

Educational Service Quality and Students' Satisfaction in Public Universities in Kenya

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Abstract

The purpose of this study was to investigate the relationship between educational service quality and students' satisfaction in public universities in Kenya. Specifically, the study explored the dimensions of educational service quality in the universities. Further, the study determined the relationship between educational service quality dimensions and students' satisfaction in the universities. The study adopted cross sectional research design. Eight universities were sampled using stratified random sampling. The study respondents were 1062 third and fourth year undergraduate students selected using proportionate stratified random sampling. The data generated from the study were analyzed using descriptive statistical analysis, factor analysis, and regression analysis. The study found that educational service quality in the universities was determined by ten reliable dimensions. The dimensions were quality of teaching facilities, quality of library service environment, provision of internet services, availability of text books in libraries in the universities, administrative service quality, lecturer quality, quality of instructional practices, reliability of university examinations, perceived learning gains and quality of students' welfare services. Independently, quality of teaching facilities, availability of textbooks in libraries in the universities, administrative service quality, reliability of university examinations, perceived learning gains and quality of students' welfare services were significantly and directly related to students' satisfaction at $p < .05$. Availability of internet services was directly but negatively related to students' satisfaction. Quality of library service environment, lecturer quality and quality of instructional practices were directly but insignificantly related to students' satisfaction.

Key words: University, Education, Service, quality, students', satisfaction, dimensions

1. Introduction

Public universities play a key role in training human resources favourable to attainment of the United Nations Millenium Development Goals (World Bank, 2010a). However, diminishing public funding, privatization, increase in students' enrolments and rapid expansion threaten the capacity of the universities to fulfill this core mandate (Johnstone, 2009). Confronted by these constraints, there have been concerns that the universities are not delivering a fulfilling university experience that facilitates the development of a graduate competitive in the labour market (UNESCO, 2014). Indeed, universities are hard pressed by stakeholders to pursue excellence in educational service with the ultimate aim of ensuring that customers, including students, are satisfied (World Bank, 2010b). Service quality in higher education is described as a measurement of how well higher education institutions conform to customers' needs and expectations (Govender, Veerasamy & Noel, 2012). Dib and Alnazer (2013) concede that the ultimate aim of providing quality service is to ensure that customers are satisfied with the service experience and the service provider.

Hansemark and Albinsson (2004) describe satisfaction as an overall customers' attitude towards a service provider, or an emotional reaction to the difference between what customers anticipate and what they receive in terms of quality of service delivered. Michaela and Antony (2007) submit that customers in universities include parents, students, staff, community, funding agencies and employers. However, students have been identified as the primary customer in universities (Karami & Olfati, 2012; Firdaus, 2006). According to Hanaysha, Abdullah and Warokka (2011), universities must continuously build and maintain stronger relationships with students by providing them with quality educational service and constructive learning environments. Russell (2005) urges universities to be concerned about students' perception of educational service quality as it relates to their satisfaction and human capital development. Arokiasamy and Abdullah (2012) also emphasize the need for universities to pay attention to educational service quality in order to continually improve the learning environment for the students, meet the expectations of other stakeholders, demonstrate institutional effectiveness and gain competitive advantage.

According to Firdaus (2005), educational service quality in universities is a multidimensional construct which is often approached from a range of indicators. Although there is no consensus on the dimensions that constitute educational service quality, existing literature reveal that the dimensions of quality of academic resources, teaching quality, administrative service quality, and quality of student support services have been consistently applied in higher education (Manzoor, 2013; Voss & Gruber, 2006). The dimensions have an important value in conceptualization of higher education service quality and students' satisfaction (Firdaus, 2006). According to Chua (2004), the dimensions should be explored in order to provide deeper understanding of the educational service quality dimensions embraced by students and how the dimensions impact on students' satisfaction in specific higher education contexts.

Existing studies are in agreement that educational service quality is related to students' satisfaction (Arokiasamy & Abdullah, 2012; Yadav, 2012). However, findings have been inconclusive on the dimensions that significantly contribute to students' satisfaction and require improvement in universities (Douglas, A., Douglas, J. & Barnes, 2006; Khan, Ahmed & Nawaz, 2011; Wei & Ramalu, 2011). Douglas *et al.* (2006) study at Liverpool John Moores University in England found that quality of academic resources was not important in determining students' satisfaction. However, Encabo (2011) study in Brokenshire College in Philippines found that quality of academic resources was the most influential factor of students' satisfaction. Arambewela and Hall (2009) study in Australia concluded that teaching quality impacts on students' satisfaction in universities. Students' satisfaction was significantly related to the university having lecturers who are knowledgeable in their field of specialization, lecturers who are accessible to students for consultation, and lecturers who provide feedback to students. However, Farahmandian, Minavand and Afshardost (2013) study in universities in Malaysia found that teaching quality was not significantly related to student satisfaction.

Tuan (2012) research in universities in Vietnam found that administrative service quality was significantly and positively related to students' satisfaction. This finding demonstrates that the knowledge of the functioning of a university, skills and service attitude of administrative staff play a very important role in increasing students' satisfaction. Contrary to this finding, Ahmed and Masud (2014) research in universities in Malaysia found that administrative services were not significantly related to students' satisfaction. However, their research found that quality of academic resources, lecturer quality and quality of academic programmes had a direct and significant relationship with students' satisfaction. Manzoor (2013) study in universities in Pakistan found that students' welfare services had significant positive effect on students' satisfaction ratings. Existing empirical research in universities in South Africa, Ghana and Ethiopia reveal that students were not satisfied with the quality of university experience (Ghadamosi & De Jager, 2009; Gyamfi, Agyeman & Otoo, 2012; Takaro, 2014).

Over the last two decades, public universities in Kenya have expanded rapidly without adequate financing from the Government (ROK, 2007). Students' enrolment increased from 139,470 students in 2010/11 to 276,349 students in the 2013/14 academic year (ROK, 2014). This translates to 98.1 percent growth in enrolment in a period of three years. Rapid expansion without adequate financing has raised concerns from stakeholders that the average quality of educational service in the universities has declined (Ngethe, 2013; Ndirangu & Udoto, 2011). In response to the concerns, public universities in Kenya are required by the Government to implement Total Quality Management Practices such as International Organization for Standardization (ISO) systems. The initiative is aimed at improving service delivery and ensuring that customers, including students, are satisfied with the university experience (Owino, Oanda & Olel, 2011).

The Commission for University Education [CUE] published and circulated Universities Standards and Guidelines aimed at quality control and improvement in university education in Kenya (CUE, 2014). The guidelines specify the qualifications criteria for academic staff, demands universities to provide adequate lecture rooms/theatres, adequate laboratory facilities, quality university library, and adequate and effective students' welfare services commensurate to students' enrollment. The universities are also required to promote highest standards of teaching and learning and ensure that students acquire skills consistent with educational goals and aspirations of Kenyans. The guidelines also emphasize the need to ensure that administrative staff contributes to the mission and vision of a university (CUE, 2014). However, the extent to which the quality control and improvement initiatives have impacted on educational service quality and students' satisfaction in the universities remains unknown. This study therefore sought to determine the relationship between educational service quality and students' satisfaction in public universities in Kenya with the ultimate aim of identifying educational service quality improvement priorities. The study was guided by the following objectives:

- i. To explore the dimensions of educational service quality in public universities in Kenya.
- ii. To determine the relationship between educational service quality dimensions and students' satisfaction in public universities in Kenya.

2. Methodology

The study used cross sectional design. According to Bryman and Bell (2007), cross-sectional design entails collection of data from representative sample of a population at a given time in order to detect patterns of association between the variables of study. Cross sectional design was selected because it enabled the researchers collect data at a single point in time hence minimizing time related events that were likely to impact on educational service quality and students' satisfaction in the universities. Eight universities representing 36 percent of the accessible public universities participated in the study. Data were collected from 1062 third and fourth year undergraduate students using educational service quality and students' satisfaction questionnaire designed by the researchers. Educational service quality was measured using sixty four (64) predetermined questionnaire items as follows. Twenty six items measured the quality of academic resources, quality of administrative service (eight items), teaching quality (22 items) and quality of students' welfare services (eight items). Students' satisfaction was measured using six items. All the items were placed on a five point Likert and Likert type scale.

To ensure validity of the questionnaire, the study used face and content validity which was achieved by seeking expert opinion. Piloting was done in one of the public universities in Kenya in order to determine the Cronbach's Alpha coefficient of reliability for the subscales and the entire scale. The pilot university was exempted from the main study. The sample size for the pilot study was 110 third and fourth year undergraduate students representing 10 percent of the sample size of the main study (Mulusa, 1990). The pilot study found that the overall Cronbach's Alpha coefficient for the entire scale (70 items) was 0.942. The Cronbach's Alpha coefficients for the different subscales were: Quality of academic resources (0.882); administrative service quality (0.921); teaching quality (0.923); quality of students' welfare services (0.787); and students' satisfaction (0.883). All the Cronbach's Alpha coefficient values were >0.70 hence the entire scale and subscales were considered reliable and used in the actual study (Pallant, 2005). Data from the main study were analyzed using factor analysis, descriptive statistics and regression analysis. Interpretation of data was done with reference to the research objectives and the results are presented in the following sections.

3.1 Dimensions of educational service quality in the universities

Principal Component Analysis (PCA) was applied in determining the dimensions of educational service quality in the universities. The analysis was necessary in order to determine whether the questionnaire items accurately measured the intended dimensions (Yong & Pearce, 2013). Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's test of sphericity results for the entire scale on educational service quality were examined. KMO test determined whether enough items predicted each dimension of educational service quality. Bartlett's test was used to test whether the questionnaire items were correlated highly enough as to provide a reasonable basis for factor analysis (Field, 2009). The analysis found that the KMO measure of sampling adequacy for the scale was .930. The score was considered adequate because it indicated that enough items grouped into distinct dimensions of educational service quality (Leech, Barret & Morgan, 2005).

The Bartlett's test results indicated Chi-Square value = 32251.171 which is statistically significant at $p < .05$. According to Field (2009), a significant Bartlett's test infers that the variables in the scale had high correlation as to provide a reasonable basis for factor extraction.

Varimax orthogonal rotation was applied in extracting the dimensions of educational service quality. The study settled for varimax orthogonal rotation because it reduces the complexities of factors by maximizing variance of loadings on each factor and therefore generating a simple structure as conveyed by Field (2009). The rotated component matrix generated eleven (11) components as summarized in Table 1.

Table 1: Rotated Component Matrix for Educational Service Quality Scale Items

Questionnaire items	Component											Dimension and percentage variance
	1	2	3	4	5	6	7	8	9	10	11	
Administrative staff are friendly and approachable	.789											Administrative service quality 9.45%
Administrative staff demonstrate sincere interest to solve students problems	.770											
Administrative staff provide prompt and accurate services	.757											
Administrative staff communicate well with students	.747											
Administrative staff show positive work attitude towards students	.741											
Administrative staff are always available and willing to explain doubts to students	.731											
Administrative staff pay attention to detail of the services sought by students	.711											
Administrative staff are well versed with university rules and procedures	.662											Quality of instructional practices 8.71%
Lecturers demonstrate adequate preparation for the lessons	.731											
Lecturers provide course outlines at the beginning of the semester	.711											
Lecturers stimulate students thinking by asking challenging questions	.695											
Lecturers provide clear expectations on course work and assessment at the beginning of a semester	.691											
Lecturers ensure they complete the syllabus	.639											
Lecturers set assessment tasks that challenge students to learn	.588											
Lecturers integrate both theory and practical learning experiences	.512											Perceived learning gains 7.61%
My degree programme has helped me develop my ability to communicate			.777									
My degree programme has empowered me to tackle unfamiliar problems			.776									
My degree programme has developed my ability to conduct research			.750									
My degree programme provides opportunities for me to interact with employer and industry			.747									
My degree programme has helped me develop my ability to work as a team member			.701									
My degree programme has helped me acquire sufficient practical skills in my area of specialization			.662									
My degree programme has helped me develop ICT skills			.611									Students' welfare services 6.75%
The university provides adequate support mechanism for needy students				.718								
The university provides adequate career counselling and advising				.704								
The university catering facility fairly meets students' catering needs				.664								
The university promotes an independent students' union				.654								
The university involves students in decision making				.632								
The university has adequate personal guidance and counselling services for students				.609								
The university has adequate sporting facilities				.604								

Table 1 (Continued)”

Lecture halls and rooms have enough tables and chairs	.739	Quality of teaching facilities 5.83%
The university has adequate lecture rooms and halls	.719	
The university has adequate teaching laboratory facilities	.715	
Lecture halls and rooms have enough sitting space for students	.708	
The university has adequate computers for ICT lessons	.664	
Library staff are friendly and helpful	.730	Library service environment 5.31%
Library staff provide prompt services to students	.702	
The library has convenient opening and closing hours	.630	
The library has comfortable chairs and tables	.611	
The library provides a conducive environment for study	.460	
When i visit the library, I always find a seat and a table to study from	.454	
Lecturers use latest technologies such as laptops and projectors in class	.622	Lecturer quality 4.01%
Lecturers are passionate, committed and enthusiastic in teaching	.596	
Lecturers are knowledgeable in their areas of specialization	.570	
Lecturers have excellent communication skills	.540	
Lecturers try to be respected by students by being professional and ethical	.537	
My course have lecturers who are prominent researchers	.424	
Students can access university internet on their phones and laptops	.840	Internet services 3.59%
The university provides internet facilities for students	.838	
Library facilitates access to internet resources	.411	
Grades awarded by lecturers reflect individual students ability	.712	Reliability of university examinations 3.19%
The university releases examinations results on time	.709	
The computers in the laboratories have a sufficient speed	.706	Quality of computer laboratory services 3.18%
The computer laboratories have convenient opening and closing hours	.686	
ICT staff are helpful and polite	.589	
The library is stocked with latest and authoritative textbooks	.701	Availability of text books in the library 3.09%
The library has textbooks that lecturers recommend for my course	.699	
Cronbach's alpha value of factor	.908 .858 .869 .839 .816 .784 .810 .731 .738 .695 .774	Overall α = .940

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization

As presented in Table 1, component one (1) had eight items related to skills, abilities, service attitudes of the administrative staff and their interaction with the students. The items were interpreted as administrative service quality. Component two (2) had seven items. The items emphasize lecturers' preparedness, engagement with the students during teaching, blending theory and practice, and ensuring that course objectives are realized. The items were interpreted as quality of instructional practices. Component three (3) had seven items. The items emphasize the core professional competencies and skills acquired by students in the process of pursuing a degree programme in a university and were interpreted as perceived learning gains. Seven items loaded on component four (4). The items emphasize services aimed at meeting students' social and personal needs. The items were interpreted as students' welfare services.

A total of five items loaded on component five (5). The five items were interpreted as quality of teaching facilities. Six items loaded on component six (6). The items emphasize the need for library staff to be responsive to students' needs, the library having basic comfort for study and having adequate sitting space. These items were grouped as quality of library service environment. Component seven (7) had six items related to desired qualities of a lecturer in a university. The qualities include lecturers being knowledgeable in their areas of specialization, communication skills, commitment and passion for teaching, use of technology in class, research prowess, and being ethical and professional. The six items were interpreted as lecturer quality. Three items loaded on component eight (8). The component was interpreted as provision of internet services. Component nine (9) had two items. The items emphasize on the ability of the universities to provide examinations results on time, accurately and dependably. In service quality literature, ability to provide a desired service accurately and on time is largely referred to as reliability (Oldfield & Baron, 2000). The two items were therefore interpreted as reliability of university examinations.

Three items loaded on component ten (10). The component was interpreted as quality of computer laboratory services. Two items loaded on component eleven (11). These items were interpreted as availability of text books in libraries in the universities. Neill (2008) advises that the internal reliability of a scale and subscales must be confirmed when some items are deleted in the process of principal component analysis as was the case in the current study. Cronbach's alpha test (α) results revealed that the entire scale had $\alpha = .940$. All the other dimensions had the minimum acceptable Cronbach's alpha of $>.700$ apart from computer laboratory services which had Cronbach's alpha of $.695$. Computer laboratory services dimension was inferred as not reliable in explaining variations in educational service quality in the universities and was dropped from further analysis. The analysis therefore revealed that educational service quality in the universities was defined by ten reliable dimensions. The dimensions were administrative service quality, quality of instructional practices, perceived learning gains, quality of students' welfare services, quality of teaching facilities, quality of library service environment, lecturer quality, provision of internet services, reliability in university examinations, and availability of text books in libraries in the universities. After determining the dimensions of educational service quality in the universities, the study proceeded to determine students' satisfaction in the universities.

3.2 Students' Satisfaction in the Universities

The students' satisfaction scale had six items. The items were; "I would recommend other students to enroll in this university", "My choice to enroll in this university is a wise one", "I am satisfied with my decision to enroll in this university", "If I have a choice to do it again, I will still enroll in this university", "I am satisfied with the educational services provided in this university", and "I get value for the fees I pay to this university". Principal Component Analysis was used to determine whether the items in the scale accurately measured the construct of students' satisfaction. The scale was first examined for suitability to factor analysis using KMO measure of sampling adequacy and Bartlett's test of sphericity. The analysis revealed that the Kaiser-Meyer-Olkin Measure of sampling adequacy for the scale was $.868$ and was considered adequate for the study. The Bartlett's test results revealed Chi-Square value = 3910.495 and is statistically significant at $p < .05$. Having met the requirements for KMO and Bartlett's tests, the study proceeded to factor extraction and obtained one component that explained 66.746% of the total variance in students' satisfaction. Consequently, there was no need for rotation. The scale was therefore used to measure students' satisfaction in the universities.

To determine students' satisfaction, the composite mean of the items measuring satisfaction was computed. On a scale of one (1) to five (5) where one was the lowest possible mean score and five the highest, the results revealed that overall, most of the students were moderately satisfied with their universities ($M = 3.08$, $SD = 1.04$).

The finding reveals that slightly above half of the students would; recommend their universities to prospective students, were satisfied with the educational experience in their universities, felt that they got value for fees paid, and would enroll in their universities for other academic programmes in future. Kapur and Crowley (2008) acknowledge that it is the desire of most individuals to pursue university education due to high rates of private returns such as lifetime earnings and self-esteem. Positive perceptions towards the universities may therefore be explained by the fact that the universities had provided the students with a lifetime opportunity to pursue university education, educational service quality in the universities notwithstanding. It was therefore important to determine the relationship between educational service quality dimensions and students' satisfaction in the universities.

3.3 Relationship between Educational Service Quality Dimensions and Students' Satisfaction

The study assumed a linear relationship between educational service quality and students' satisfaction. Multiple linear regression analysis was therefore used to determine the relationship between the determined dimensions of educational service quality and students' satisfaction. The analysis involved the ten independent variables (predictors) of educational service quality determined through Principal Component Analysis. Students' satisfaction was the dependent variable. According to Landau and Everitt (2004), multiple linear regression analysis is a method for assessing the strength of the relationship between a set of explanatory variables and a dependent variable. The analysis was therefore used to determine how well the ten dimensions predicted students' satisfaction. In addition, the analysis was used to establish the relative contribution of each of the dimensions of educational service quality on students' satisfaction (Pallant, 2005). The linear regression analysis model summary is presented in Table 2.

Table 2: Model Summary – Educational Service Quality and Students' Satisfaction

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.646	.417	.412	.79477

Dependent variable: Students' satisfaction

The model summary in Table 2 shows that the coefficient of determination (R^2) was 0.412. This meant that the ten dimensions of educational service quality explained 41.2 percent of the variations in students' satisfaction in the universities. To assess the statistical significance of the model, it was necessary to examine the table labeled ANOVA. The table provides an F – test for the null hypothesis that none of the dimensions of educational service quality is significantly related to students' satisfaction and the results are summarized in Table 3.

Table 3: ANOVA: Educational Service Quality and Students' Satisfaction

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	475.828	10	47.583	75.329	.000
	Residual	663.880	1051	.632		
	Total	1139.708	1061			

The analysis revealed that the F -value ($F_{4, 1057} = 75.438$) and the $p = .000$. The model was therefore significant because $p < .05$. It was concluded that the dimensions of educational service quality in the model had a significant combined effect on students' satisfaction in the universities. The relationship between educational service quality dimensions and students' satisfaction was determined by assessing the standardized Beta coefficients (whether positive or negative) and the level of significance (Sig) or p values in the regression model. According to Field (2009), a positive standardized Beta coefficient conveys that there is a positive relationship between an independent variable and an outcome whereas a negative coefficient represents a negative relationship. Pallant (2005) explains that the level of significance or p value indicates whether a variable is making a statistically significant contribution to the dependent variable controlling for other variables in the model. The study used $p < 0.05$ to determine the statistical significance of variables in the study. The multiple regression analysis results for the relationship between dimensions of educational service quality and students' satisfaction are summarized in Table 4.

Table 4: Multiple Regression Analysis Results - Educational Service Quality Dimensions and Students' Satisfaction

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.254	.147		-1.730	.084
	Quality of teaching facilities	.099	.030	.089	3.278	.001
	Availability of textbooks	.080	.025	.087	3.173	.002
	Availability of internet services	-.090	.030	-.083	-3.008	.003
	Quality of library service environment	.070	.037	.058	1.893	.059
	Administrative service quality	.169	.032	.153	5.353	.000
	Lecturer quality	.005	.023	.006	.236	.814
	Quality of instructional practices	.065	.041	.051	1.579	.115
	Reliability of university examinations	.059	.025	.068	2.393	.017
	Perceived learning gains	.327	.037	.243	8.756	.000
	Quality of students' welfare services	.337	.035	.286	9.698	.000

Dependent variable: Students' satisfaction

Analysis of the regression model results revealed that quality of teaching facilities ($\beta = .089$, $p = 0.001$) was directly and significantly related to students' satisfaction. An increase in the quality of teaching facilities in the universities was likely to result to a proportionate increase in students' satisfaction. The finding implies that students are likely to be more satisfied pursuing their education in universities which have adequate teaching facilities that guarantee comfort, facilitates practical learning experiences, and supports the acquisition of ICT skills. The finding concurs with Mansor, Hasanordin, Hafiz and Rashid (2012) research in a university in Malaysia which found that there is a significant relationship between quality of academic resources and students' satisfaction. However, the findings are contradicted by Khan, Ahmed and Nawaz (2011) study in universities in Pakistan which found that teaching facilities were having an insignificant relationship with students' satisfaction. Data summarized in Table 4 also show that availability of textbooks in libraries in the universities ($\beta = .087$, $p = 0.002$) was directly and significantly related to students' satisfaction since $p < .05$. The finding implies that the availability of a variety of authoritative textbooks that supports students' learning and research needs is a prerequisite for a fulfilling university experience. The finding concurs with Tuan (2012) study in universities in Vietnam which found that sufficient textbooks and references were important determinants of students' satisfaction. Availability of internet services ($\beta = -.083$, $p = 0.003$) was negatively and significantly related to students' satisfaction. The finding implies that an increase in availability of internet services was likely to result to significant decline in students' satisfaction. This was surprising considering the widescale uptake and provision of internet services in universities (Poda, Murry & Miller, 2006). Probably, public universities in Kenya were yet to streamline the provision of internet in a way that generates increased levels of satisfaction among students. The finding contradicts Douglas *et al.* (2006) study in Liverpool John Moores University in England which found that ICT resources and facilities were positively related to students' satisfaction.

The quality of library service environment ($\beta = .070$, $p = .059$) was not important in predicting students' satisfaction in the universities controlling for other variables in the model. Probably, students' were satisfied with the quality of library service environment in the universities. Further, the study found that administrative service quality ($\beta = .032$, $p = 0.001$) was directly and significantly related to students' satisfaction since $p < .05$. An increase in administrative service quality was likely to result to significant improvements in students' satisfaction in the universities. The results imply that the management of the universities should pursue excellence and customer focus in administrative service in order to increase students' satisfaction. The finding concurs with Tuan (2012) study in universities in Vietnam which found that quality of administrative services had a positive and significant relationship with students' satisfaction. However, the findings are contradicted by Ahmed and Masud (2014) study in a university in Malaysia which found that administrative service did not have a direct and significant influence on students' satisfaction as students' were contented with the level of provision of the services.

Results summarized in Table 4 show that lecturer quality ($\beta = .019, p = .571$) was not important in explaining variations in students' satisfaction in the universities. The findings contradict Farahmandian, Minavand and Afshardost (2013) study in a University in Malaysia which found that the quality of teaching staff was significantly related to students' satisfaction. Further, quality of instructional practices ($\beta = .019, p = .217$) was not important in predicting students' satisfaction in the universities controlling for other variables in the model. The results concur with Letcher and Neves (2010) who found that instructional practices had no effect on overall students' satisfaction. However, the results do not agree with Stukalina (2012) who argues that quality of pedagogical practices is significantly and positively related to students' satisfaction in a university.

Further, the results revealed that reliability of university examinations ($\beta = .066, p = .021$) was directly and significantly related to students' satisfaction. The finding implies that an increase in student' positive perceptions of reliability of university examinations was likely to result to increase in students' satisfaction. This is in line with Tessema, Ready and Yu (2012) who advance that the more the grading system is perceived to be fair or the more students earn the grade that they expect, the more likely they are to feel satisfied. In addition, students were likely to register higher levels of satisfaction by universities ensuring that examinations results were released on time. Perceived learning gains ($\beta = .241, p = .000$) was directly and significantly related to students' satisfaction since $p < .05$. Students' satisfaction in the universities was therefore dependent on the extent to which the academic programmes facilitate acquisition of communication, team work, research and ICT skills. In addition, the programmes should facilitate acquisition of sufficient practical skills and also provide students with opportunities to interact with employer and industry. Students predominantly want to acquire skills which make them competitive in the job market and empower them to creatively approach life challenges.

The finding concurs with Tessema, Ready and Yu (2012) who found that students' satisfaction was highly related to skills acquired in preparation for their careers. Similarly, Calvoa, Markauskaitea and Trigwella (2010) research at the University of Sidney found that students' perceptions of their learning experience correlate positively with their satisfaction with their courses. Students are likely to register improved satisfaction when their programmes facilitate the development of valuable graduate attributes. In addition, the results revealed that quality of students' welfare services ($\beta = .035, p = 0.000$) was directly and significantly related to students' satisfaction since $p < .05$. The results imply that the universities should be attentive to providing quality students' welfare services in order to improve students' satisfaction. This could serve to strengthen students' pursuit for academic excellence and increase their emotional and social connectedness with the universities. Students were more likely to register higher levels of satisfaction pursuing their studies in universities which provided; adequate and functional guidance and counselling services for students, adequate and effective career guidance and counselling, and adequate sporting facilities. In addition, students desired to pursue their studies in universities with effective catering facilities, where students were involved in decision making, and issues of needy students were addressed. The finding concurs with studies by Ilias, Hasan, Rahman and Yaso (2008); Yeo and Li (2012) who found that students' satisfaction is improved by universities providing quality students' welfare services.

4. Conclusions

The study concluded that administrative service quality, quality of instructional practices, perceived learning gains, quality of students' welfare services, quality of teaching facilities, quality of library service environment, lecturer quality, provision of internet services, reliability of university examinations and, availability of text books in libraries in the universities were reliable dimensions of educational service quality in public universities in Kenya. Overall, students' satisfaction in the universities was moderate. The study concluded that the educational service quality dimensions had a significant combined effect on students' satisfaction. Independently, quality of teaching facilities, availability of textbooks in the libraries, administrative service quality, reliability of university examinations, perceived learning gains, and quality of students' welfare services were important determinants of students' satisfaction. Improvements in these dimensions were likely to result to proportionate increase in students' satisfaction. Availability of internet services was negatively and significantly related to students' satisfaction. It was concluded that there was need improve on the quality of internet services on offer and provide adequate information literacy among the students in order to possibly revert the significant negative impact of internet services on students' satisfaction in the universities. It was also concluded that quality of library service environment, lecturer quality, and quality of instructional practices were not important in predicting students' satisfaction in the universities.

5. Recommendations

Based on the findings and conclusions of the study, the following recommendations are made:

- i. The Ministry of Education should ensure that the universities budgets are fully funded. Quality university education cannot be guaranteed in an environment where universities are struggling to finance critical aspects such as teaching and learning facilities, ICT resources, computer laboratories, and library resources such as latest, authoritative textbooks that support students' learning and research needs.
- ii. The universities should improve on the quality of internet services on offer and provide adequate information literacy among the students in order revert the significant negative impact of internet services on students' satisfaction in the universities.
- iii. The universities should pursue timely release of examinations results for the students. They should also seek to improve students' confidence with the grading system through sensitization on examinations procedures in the universities.
- iv. The universities should entrench customer focus in the administrative departments through provision of requisite training to the staff.
- v. The universities should ensure that the academic programmes on offer facilitate the development of desired graduate attributes. In particular, the curriculum should be reviewed periodically to cater for practical learning experiences based on emerging market needs.

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