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**Exploring private universities service quality in Kenya:
A structural equation modeling technique**

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Abstract:

The Kenyan private higher education sub-sector is considered one of the fastest rising and as such, pivotal within the economy. Whereas achieving higher service quality is challenging among private universities, it is not easy to come up with extraordinary service delivery deliverables which will fully entice customers. Therefore, a university has to discern their customers well, and in turn, provide superior services in order to achieve significant customer satisfaction. The aim of the present research was to empirically investigate specific dimensions of service quality (SQ) that influence customer satisfaction with, service delivery in private universities and the consequent contribution towards internal customers' satisfaction in a Kenyan context. One aspect emphasized is taking cognizant dimensions tested in intricate situations as well as the reality in a developing country which in itself is self-contradictory.

The study employed an adapted HEDPERF survey type with higher education service quality attributes namely; non-academic, academic, reputation, access, programme issues and understanding aspects, and structural equation modelling (SEM). The fit of the HEDPERF model to the data gained through stratified random sampling from 'internal customers' – students and employees was checked using SEM. Results claimed that in respect to private higher education, not all HEDPERF SQ variables are significant to internal customers. Two dimensions of SQ were identified and have the greatest predictive power on internal customers' satisfaction ratings with regard to the quality of service, and these were presented in model(s) to indicate their inter-relatedness in terms of service quality and customer satisfaction. This research presents significant insights towards better understanding of internal customers' attitudes. Private universities will be able to design and improve their internal services and/or internal marketing strategies as per their consumers' preferences in a different cultural context. Finally, the use of SEM in exploring the HEDPERF model is also a valuable contribution.

Keywords:

Service quality, private university, satisfaction, HEDPERF, Kenya.

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Introduction

Service quality and customer satisfaction are fundamental marketing constructs that have grown in prominence among service producing organizations in the business arena. For over three decades, the quality of service has been adopted as a superior operational goal all over the world. However, even with ever growing research in the higher education industry (Alaba & Olanrewaju, 2012; Calvo-Porall, Levy-Mangin & Novo-Corti 2013; Govender & Ramroop 2012; Khodayari & Khodayari 2011; Ong and Nankervis, 2012), the quality of service (SQ) and customer satisfaction (CS) have remained a great concern to many institutions in the service sector. Among private universities it is a subject that cannot be undervalued in management studies and the strategic planning processes. According to Zeithaml, Bitner & Glembler (2009), SQ and CS are inherent attributes that if rightly implemented will create positive customer experiences which would translate to good organizational performance, cost reduction, increased market shares and surpluses. Furthermore, for staying ahead of competition, researchers indicated that customer satisfaction and service quality is the significant predictors (Perez, Juan, Gema & Raquel 2007; Shahin & Samea 2010). The aforementioned attributes, no doubt, become the focus for any company regardless of the sector (public or private) in contemporary customer-oriented market and, service quality remains an important subject for consideration among leaders, managers and researchers (Zahari, Yusoff & Ismail 2008).

Researchers (Brown and Bitner, 2007) and practitioners in the marketing domains allude to the importance for organizations to measure and evaluate the quality of service encounters for the reason that, there is rapid development of and competition for service in both developing and developed realms. Kimani (2011) affirm that several aspects of service quality have cumulative outcomes on its perception, thus they complement each other and therefore cannot be treated in isolation. Therefore, by not paying attention to SQ, organizations may risk their competitiveness, since satisfaction and competitiveness are inter-related (Hishamuddin & Azleen, 2008). Thus, to be successful, companies must look at its service delivery performance as well as the needs and wants of their customers. The continuation of low quality services in a higher education institution (HEI) can have undesirable consequences to the organization for instance, dissatisfaction and customers switching to a competitor. That is the reason why many researchers have constantly emphasized the importance of service quality and customer satisfaction in higher education and beyond (Firdaus, 2006; Calvo-Porall, Levy-Mangin & Novo-Corti 2013; Govender and Ramroop, 2012; Ojo 2010; Quinn, Lemay, Larson and Johnson, 2009).

Service quality and customer satisfaction in educational institutions in the higher education industry in the developing nations remains a challenging task despite receiving varied treatment amid growing attention. For instance, the measurement of service quality and customer satisfaction in a majority of the available studies in higher education (HE) has leant towards the use of traditional SERVQUAL methodology (Rajasekhar, Muninarayanappa & Reddy 2009; Sunanto, Taufiquarrahman & Pangemanan 2007; Shekarchizadeh, Rasli & Hon-Tat 2011) as well as other various instruments to measure the impact of SQ delivery on customer satisfaction within HE (Firdaus 2006; Wang & Shieh, 2006; Calvo-Porall, Levy-Mangin and Novo-Corti, 2013; Govender & Ramroop, 2013). Furthermore, studies regarding the determination of higher education service performance variables have been elusive and, in actual fact, virtually non-existent (Kimani 2011), with no study employing the use of structural equation modelling technique to explore service quality and customer satisfaction in private higher education.

In light of the above, this paper put forward results of an empirical study which employed the methodology developed by (Firdaus, 2006; 2005) to measure service quality in higher education via non-academic, academic, reputation, access, programme and understanding aspects (HEdPERF) and, to determine the significance of each of the service quality dimensions and their influence on satisfaction.

Review of Literature

Conceptualizing Service Quality Concept

Conceptualization of 'service quality' in the higher education context has often, been shrouded by differing views and debates. According to Quinn et al. (2009), defining service quality in higher education institutions has proved to be an uphill task. This has presented higher education institutions (HEIs) with great challenges in the implementation of quality-based practices. The aforementioned researchers have defined service quality in higher education in terms of educational, administration and supporting services.

Service Quality and Customer Satisfaction – The Higher Education Perspective

Many researchers have addressed the association between service quality and customer satisfaction. For example, Zeithaml et al. (2009) assert that service quality and customer satisfaction are closely related, although conceptually they are distinct constructs. Firdaus (2006) study in higher education in Malaysia among 409 students posited that students' perceptions of service quality are constrained within six dimensions namely non-academic aspects, academic aspects, reputation, access, programme issues and understanding. Ham and Hayduk (2003) who explored the relationship between the five dimensions of SERVQUAL found that every dimension of service quality had a positive relationship with satisfaction, with Reliability having the strongest relationship, followed by Responsiveness, Empathy, Assurance and Tangibility. In a study in Malaysian higher education institutions, it was determined that all the quality attributes had a significant relationship with students' satisfaction, and highly correlated with one another (Hishamuddin & Azleen, 2008). Trivellas and Dargenidou (2009) looked at the influence of organizational culture and job satisfaction on the quality of services provided in higher education in Greece. The researchers drew on a sample of faculty and administration members to measure the institute's culture, job satisfaction and the quality in services and internal processes using different frameworks. The results indicated that specific culture variables were linked with different dimensions of higher education service quality.

DeJager and Gbadamosi (2010) carried out a survey among 404 students from universities in South Africa in an attempt to examine the gap between students, perception and importance attached to service delivery, as well as possible predictors of overall satisfaction with their respective universities. Perceptions of willingness to change, students' intention to leave, trust in administration and support, availability of accommodation facilities, and academic performance were found to be significant determinants of students' overall satisfaction with the university explaining up to 30 per cent of its variance. An empirical research by Ravichandran, Kumar & Venkatesan (2012) using HEdPERF among professional engineering institutions in India using a sample of 106 respondents established eleven factors (11) loaded that surpassed original HEdPERF scale. Using the HEdPERF scale, Kumar and Yang's (2014) study of SQ in Malaysia among 275 international undergraduate students in a university found, four determining factors of satisfaction among students namely; reputation, access, programme issues and

career prospects and that satisfaction exerted positive significant effect on loyalty. In light of the aforementioned, this paper aims to explore internal customer's perceptions of private universities services in terms of Firdaus's (2006) service quality dimensions namely: non-academic, academic, reputation, access, programme and understanding aspects (HEdPERF), and to outline strategies to improve HE service quality from the research results.

The Kenyan Private Universities Environment

Universities in Kenya have experienced a tremendous effect on the higher education sector because of the increase and development of private institutions of higher learning. In spite of the successes, Kenyan private higher institutions have continued to experience numerous challenges that may negatively impact on their performance of quality of service delivery hence affecting the perceptions of consumers of their services. Tremendous increase in competition especially from non-traditional sources including e-universities has put pressure on the higher education sector (Chen, Yang & Shiau 2006). Technological pressures have seen huge investments in higher education in many countries in the world in an effort to sustain global competition. According to Roostika (2009), the driving force of wealth creation is knowledge economy which has made access to higher education more and more significant. The aforementioned researcher further notes that although demand has come to exceed supply, it does not make things easier for higher learning institutions in terms of attracting students. Kenya as a developing country is encountering intense competition among local institutions.

An audit of the Kenyan education system indicates that individual private universities display unique sets of characteristics with regard to ownership, formation and structure (Onsongo, 2011). Each of these in turn backs the reputation and standing of the university. At the same time all private universities are accredited by the Commission for University Education (CUE), a body that was established through an Act of Parliament in 1985. This means that there is a level of equality across all players. Kenyan universities like other universities in a developing world have encountered challenges ranging from limited variety of programmes of study, student supply, inadequate physical facilities, financial constraints, increasing competition for university students and staff and attracting qualified staff and students (Mwiria, Ng'ethe, Ngome, Ouma-Odero, Wawire & Wesonga, 2007; Tuitoek, 2006; Ngome, 2010; Oketch, 2004; Otieno, 2007; Mutula, 2002; Wesonga, Ngome, Ouma-Odero & Wawire, 2007).

In light of the above background, the impact of 'competition' amid other challenges on private universities, especially in the Kenyan setting, can be seen as having widely applicable implications for these institutions. Private universities compete directly in the higher education market place for both school leavers and postgraduates. Private providers meeting specific customer criteria often deliver for instance, unique student experience as opposed to what is regarded as a standard student experience (Materu, 2007) emanating from quality of service. They have also been acknowledged to attract 'employee-customers' due to strategies such as retention of skilled human capital (Materu, 2007) and unique experience, which has led to a reduction in professional emigration (Odhiambo, 2011). In view of the above mentioned, with increased global competition, quality of the service may play a bigger role in dictating consumer satisfaction. Furthermore, private universities must be aware of their own offerings and how these are perceived in the higher education marketplace for them to satisfy student requirements as well as employee desires. This research examines internal customers (employees and students) of HE with

the objective of exploring their perception of service quality, and service satisfaction. The perceived experiences of the internal customers are important since, it may provide more objective and practical information for assessing making service quality and customer satisfaction in the HE context.

The HEdPERF Measure of Service Quality and Hypothesis

Notwithstanding the large quantity of research on service quality (SQ) and consumer satisfaction (CS), inadequate empirical evidence exists regarding context specific situations, a case in point, customer satisfaction with the service of private universities bearing in mind how the state of affairs in different countries and cultural backgrounds might determine both the employee and student expectations, perceptions, experience and more so conceptualization of service quality. Since service quality is a construct that fits a specific context (Roostika, 2009) it is important that service quality dimensions are designed for a specific study suiting a specific context like the current one. Furthermore, HEdPERF – Firdaus's (2006) model has been tested 'positively' in a few developed and developing world higher education contexts (Kimani, 2011; Ravichandran et al., 2012; Calvo-Porall et al., 2013; Kumar and Yang, 2014). However, it is apparent that conflicting results have been produced on how the concept of service quality was observed and measured or how institutions can use it to improve their service performance. The research therefore wanted to further test Firdaus's model in a Kenyan higher education context.

Higher education industry service quality studies have shown that SQ is a multidimensional construct. The most current and fast growing set of service quality dimensions reported in the last decade as measure for service quality in the context of HE has been proposed by Firdaus (2005), comprising a six factor structure with 41 items. Firdaus (2006) argues that HE has clear and distinct dimensions, namely; academic aspects, reputation, non-academic aspects, access, program issues and understanding. In our research, we empirically test this argument in a third world country context. The study therefore proposes that: *Each university (HEdPERF) service quality dimension (academic aspects, non-academic aspects, programme aspects, access, reputation and understanding) has a direct positive and significant relationship with customer satisfaction.*

Research Methodology

This study was accomplished by conducting a questionnaire survey. Structural equation modeling (SEM) was used to test the relationships between service quality and customer satisfaction in the context of private university services. While SEM has been utilized in studies in numerous fields, in general, it has gained prominence recently as a standard tool in various scientific disciplines and the HE field, as researchers have started to take cognizance the value of this new statistical approach. For example, SEM has become a preferred data analysis technique for empirical research in the field of higher education (Firdaus 2006; Govender and Ramroop, 2012, 2013; Calvo-Porall et al., 2013). A two-step approach under SEM advocated by researchers (Hair, Black, Babin & Anderson, 2010; Lee, Ooi, Tan and Chong, 2010) was employed, where; an assessment of the model fit was performed prior to evaluating structural model relationships. The fit of the hypothesized model can be ascertained by employing the maximum likelihood Chi-square statistics including other standard analysis of moment structures namely; Chi-square value to degrees of freedom (X^2/df), Root mean square error of approximation (RMSEA), Normed Fit Index (NFI), Relative Fit Index (RFI), Incremental Fit Index (IFI), Tucker-Lewis Index

(TLI) and Comparative Fit Index (CFI) all provided for in the AMOS 21 output – a software package for SEM. The aforementioned goodness-of-fit tests were used to measure the relationships between service quality and customer satisfaction.

In order to obtain a best fit model, the RMSEA must be less than 0.04, NFI, RFI, IFI and CFI must surpass 0.9 value and CMIN/DF (X^2/df) must be smaller than 2 (Hair et al. 2006; Schumacker and Lomax, 2004). The probability value (p-value) was used to test the hypothesis that the fit of the model to the sample data fits perfectly, since the p-value in relation to the Chi-square must be superior than 0.05 ('non-significant') thus symbolizing a better fit. The reliability of the constructs for maximizing internal consistency of multi-dimensional Likert-type questionnaires was analyzed using Cronbach alpha coefficient (Wille 1996 in Raubenheimer, 2004). The Cronbach alphas are greater than the recommended 0.7; this indicates good internal consistency for all the latent variables with respect to their adapted measurement items.

Measures

Through a thorough review of literature, the measures of service quality and customer satisfaction in the questionnaire were designed based on the measurement scale adapted from previous studies in the higher education context (Firdaus, 2006; Kimani 2011). Furthermore, some items conceived in the quality dimensions were included in order to measure customer satisfaction, perceived overall quality and general satisfaction. Due to the modification and adaptation of already existing scales, the researcher used a panel of experts to review the questions and content. In all the measures of the two constructs under investigation, respondents were asked to indicate their level of agreement with service quality items in higher education services on a 7-point Likert scale ranging from 1 = lowest value, while 7 the highest (Leedy and Omrod, 2005).

Data Collection, Sample and Sampling Procedures

This study employed a cross-sectional survey where stratified random sampling strategy was used. The data were collected through a self-administered questionnaire survey. The data were collected from September 2013 to January 2014. There were about five months in this data collection period. The study's target population was all employees (academic and administrative) and students of four select private universities in Kenya. The sample target for the study was determined as 600 students and 250 academic and administrative employees. The four universities were selected based on geographical location and ownership thus faith-based and 'commercial' categories and were included using a stratified purposeful random sampling technique. Sample size was determined using the $S = \frac{X^2 NP(1-P)}{d^2(N-1) + X^2 P(1-P)}$ formula (Krejcie and Morgan, 1970, in Sekaran, 2006: 293) in the 95% confidence level. The researchers' propose a sample size of 380 cases as this is satisfactory to derive adequate effect sizes for structural equation modelling (Kline, 2011).

Before the distribution of the questionnaires, the researchers' briefly explained the purpose of the present study to respondents, and where necessary helped them to complete the questionnaires. It was also made obvious to the participants that participation would remain voluntary and that they were free to leave the study if they so wish, confidentiality and anonymity were also expounded. To ensure higher response and usable rates, questionnaires were distributed in equal proportion per university filled out and returned through a 'drop and pick' approach to students randomly in classrooms and they were

given about 15 to 20 minutes to fill them in. On the other hand, the majority of academic and administrative staff emphatically refused to participate in this study citing several reasons like timing of the study etc. for their complete refusal to participate in the study; some did not fill in the questionnaires distributed to them, while others lost the questionnaires. All in all, these did not affect the response rate thus a satisfactory response rate was achieved. Through these processes, about six hundred and seventy completed questionnaires were collected. After excluding missing data or incomplete response, 655 responses were used in the data analysis.

The socio-demographic characteristics of the final percentage of the sample were: the majority of the employee respondents were administrative (59.4%) while academics (40.6%). Most respondents were male (54.9%) and female (44.4%). With regard to age, the majority of the employees were middle aged or younger (47.4%) formed 30 to 39 years, (31.6%) were aged 40 to 49 years and (19.5%) were below 30 years. A majority (78.9%) had worked up to 10 years, with (77.8%) academics and (79.7%) administrative where PhD (27.8%). In terms of management 42.1% were middle managers, technical (9.8%) and senior managers (6.8%). In contrast, the students sample percentage profiles included; students aged between 18 and 23 years (66.3%), there were more female students (51.6%) in the full-time degree programme than there were male (48.4%) with those pursuing first degree (70.5%) and postgraduate degree 9% with first year's (37.4%) and second year (30.1%), third (20.3%) and a few (7.1%) in fourth year of studies.

Data Analysis

The researcher used the Statistical Package for the Social Sciences (SPSS) version 20 and AMOS 21 to conduct exploratory factor analysis (EFA), structural equation modeling (SEM) test the relationships, since Schumacker and Lomax (2004) asserted that SEM is clear and testable, and competing models can be analyzed, synthesized and understood and, their effect whether direct, indirect or both can be investigated.

Results of Empirical Analyses

Scale Reliability and Validity

The dimensions of the measurement constructs were tested by applying the Cronbach alpha coefficients using Stepwise Reliability Analysis and the following coefficients were produced for students: non-academic aspects 0.941; academic aspects 0.928; reputation 0.889; access 0.923; programmes 0.854; understanding 0.853 and overall satisfaction 0.933. Similarly, employees' coefficients were: non-academic aspects 0.758; academic aspects 0.763; reputation 0.87; access 0.853; programmes 0.817; understanding 0.807 and overall satisfaction 0.819. The aforesaid reliability coefficient alphas were acceptable (exceeds 0.7); this implying that the measurement instruments were fairly reliable. Furthermore, internally inconsistent items were sequentially deleted, therefore maximizing the scales' reliability at 0.70 (Sekaran and Bougie, 2010: 325).

This study employed various validity measures where the researchers ensured adequate coverage and representative set of items that capture the concepts, evaluated the questionnaire for relevance of the items that try to capture the targeted variables. Construct and discriminant validity were assessed through Exploratory Factor Analysis using Principal Component Analysis with oblique method rotation to summarize the factor loadings under study (Browne, 2001). A factor loading of 0.4 was employed to indicate that the structure was well defined (Hair et al., 2010).

Factor Analysis Results

Exploratory Factor analysis (EFA) was used to reduce all the measurement attributes in a large number into smaller sets of underlying dimensions in order to maximize the validity of the instruments (Hair et al., 2006). The use of Likert scale questionnaires prompted the researchers to opt for the EFA technique for the factor analysis. According to Hair et al. (2010) and Zikmund, Babin, Carr & Griffin (2010), the underlying purpose is to determine stronger linear combinations of many variables that aid in investigating the interrelationships effectively without pre-conceived hypotheses. Therefore, in order to clarify the pattern of relationships among the service quality dimensions, factor extraction was done by use of Principle Component Analysis (PCA) (Field, 2009), which was used to reduce the many factors to more manageable sets with strong correlations and also enabled understanding of variables' structures (Hair et al., 2006). The oblique rotation method proposed by Jennrich and Sampson (1966) was used to summarize the construct's structures of the variables studied (Browne, 2001). The 0.4 was regarded as an acceptable factor loading cut-off point (Hair et al., 2010).

As illustrated in Table 1 (student sample) and Table 2 (employee sample) below, four factors have been extracted for student sample while five factors were extracted for employee sample that loaded on each factor. As given in Table 1, the four factors were labelled and described as Factor 1 non-academic (administration quality), Factor 2 was named health quality (understanding), Factor 3 programme quality, and Factor 4 was named satisfaction. Similarly in Table 2, the five rotated factors were described as follows: Factor 1 - Satisfaction, Factor 2 - Quality of Academic Programmes, Factor 3 - Academic Quality, Factor 4 - Health Quality, and Factor 5 - Credibility. These factors have been identified in previous studies (DeJager and Gbadamosi, 2010; Firdaus, 2006; Kumar and Yang, 2014; Ravichandran et al., 2012).

Table 1 Rotated factor analysis for modified students' service quality attributes.

Quality Attributes	Factor Loading			
	Factor 1	Factor 2	Factor 3	Factor 4
Understanding 1	--	.738	--	--
Understanding 2	--	.737	--	--
Understanding 3	--	.780	--	--
Programme 1	--	--	.743	--
Programme 2	--	--	.705	--
Programme 3	--	--	.785	--
Programme 4	--	--	.655	--
Non-academic 1	.711	--	--	--
Non-academic 2	.722	--	--	--
Non-academic 3	.817	--	--	--
Academic 1	.773	--	--	--
Academic 2	.792	--	--	--

Quality Attributes	Factor Loading			
	Factor 1	Factor 2	Factor 3	Factor 4
Reputation 1	.482	.613	--	--
Reputation 2	.610	.457	.417	--
Access 1	.576	.450	--	--
Access 2	.574	.505	--	--
Satisfaction 1	--	--	--	.868
Satisfaction 2	--	--	--	.751
Overall quality	--	--	--	.579

Table 2 Rotated factor analysis for modified employee service quality attributes

Quality Attributes	Factor Loading				
	Factor (1)	Factor (2)	Factor (3)	Factor (4)	Factor (5)
non-academic 1	.607	--	--	--	--
non-academic 2	--	--	--	--	--
non-academic 3	.727	--	--	--	--
non-academic 4	.844	--	--	--	--
Academic 1	--	--	.786	--	--
Academic 2	--	--	.652	--	--
Academic 3	--	--	.739	--	--
Academic 4	--	--	.823	--	--
Reputation 1	.758	--	--	--	--
Reputation 2	.662	.468	--	--	--
Access 1	.794	--	--	--	--
Access 2	.678	--	--	--	--
Access 3	.668	--	--	--	--
Satisfaction 1	.544	.422	--	--	--
Satisfaction 2	.755	--	--	--	--
Programme 1	--	.714	--	--	--
Programme 2	.414	.657	--	--	--
Programme 3	--	.831	--	--	--
Programme 4	--	.769	--	--	--
General quality	--	--	--	--	.873
Understanding 1	--	--	--	.813	--
Understanding 2	--	--	--	.778	--
Understanding 3	.474	--	--	.567	--

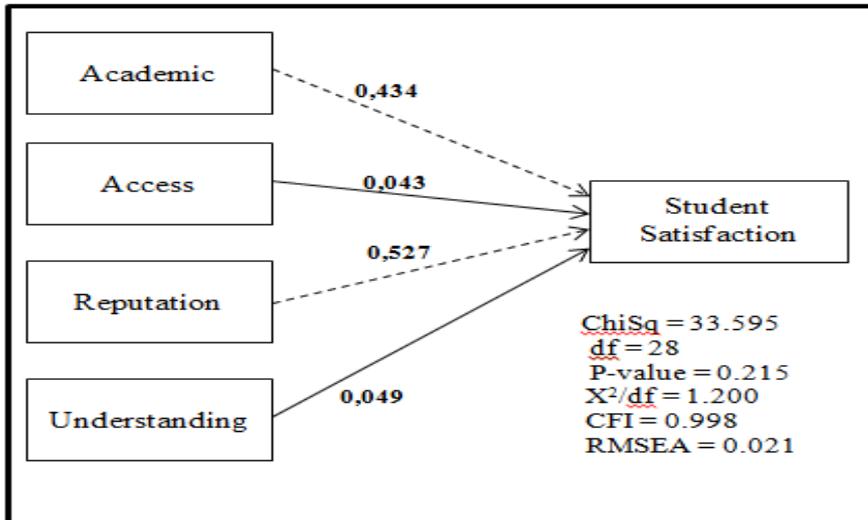
Structural Equation Modelling Results and Hypotheses Verification

Structural Equation Modelling with latent variables (SEM) is a process that is used to analyze relationships among variables, was used to predict the variance in the dependent variables through regressing (CS) against the independent variable (SQ) (Sekaran, 2006: 406). According to Kline (2011), SEM is a combination of statistical techniques which allow a set of relationships between independent variable(s) and dependent variable(s) to be examined. In this study SEM was preferred because it enables clarity and testability of competing models therefore enhancing the potential to further understand the analysis (Schumacker and Lomax, 2004). Through SEM quality of results are enhanced since various linear models in an integrated manner fit and their effect whether direct, indirect or both effects can be explored. Confirmatory Factor Analysis (CFA) was performed to purify the proposed models before testing the structure model and thereafter examine the underlying relationships between the two constructs under study (Lee et al., 2010; Schumacker and Lomax, 2004). By using Analysis of Moment Structures (AMOS) research data was fitted to the observed data and a critical ratio (CR) estimate value $> = 1.96$ suggested significance of the causal path between the latent variables (Kline, 2011; Hair et al., 2010).

The structural models for the student and employee samples were assessed in terms of: their structural and measurement fit measures, the contribution of every assessed path coefficient, the extent of each expected path coefficient measurement and the bearing of each structural path coefficients. To assess the fit of the model to the data, Chi-Square value, Chi-square per degrees of freedom, RMSEA, CFI, CMIN/DF and the p-value were computed. An acceptable fit for the student sample was found ($X^2 = 33.5$, $df = 28$, $RMSEA = 0.021$, $CFI = 0.998$, $CMIN/DF = 1.20$) and, the p-value was 0.215, which is non-significant at the 5% level, implying that the proposed conceptual model for student sample (Figure 1) fitted to the research data was indeed a good one. Furthermore, the aforementioned results show that the required values for the goodness of fit indices for the proposed factor structures from the student sample for private higher education (PHE) service quality and customer satisfaction are all supported (Hair et al., 2010; Kline, 2011; Browne and Cudeck, 1993; Hu and Bentler, 1999).

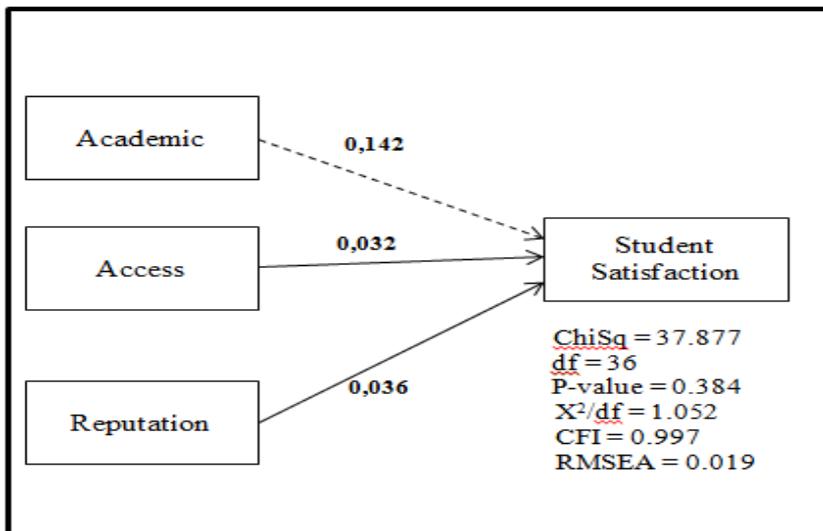
On the employee sample, the fitted model (Figure 2) had a Chi-square test statistic of 37.9 with a p-value 0.384, which is non-significant at the 5% level, thus the employee conceptual model (Figure 2) fitted to the research data as well (Hair et al., 2010). Furthermore, the CFI was 0.997, the RMSEA was 0.019, x^2/df was 1.052 with a p – value of 0.384 and the NFI, IFI, TLI were greater than 0.9, all confirming a good fit of the model (Hair et al., 2010; Hu and Bentler, 1999).

Fig 1 A model of the relationship between private university service quality and student satisfaction toward a university



Source: Author's own elaboration

Fig 2 A model of the relationship between private university service quality and employee satisfaction toward a university



Source: Author's own elaboration

Whereas structural model results showed that the academic, reputation understanding and access have positive relationship with satisfaction among the students, going by the regression weights (Table 3), it is evident that only 'understanding' and 'access' significantly (5% level of significance) influenced the students' satisfaction of private universities services. It was also found that employees' satisfaction was significantly influenced by 'access' and 'reputation' dimensions of private universities service quality.

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It is also interesting to note that the academic aspect (employee sample) has a negative coefficient estimate, whilst access and reputation have positive coefficients.

Table 3 Regression weights – private university services

Quality dimension	Student Result				Employee Result			
	Estimate	SE	t-value	p-value	Estimate	Standard error	t-value	p-value
Academic	0.072	0.093	0.782	0.434	-0.055	0.037	-1.468	0.142
Reputation	0.085	0.135	0.632	0.527	0.494	0.236	2.092	0.036
Understanding	0.115	0.062	1.852	0.049	-	-	-	-
Access	0.258	0.129	2.002	0.043	0.438	0.204	2.146	0.032

Source: 2013 fieldwork by author

Discussion and Study Implication

The SEM model results, including standardized path coefficients and t-values, shown in Table 3 above revealed that the ‘direct’ effect of the student-customer ‘understanding’ quality ($\beta = 0.115$; $p < 0.05$) and ‘access’ quality ($\beta = .258$; $p < 0.05$) were significant. Regarding the employee-customers, ‘access’ quality ($\beta = 0.438$; $p < 0.05$) and ‘reputation’ quality ($\beta = 0.494$; $p < 0.05$) were also significant. These results indicate that service quality is positively related to customer satisfaction. In addition, Table 4 indicates that ‘access’ quality and ‘reputation’ quality are the most important constructs affecting customer satisfaction in private university services (De Jager and Gbadamosi, 2010: 4; Firdaus, 2006; Owlia and Aspinwall, 1996). The other service dimensions, programme and non-academic, were found not to fit the model.

Understanding specifically student needs with reference to counselling and health quality services will lead to greater satisfaction (Watson, 2003). The aforementioned also emphasizes the importance of understanding the service quality dimensions in explaining student satisfaction. Thus, it is suggested that ‘access’ and ‘understanding’ dimensions should be incorporated when examining student satisfaction. Accordingly, service quality managers at universities should emphasize firstly ‘understanding’ and later the other dimensions. Firdaus (2006) also found that access and understanding qualities of service were among the top six variables that positively correlated with service satisfaction from student viewpoint in tertiary education.

In HE environments, the importance of access and reputation as factors that may influence the perception of quality of university service in turn increase satisfaction has been accredited (DeJager and Gbadamosi, 2010; Marx and Erasmus, 2006). Employees in service organizations have been widely acknowledged for organizational efficiency, considering their responsiveness and understanding (Parasuraman, Berry & Zeithaml, 1988), allegiance (Farber and Wycoff, 1991), satisfaction (Voss, Tsikriktsis, Funk, Yarrow & Owen, 2005), contact (Soteriou & Chase, 1998), motivation (Hays & Hill, 2001) and competence (Parasuraman et al., 1988). In an attempt to explore the extent to which the service quality and customers satisfaction are interrelated, DeJager and Gbadamosi, (2010) assert that employee expectations of a university depend on their experiences and individual preferences (DeJager and Gbadamosi, 2010), and this therefore

determines their decision-making process for instance, for maximum commitment. If processes and personnel crucial to service quality are well implemented, then, the organization would experience superior service quality which will in turn, enhance loyalty (Marx and Erasmus, 2006). Therefore, university service providers (administration support) need to be cognizant of drivers of service quality and should work and implement plans that would improve customer satisfaction.

By empirically exploring the relationships between service quality and customer satisfaction in the HE context, through data collected from survey conducted in Kenya, the importance of this findings is evident. A number of theoretical and managerial implications for various stakeholders such as universities, government, higher education stakeholders and university service managers are explained. The rapid expansion of university education and demand for quality are compelling universities to devise ways to enhance quality service so as to sustain stiff competition in the HE industry. Given the competition, an understanding of the factors influencing customers' perceptions of service is useful for universities so they can prioritize their resources in an effective way. For example, 'access' quality and 'reputation' quality were found to be the most significant dimensions that have a strong impact on customers' satisfaction with university services. In addition, 'academic' quality and 'understanding' quality were found to be related to satisfaction. In order to increase customer satisfaction, universities need to ensure they understand the needs and expectations of their customers in order to improve HE services. This could lead to a multiplicity of effects in that greater service quality and customer satisfaction will lead to higher customer allegiance.

This study employed structural equation modelling (SEM) using the AMOS statistical package to test the measurement and structural models. Employing complex statistical methodological tools has been limited in previous studies and more so those done in a developing economy context i.e. Kenya. Therefore, this study sets precedent on the research in higher education sector. It also contributes to identifying measures for the private universities higher education that can derive the different perceived service quality and customer satisfaction by employing the exploratory factor analysis and confirmatory factor analysis to evaluate the service quality of Kenya's private higher education services from the students' and employees' standpoints. Moreover, it also attempts to abate the scarcity of the studies in the domain of HE from the emerging countries context.

Concluding Remarks and Recommendations

Considering that not all HEDPERF dimensions fitted into the sample data sets, this study bears testament that further studies are necessary to explore the primary reasons to be able to provide more concrete generalizations. It is vital that university service providers focus on improving academic and understanding qualities by implementing strategies that will effectively enhance these services among employees and students.

With respect to increasing to reliability of their customers', service providers should be more customer-focused and furthermore come up with ways to positively manage and influence their customers' relationships by adopting useful methods. Out of the mutual influence within the customers themselves this will translate to increased satisfaction. Researchers (Becket and Brookes, 2008; Trivellas and Dargenidou, 2009) have shown that efficient and effective internal communication and embracing a service culture within

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service processes are crucial in improving SQ within HE, and a lack thereof will decrease customers' faith in administration and support.

Another important factor that may influence the perception of the quality of university service is by regularly evaluating the SQ through data collection. Embracing the data collection activity will make both the employees' and students' feel part and parcel of the institutional decision making process. This will enable HE institutions to get to know their customers, the needs of the market and, align services to suit these market needs thereby, offering superior quality to all their customers which should then translate to customer satisfaction. In short, service providers need to include satisfaction surveys in their quality frameworks.

The quality of services is typically accredited to teamwork and support of the administrative staff as well as the academic staff with the students. If students realize that the staff is not concerned with and caring of them they become demoralized, consequently leading to displeasure.

Some form of continuous training and development is paramount. Such training should help contribute especially to employee satisfaction. Hence, efforts should be directed towards improving employees' awareness and skills because dependability and promise have a direct relationship with employee competence. Knowledge and skills training are a never-ending process, hence without refresher sessions and advanced training there is a risk of the employee 'becoming stale' and sloppy (less attention of quality and detail); eventually becoming demotivated. Management can enhance the competence and/or knowhow and develop capacity by involving both operational staff and experts in sessions, socialization and good training programmes.

Limitations and Avenues for Future Research

High data collection costs limited the study to be conducted in two regions namely; Nairobi and Central. Even so, the sample justifies the results of the study and could be duplicated to other regions in Kenya. This research is also limited to assessing private university services from the perceptions of 'internal customers'. It would be worthwhile to examine perceived differences of private and public university services from the point of view both of internal customers and by extension the external customers. Future research could adopt the HEdPERF framework and consider a mixed method approach to enrich such a study employing SEM to investigate other service related variables for instance, demographic variables to ascertain the generalizability of the model. A longitudinal study could help follow changes in customers' perceptions of university service performance and customer satisfaction attributes over time.

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