confidence. The service provider must instill confidence in customers in the process of transacting, make customer feel safe and display courtesy consistently. Robledo (2001) suggested that empathy is the approachability, ease of access and effort taken to understand customers' needs. Empathy is the individual attention given to customers including showing care and empathy in handling claims and accidents. Tangibility is the physical evidence of the service, meaning physical facilities, appearance of personnel, tools or equipment used to provide the service (Sureshchandar et al. 2002).

Despite the popularity of SERVQUAL model, Gronroos (1982) and Lehtinen and Lehtinen (1982) pointed out that SERVQUAL does not account for three dimensions, technical, functional, and image. Buttle (1996) identifies the shortfalls of SERVQUAL as including paradigmatic objection, gaps model, process orientation, dimensionality, expectations, item composition, polarity and scale points. Carman (1990) notes that SERVQUAL is not generic and needs to be customized to the service in question and he suggests that service quality has more dimensions than the five in RATER scale and that the item factor relationships in SERVQUAL are unstable. Abdullah (2006) for instance, changed the wordings of items in formulating HEDPERF construct. Brown et al. (1993) contest the measurement of service quality using a difference score. A test of dimensionality focused on managerial perception led Johnston et al. (1995) to establish 12 dimensions including: access, appearance, availability, cleanliness, comfort, communication, competence, courtesy, friendliness, reliability, responsiveness, and security. In analyzing the scale item of SERVQUAL, Sureshchandar et al. (2002) observes that most of the items in SERVQUAL focus on human interaction in the service delivery and the rest of the tangible facets of the service and that the instrument failed to address the systemization of a service. They

therefore modified the determinants into five factors core service product, human element of service delivery, systematization of service delivery (non-human element), tangibles and social responsibility. Kang and James (2004) proposed a five factor model comprising functional quality, technical quality, image, overall service quality and customer satisfaction.

2.1 Measurement of Service Quality

Becket and Brookes (2008) observed that quality in universities can be interpreted and measured in a number of different ways and that there is still no universal consensus on how best to manage quality within universities. According to Parasuraman et al. (1988, p. 17) the perceived service quality is “the degree and direction of the discrepancy between consumers’ perceptions and expectations”. This is also known as the disconfirmation paradigm. When Expected Service (ES) is greater than Perceived Service (PS), service quality is less than satisfactory, when ES is less than PS, service quality is more than satisfactory and when ES equals PS service quality equals satisfaction. The introduction of the SERVQUAL model stimulated the search for a general scale and instrument for the measurement of service quality by both scholars and industry practitioners.

Measurement of service quality debate has attracted the performance only theorists. Arising from the work Carman (1990) and Cronin and Taylor (1992), performance only measures avoids the need to measure customer’s expectations of a service, arguing that while the idea of defining service quality in terms of its expectations may sound good in principle, actual measurement of expectation can be difficult. Advancing the performance only paradigm, Cronin and Taylor (1992) took issue with the conceptualization of SERVQUAL. In their study, the perception components of SERVPERF outperformed SERVQUAL, which led them to conclude that the disconfirmation paradigm was inappropriate for measuring perceived service quality. While contextualizing SERVPERF in universities, Abdullah (2006) proposed the HEDPERF construct. Anchoring on the performance only paradigm and empirical evidence, Abdullah (2006) drew the conclusion that HEDPERF was a more reliable and appropriate scale for the higher education sector than SERVPERF. In a rejoicing study, Sultan and Wong (2010) developed the Performance Based Higher Education model (PHed) and they presented PHed as a better instrument that overcomes the weakness of SERVPERF and HEDPERF.

3.0 Research Methodology

Guided by a positivist paradigm and an epistemological element, the study employed a descriptive cross sectional survey. This survey methodology conforms to the research works of Preko, Agbanu, and Feglo (2014) and Nyaribo, Prakash and Owino (2012). According to Sultan and Wong (2010), a descriptive survey design allows for quantitative description of the antecedents of service quality in a higher education context. This research design allowed for generalization of the sample survey findings to the population of university students in Kenya. The appropriateness of cross sectional design also anchored on its versatility, admissibility of questionnaires and its leverage in collection of data from a large number of respondents in a relatively short period.

The population of interest comprised students in public and private universities in Kenya. According to CUE (2013), Kenya had 20 public universities and 29 private universities. The target population comprised of 56,977 undergraduate students in three public universities and three private universities (CHE, 2011). The unit of analysis in this study was registered degree students in the public and private universities. Navarro et al. (2005) described them as the universities immediate customers. The study adopted a stratified random sampling procedure. From the target population, the students were stratified into six universities and a proportionate sampling procedure employed to ensure that the numbers of samples drawn were relative to the size of each stratum. Stratification was further applied in choosing the year of study of the respondents. Because this study was grounded on the perception only paradigm it was considered vital to target students who had more than one year exposure to the services, because they had a better composite perception of the university services. Based on a sample size determination formula by Israel (2009), a final sample size of 1,089 was drawn. The sample size was proportionate to the student population in each university as follows; University of Nairobi = 395, Kenyatta University = 202 and Jomo Kenyatta University of Agriculture and Technology (JKUAT) = 316. The private universities considered in the study were; Strathmore University = 70, United States International University (USIU) = 79 and KCA University = 27. These universities were selected because they had the largest number of students in the 2009/2010 academic year.

A survey questionnaire was used to collect primary data. The questionnaire had multiple choice questions and Likert scale questions. The questionnaire unlike instruments used in past studies had two additional items; core service and service process. Most item wordings were modified to suit the study context as proposed by Carman (1990). The questionnaires were self-administered to randomly selected students in different classes per university. Secondary data from published sources on service quality were obtained from peer reviewed

academic journals and Government publications. The 56 items in the study instrument were subjected to a validity and reliability test. The resulting reliability statistics reflected Cronbach's alpha (α) value = 0.972, which meant the instrument on service quality was very reliable (Ling & Lih 2005 & Field, 2005). A pilot survey was conducted to test the face validity of the study instrument by administering it to 10 university students and 6 experts (university scholars, researchers and industry experts in marketing). Their feedback was used to improve the research instrument that was then adopted in the survey.

4.0 Data Analysis

A total of 1089 questionnaires were administered in six universities out of which 763 were returned resulting in a 70.06 percent response rate which was considered adequate. Following the data editing process, 750 questionnaires were found usable. The response rate from the University of Nairobi was 281 (71.14 percent), Kenyatta University (127 = 62.87 percent), JKUAT (166 = 52.53 percent), Strathmore University (70 = 100 percent), USIU (79 = 100 percent) and KCA University (27 = 100 percent). The final sample size adopted in this study was 750 respondents. In similar studies of institutions of higher learning, Abdullah (2006) administered 560 questionnaires and found 381 usable, Sultan and Wong (2010) considered a sample size of 365 adequate and Shekarchizadeh et al. (2011) used 522 international postgraduate students. This meant that the sample set was in line with criterion validity requirements.

Based on demographic profile a majority of the respondents were in public universities (75.9 percent) with the private universities comprising 24.1 percent (Table 1). This meant that despite privatization of higher education, public universities, which are partly sponsored by the government, still dominate the higher education sector in Kenya. It was observed that amongst the respondents, 54.4 percent were males and 45.6 percent were female, indicating that there were more male students accessing university education as compared to their female counterparts, a clear evidence of gender disparity in universities in Kenya. Most of the respondents (43.5 percent) were in their third year of study, followed by 38.0 percent who were in their second year of study. This sample set was most appropriate for the study, because the second and third year students had repeated exposure to university education and could give a more accurate feedback on a performance scale.

Table 1: Sample Profile

Variable	Frequency	Percent
University Categories		
Public	569	75.9
Private	181	24.1
Gender of Respondent		
Male	408	54.4
Female	342	45.6
Current Year of Study		
Year 1	45	6.0
Year 2	285	38.0
Year 3	326	43.5
Year 4	94	12.5
Where you Get Sponsorship		
Government	319	42.5
Self-Sponsored Students	367	48.9
Other specify	64	8.5
Current University of Study		
University of Nairobi	281	37.5
Kenyatta University	127	16.9
JKUAT	166	22.1
Strathmore University	70	9.3
USIU	79	10.5
KCA University	27	3.6
Sample size	750	100.0

4.1 Factors Influencing Service Quality in Kenyan Universities

The EFA method was used to determine service quality dimensions in universities in Kenya. Preliminary EFA resulted in KMO test statistics of 0.965 which was considered adequate as suggested by Hutcheson and Sofroniu (1999). Bartlett's test of Sphericity resulted in a p-value = 0.000 and was considered significant as it was less than the threshold of 0.05 (Tabachnick & Fidell, 2007). The initial solution was determined using PCA method. The unrotated solution revealed 51 components out of which eight components explained 60.720 percent of the variations leaving 39.280 percent of the variations to be explained by the other 43 components. A varimax with Kaiser Normalization rotation method revealed a four component structure (Table 2). Component one, represented the factor human elements reliability dimension and was explained by 14 items including; "my lecturers display competence in teaching" reflecting the highest factor loading of 0.709, followed by "the conduct of my lectures instill confidence in me" (0.705), "I believe the university gives quality education" (0.684), "my lecturers are approachable and willing to help me" (0.656), "my lecturers have experience in academic research" (0.612). The second component represented the factor human elements responsiveness dimension and was highly explained by "the university staff are quick at responding to my queries" with a factor loading of 0.751, "the university staff are always willing to help me" (0.738) "the university staff are always courteous" (0.722), "The university employees understand the needs of their customer" (0.620) and "the university staff have the customers best interest at heart" (0.619).

The third factor was non-human elements or physical evidence dimension. Variations in university physical evidence were explained to a great extent by appearance of the university lecture halls, having a factor loading of 0.773, followed by "the university has a neat and well stocked library facility" (0.728), "the university has sufficient computers" (0.716), "the academic environments is conducive for learning" (0.629) and "the lecturers use modern equipment's in class like Liquid Crystal Display (LCD) and video" (0.600). The nine items were interpreted as the factor non-human elements or physical evidence of the university. The fourth factor was service blue print or service process and the items with the highest factor loading for service blue print were, "the process followed to register as a student is adequate" (0.699) followed by "I am well informed of the examination procedures" (0.675), "the process followed to get admission to the university is clear" (0.629), "I am well informed of the university rules and regulation" (0.609), "the new student orientation process is informative" (0.605).

The study established four constructs under EFA that define service quality in the Kenyan universities as, human elements reliability dimension, human elements responsiveness dimension, non-human elements (physical evidence) and service blue. No items loaded on the dimension core service, instead the variables that had been conceptualized as the concept core service loaded on human elements reliability dimension. A reliability test using of the four factors using Cronbach's alpha method, resulted in an overall alpha value = 0.912. Human elements reliability had the highest $\alpha = 0.931$, human elements responsiveness had $\alpha = 0.909$, non-human elements (physical evidence) had $\alpha = 0.896$ and service blueprint had $\alpha = 0.869$. This meant the four constructs displayed internal consistency and were reliable (Pallant, 2010).

Table 2: Rotated Component Matrix of the Combined University Data Set

Item	Component				Factor	Cronchbach alpha
	1	2	3	4		
My lecturers display competence in	.709					
The conduct of my lectures instill	.705					
I believe the university gives quality	.684					
My lecturers are approachable and willing	.656					
My lecturers have experience in academic	.612					
My lecturers evaluates me correctly	.599					
The lectures have respect for my opinion	.589				Human Elements Reliability	0.931
The course content is taught as outlined	.575					
The lecturers use effective teaching	.575					
The lecturer facilitate depth of subject	.563					
I feel safe in this learning environment	.532					
The curriculum prepares me adequately for	.526					
Our examinations start at the right time	.505					
The examination is within the course	.502					
The university staff are quick at	.751					
The university staff are always willing to	.738					
The university staff are always courteous	.722					
The university employees understand the	.620					
University staff have the customers best	.619				Human Elements Responsiveness	0.909
University is dependable in handling my	.568					
University registrar's office maintains	.565					
Front office staff have knowledge to	.534					
University provides services as promised	.517					
University perform services right the first	.508					
The university has attractive and		.773				
The university has a neat and well stocked		.728				
The university has sufficient computers		.716				
The academic environments is conducive		.629			Non-human Elements (Physical evidence)	0.896
The lecturers use modern equipments in		.600				
The employees have neat and professional		.596				
The scenic beauty of my university		.573				
The website of my university is		.565				
The university has conducive facilities for		.526				
The university has conducive		.502				
The process followed to register as a			.699			
I am well informed of the examination			.675			
The process followed to get admission to			.629		Service Blue print	0.869
I am well informed of the university rules			.609			
The new student orientation process is			.605			
The process of making payment to the			.577			

Extraction Method: Principal Component Analysis

4.2 Factors Influencing Service Quality in Private Universities in Kenya

Factor analysis was used to test service quality dimensions in private and public universities. A rotated component matrix (Table 3) shows that the first factor was human elements reliability dimension and was

explained by 14 items with, “My lecturers display competence in teaching” reflecting the highest factor loading = 0.664, followed by “I believe the university gives quality education” (0.656), “The conduct of my lectures instill confidence in me” (0.642), “My lecturers have experience in academic research” (0.610) and “The course content is taught as outlined in the curriculum” (0.606). The fourteen items converged on the factor.

The second factor was non-human elements or university physical evidence. The item, “The scenic beauty of my university motivates me much” explained the highest variations (0.768) of university physical evidence, followed by “The registration materials are visually appealing” (0.683), followed by, “The university has conducive facilities for extra curriculum” (0.658), “The website of my university is informative” (0.653), “The university has attractive and conducive lecture halls” (0.633).

Variations in component three were explained to a great extent by 10 items. The item, “the university staff are quick at responding to my queries” had the highest factor loading = 0.782, “the university staff are always courteous” (0.747), “the university staff are always willing to help me” (0.744), followed by “the university communicates effectively of any developments” (0.599), “the front office staff have knowledge to answer my questions” (0.580). The 10 items that loaded in component three were interpreted as the factor human elements responsiveness dimension.

From the EFA process, it was deduced that there are three factors that define service quality in private universities comprising of human elements reliability dimension, non-human elements or physical evidence dimension and human elements responsiveness dimension. No items loaded on the dimensions core service and service blue print.

The three factors extracted from private university data were subjected to a reliability test resulting in an overall Cronbach’s $\alpha = 0.907$. The respective Cronbach’s alpha for the factors were; human elements reliability $\alpha = 0.910$, human elements responsiveness $\alpha = 0.883$ and non-human elements $\alpha = 0.872$. The three constructs had alpha values greater than 0.7 and this meant the three factors were very reliable in explaining variations in the perceived service quality in private universities in Kenya (Nyaribo et al., 2012).

Table 3: Rotated Component Matrix of the Private University Data Set

Item	Component			Factor	Cronchbach alpha
	1	2	3		
My lecturers display competence in teaching	.664				
I believe the university gives quality education	.656				
The conduct of my lectures instill confidence in me	.642				
My lecturers have experience in academic research	.610				
The course content is taught as outlined in the curriculum	.606				
My lecturers are approachable and willing to help me	.599				
My lecturers evaluates me correctly	.598			Human Elements Reliability	0.910
The lecturers use effective teaching methods	.597				
The lectures have respect for my opinion	.565				
The curriculum prepares me adequately for the market	.562				
My lecturers come to class at the promised time	.545				
The lecturer facilitate depth of subject discussion in class	.532				
I feel safe in this learning environment	.530				
The examination is within the course content taught	.504				
The scenic beauty of my university motivates me much		.768		Non-human Elements (Physical Evidence)	0.872
The registration material are visually appealing		.683			
The university has conducive facilities for extra		.658			

curriculum			
The website of my university is informative	.653		
The university has attractive and conducive lecture halls	.633		
The examination materials are visually appealing	.610		
The university has sufficient computers	.600		
The employees have neat and professional appearance	.594		
The academic environments is conducive for learning	.581		
The university has a neat and well stocked library facility	.552		
The university staff are quick at responding to my queries	.782		
The university staff are always courteous	.747		
The university staff are always willing to help me	.744		
The university communicates effectively of any developments	.599		
The front office staff have knowledge to answer my questions	.580	Human Elements	0.883
The university registrar's office maintains error free records	.564	Responsiveness	
The university employees understand the needs of their customer	.557		
The university staff have the customers best interest at heart	.554		
The admission department informs me of the university calendar	.536		
University perform services right the first time	.532		

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 7 iterations.

4.3 Factors Influencing Service Quality in Public Universities in Kenya

A factor analysis of the public universities data set revealed four factors. The first factor was human elements reliability and was highly explained by the item “my lecturers display competence in teaching”, with a factor loading of 0.710, followed by “the conduct of my lectures instill confidence in me” (0.690), “I believe the university gives quality education” (0.673), “my lecturers are approachable and willing to help me” (0.655), “my lecturers have experience in academic research” (0.613).

The second factor was non-human elements or university physical evidence, the highest factor loading on component two being the item “the university has attractive and conducive lecture halls” (0.783), followed by “the university has sufficient computers” (0.748), “the university has a neat and well stocked library facility” (0.729), “the academic environments is conducive for learning” (0.627) and “the lecturers use modern equipment’s in class like LCD and video technology” (0.616). A total of 14 items loaded on component three. The items and respective factor loadings were as follows: “The university staff are always willing to help me” (0.736), “The university staff are quick at responding to my queries” (0.720), “the university staff are always courteous” (0.718), “the university staff have the customers best interest at heart” (0.635) and “the university employees understand the needs of their customer” (0.635). These items were interpreted as the factor human elements responsiveness dimensions.

The fourth component had a total of six items loading on it. Component four was interpreted as the factor service blue print. The item that explained the greatest variation in service blue print were, “the process followed to register as a student is adequate” (0.728), “I am well informed of the examination procedures” (0.678), “the process followed to get admission to the university is clear” (0.656), “I am well informed of the university rules

and regulation” (0.606), “the new student orientation process is informative” (0.600) and “the process of making payment to the university is convenient” (0.598).

It was inferred from the analysis that there were four dimensions of service quality as perceived by public university students in Kenya. They are human elements reliability, non-human elements (university physical evidence) human elements responsiveness, and service blue print. No items loaded on the dimension core service. The four were tested for reliability resulting in an overall Cronbach’s $\alpha = 0.899$. The reliability results of the respective factors showed that human elements reliability dimension had α value = 0.912, non-human elements had α value = 0.899, human elements responsiveness dimension had α value = 0.898 and service blueprint had α value = 0.833. The four factors all had Cronbach's alpha value greater than 0.7, which meant they were all reliable in explaining variations in service quality in public universities. Using factor analysis, the study established that, there are four dimension of service quality in Kenyan Universities.

Table 4: Rotated Component Matrix of the Public University Data Set

Item	Component				Factor	Cronchbach alpha		
	1	2	3	4				
My lecturers display competence in teaching	.710							
The conduct of my lectures instill confidence in me	.690							
I believe the university gives quality education	.673							
My lecturers are approachable and willing to help me	.655							
My lecturers have experience in academic research	.613							
My lecturers evaluates me correctly	.599				Human Elements Reliability	0.912		
The lectures have respect for my opinion	.594							
The course content is taught as outlined in the curriculum	.560							
The lecturers use effective teaching methods	.555							
The lecturer facilitate depth of subject discussion in class	.553							
I feel safe in this learning environment	.526							
Our examinations start at the right time	.505							
The university has attractive and conducive lecture halls	.783							
The university has sufficient computers	.748							
The university has a neat and well stocked library facility	.729							
The academic environments is conducive for learning	.627							
The lecturers use modern equipments in class(LCD, VIDEO)	.616				Non-human Elements (Physical Evidence)	0.899		
The scenic beauty of my university motivates me much	.604							
The employees have neat and professional appearance	.579							
The website of my university is informative	.575							
The university has conducive facilities for extra curriculum	.562							
The university has conducive accommodation facilities	.562							
The university staff are always willing to help me			.736					
The university staff are quick at responding to my queries			.720				Human Elements Responsiveness	0.898
The university staff are always courteous			.718					

The university staff have the customers best interest at heart	.635		
University employees understand the needs of their customer	.635		
The university registrar's office maintains error free records	.544		
The front office staff have knowledge to answer my questions	.529		
University is dependable in handling my service problems	.528		
University provides services as promised	.504		
The process followed to register as a student's is adequate	.728		
I am well informed of the examination procedures	.678		
The process followed to get admission to the university is clear	.656	Service Blue print	0.833
I am well informed of the university rules and regulation	.606		
The new student orientation process is informative	.600		
The process of making payment to the university is convenient	.598		

Extraction Method: Principal Component Analysis.
 Rotation Method: Varimax with Kaiser Normalization.
 a. Rotation converged in 8 iterations.

Based on the combined universities data set results, the dimension with the highest reliability score was human elements reliability dimension, followed by human element responsiveness dimension, the university physical evidence and service blueprint (Table 5). In the private universities, the most reliable dimension was human elements reliability, followed by human element responsiveness dimension and the university physical evidence. Service blue print was not considered critical by private university students. In the public universities, the most reliable dimension was human elements reliability, followed by university physical evidence, human element responsiveness dimension and service blue print. While human elements reliability was ranked the most critical dimension of service quality in the Kenyan University context, the other three dimensions differed along service context.

Table 5: Factor Ranking Based on Exploratory Factor Analysis and Reliability Test

Factor	Private University		Public University		Combined Private and Public Data	
	Cronchbach α	Rank	Cronchbach α	Rank	Cronchbach α	Rank
Human Element Reliability	.910	1	.912	1	.931	1
Human Element Responsiveness	.883	2	.898	3	.909	2
Non-Human Elements	.872	3	.899	2	.896	3
Service Blue Print	-		.833	4	.869	4
Overall alpha	0.907		0.899		0.912	

4.4 Comparative Analysis of Service Quality in Private and Public Universities

Resulting from the preceding factor analysis (Table 5) the study observed that the dimensions of service quality in public universities are different from the dimensions of service quality in private universities. The study

sought to examine whether this difference was statistically significant. A one way ANOVA test was used in testing the research hypothesis one.

H₁: The service quality dimensions in private universities are not significantly different from those of public universities

The combined data set was subjected to five assumptions of ANOVA, with no major violations observed. An examination the four service quality dimensions reveals the existence of a significant difference between the public and private university students along the service quality dimension of human elements reliability with $F(1, 748) = 89.061$, $p\text{-value} = 0.000$ (Table 6). The perceived service quality also differed significantly between the public and private universities along the dimension of human elements responsiveness with $F(1, 747) = 191.971$ and $p\text{-value} = 0.000$. There was a significant difference between public and private university student perception of service quality on the dimension of non-human elements or physical evidence with $F(1, 747) = 102.277$ and $p\text{-value} = 0.000$. The level of student satisfaction differed significantly between the public universities and private universities on the service quality dimension of service blueprint with the results showing $F(1, 747) = 26.905$ and $p\text{-value} = 0.000$. resulting from these analysis, the was noted that there exist a significant difference in the perceived service quality dimensions between public and private university students and hypothesis one was rejected at a five percent level of significance, meaning the dimensions of service quality were significantly different between private and public university students.

Table 6: Analysis of Variance of Combined Public and Private Data

		Sum of	df	Mean	F	Sig.
Human Elements Reliability	Between Groups	46.216	1	46.216	89.061	.000
	Within Groups	388.155	748	.519		
	Total	434.281	749			
Human Elements Responsiveness	Between Groups	98.490	1	98.490	191.971	.000
	Within Groups	383.759	748	.513		
	Total	482.249	749			
Non-Human Elements (Physical Evidence)	Between Groups	79.199	1	79.199	102.277	.000
	Within Groups	578.446	747	.774		
	Total	657.645	748			
Service Blue Print	Between Groups	18.679	1	18.679	26.905	.000
	Within Groups	518.609	747	.694		
	Total	537.288	748			

5.0 Findings and Study Implications

The study explored the completeness of SERVQUAL scale on the basis of paradigmatic objections, process orientation, dimensionality and item composition. The first objective was to investigate the dimensions of service quality among university students in Kenya. Using factor analysis the 51 questions on service quality were decomposed into four dimensions; human elements reliability, human elements responsiveness, non-human elements and service blue print. The dimension with the highest factor loading was reliability. Smith et al. (2007) equally qualified reliability as the most important dimension of service quality. Similarly, Senthilkumar and Arulraj (2010) established three service quality dimensions in Indian universities in order of magnitude as reliability of faculty, excellent physical resources and having a wide range of disciplines. These findings provide empirical proof that a performance only paradigm can produce significant results and act as a parsimonious instrument of measuring customer perception of service quality in a university set up, a position taken by Abdullah (2006) and Sultan and Wong (2010).

By uncovering service blue print as an additional dimension of service quality, the study demonstrated that service quality theorist can discover more service dimensions specific to a service context. Service blue print has been ignored in service quality theory before, with very limited literature advancing it (Sureshchandar et al, 2002). An appreciation of service process flow is a key dimension of service quality as noted by Preko et al. (2014), who established a positive relationship between service delivery process and customer satisfaction. Reliability and responsiveness of university staff is vital and managers of universities should recruit lecturers based on: their ability to demonstrate competence in teaching, ability to enhance student performance, contribution to academic research, ability to instill confidence in learners and ability to exercise academic integrity and honesty in teaching and learner evaluation. The university management should orient its employees on service culture earmarked for reliability and efficiency. The service staffs are deemed reliable if they offer services as promised, perform services dependably and accurately, attend to customers in a timely way and keep

student records correctly. Resulting from the study, university managers should draw lessons on the prudence of training front office staff on responsiveness. The boundary spanners must be quick at responding to customer queries, effective in communicating with customers, courteous, ready to help customers, perform service right the first time and maintain student's records in an organized way.

The results indicate that decision makers must pay attention to the university physical evidence. The physical evidence likely to influence level of perceived service quality to a great extent include: having attractive and conducive lecture halls and lecturing facilities, having a neat and well stocked library facility, a computer laboratory with sufficient facilities, use of modern equipment's in teaching like projectors, video, e-learning platform amongst others. This means managers of higher learning institutions must leverage on technology to encourage learner centered approach to teaching as opposed to the old tradition of teacher centered approach to learning.

The findings indicate that students in private universities experience different service quality from those in public universities. On this premise it is recommended that the regulatory authority (CUE) should standardize the learning environment, to assure all students of equal value or treatment irrespective of where they experience the service. Standardization in this context means enforcement of standard policy guideline, setting of minimum qualification requirement for teaching staff, minimum conditions for a lecturing facilities, acceptable student teacher ratio, minimum requirement for non-teaching staff who can work in a university set up, universities must have a well-stocked library facility, computer laboratory and universities must have adequate field space for extra curriculum activities. Where these policies are already in existence, their operationalization becomes imperative.

5.1 Future Research Direction

This was a cross sectional survey. It is hoped that a longitudinal survey will provide a basis for more informed interpretations in future studies. The study results seem to exemplify the four service quality dimensions, future attention can be paid to unearthing more service quality dimensions in varying service context.

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