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Indicators of service quality and satisfaction among graduating students of a higher education institution (HEI) in Ghana

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Abstract

Purpose – The purpose of this paper is to explore the indicators of service quality from the perspective of graduating students in a public university in Ghana. The identified indicators of service quality were rated and the extent of satisfaction among the students was determined. Another issue explored was whether the satisfaction among the respondents inures to their loyalty to the university.

Design/methodology/approach – A questionnaire was designed, pre-tested and administered to 500 graduating students, and 482 of them were returned for analyses. Principal component analysis was used to determine the indicators of service quality. Independent sample *t*-test and *z*-test for proportions were used to compare mean scores and proportions of respondents on various variables, respectively.

Findings – The results revealed three indicators of service quality which include quality of academic services and facilities, quality of lecturers and quality of academic programs. Graduands were satisfied with academic services, lecturers and programs. They were, however, not satisfied with the quality of facilities. Majority of the respondents will remain associated with the university as a result of their satisfaction with the services, lecturers as well as programs of the university. It is recommended that the university works assiduously on improving infrastructural facilities to help boost the confidence of the students in the university.

Originality/value – This paper argues that what constitutes quality service vary from one academic institution to the other. It is, therefore, needful for institutions to determine from the perspective of their students what may indicate quality service.

Keywords Quality, Satisfaction, Students, Indicators, Service, Loyalty

Paper type Research paper

Introduction

Higher education institutions (HEIs) are established basically to provide opportunities for students to enhance their academic careers and to achieve desirable professional development goals (World Bank, 2010). Until the latter part of the twentieth century, the provision of higher education in developing countries, especially those in Sub-Saharan Africa (SSA), was mainly a preserve of public-funded (government-owned) universities

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(Mbawuni and Nimako, 2015). However, higher education sector in SSA has undergone rapid expansion at the turn of the century with the proliferation of public and private institutions as well as academic programs (Kara *et al.*, 2016). This expansion, according to Altbach *et al.* (2009), was caused by an increasing demand for higher education leading to exponential growth in enrollment of students. Again, the dwindling ability of governments to fund public higher institutions encouraged private sector participation in the establishment of numerous institutions of higher learning. With this rapid expansion, concerns have been raised regarding the quality of education from HEIs in SSA (Kara *et al.*, 2016). Choice of institutions for quality higher learning has thus become a paramount issue to society and specifically prospective students. Institutions are, therefore, increasingly hard pressed to satisfy their customers, especially students (Abdullah, 2006).

Among all the customers of HEIs, students have been identified as the primary customers (Pereira and Da Silva, 2003; Abdullah, 2006). Expounding on this, Kara *et al.* (2016) said that by being primary customers, the result of students' perceptions on service quality are relevant to the continuous improvement of the HEIs. Students' satisfaction has increasingly become essential to the higher education enterprise worldwide. It is related to the quality of academic service delivery (Rouf *et al.*, 2016). With the identification of students as primary customers, HEIs are thus obligated to operate under market forces to efficiently and competitively satisfy them (Bunce *et al.*, 2016). According to Rouf *et al.* (2016), the long-term survival of higher education institutions lies in the provision of quality services. Le Roux and Van Rensburg (2014) concluded that the institutions must, therefore, work continuously at attracting, serving and retaining their students. According to Kara *et al.* (2016), students' perception about academic services has become relevant to continuous improvement in the institutions. Students' feedbacks are, therefore, more-often-than-not required to measure the performance of higher education institutions and also to explore avenues to enhance service quality. This is more important because what constitutes quality service vary from one HEI to the other (Cullen *et al.*, 2003; Nicholson, 2011). It is, therefore, very necessary for institutions to determine from the perspective of their students what constitutes a quality service.

Students as customers have expectations especially regarding academic services they receive from the HEIs. Students are, therefore, content or satisfied when the products and services they receive meet their expectations (Rouf *et al.*, 2016). Satisfaction, therefore, is a function of expectation and experiences which may then contribute to the perception of students about HEIs (Abu-Hasan *et al.*, 2008). According to Kara *et al.* (2016), many factors affect students' satisfaction. These factors may include teacher expertise (Butt and Rehman, 2010), available academic resources such as lecture halls, laboratories, libraries, ICT facilities (Prasad and Jha, 2013), inadequate financing (World Bank, 2010), administrative issues (Bolliger and Wasilik, 2009) among others. However, certain authors found that academic facilities, for example, are the most important among these factors (Mansor *et al.*, 2012; Coscun, 2014). Results of students' perceptions culminate into open expression of feelings about services they receive from HEIs. According to Kishore (2012) and Kara *et al.* (2016), students express the desire to come back to their institutions to pursue other academic programs, tell friends about their perceptions of the institutions and feel elated about having value for money when they have positive perceptions and are satisfied with the services they received from the institutions. The act of communicating their warm feelings about an institution shows the level of excitement in being associated with the institution (Dib and Alnazer, 2013).

Students' satisfaction has direct effect on loyalty which is their (students) continuous commitment to the HEIs (Le Roux and Van Rensburg, 2014). According to Oliver (1999), loyalty involves an attitudinal dimension which elaborates on re-purchase behavior as well as consistent adherence to product/service for the future. de Marcedo Bergamo *et al.* (2011)

noted a convergence between loyalty, fidelity and retention where fidelity is described as a non-random purchase of services over a period of time. In the view of Jamal (2006); however, retention is the ability of an institution to maintain its already acquired customers/consumers. Students' desire to return to pursue other academic programs and/or return to work with the institution after graduation result in their retention by the HEIs. Loyalty, therefore, culminates into retention and in the long run profitability to the HEIs (Petre *et al.*, 2006). Scholars argued that for HEIs to attract and maintain the loyalty of students, the institutions must work at improving their services as well as invest in building strong relationship with students (Ndubisi, 2007; Usman and Mokhtar, 2016). According to Alrousan and Abuamoud (2013), HEIs need in addition to the traditional strategy of attracting more new students, retain the already existing students as well as build relationships with them. Effectively, satisfaction is a mandatory prerequisite for students' loyalty and retention (Guo *et al.*, 2012) and they should be the most important goal for any future looking HEI (Usman and Mokhtar, 2016).

In Ghana, even though there are many (at least 120) accredited institutions of higher learning, (National Accreditation Board, 2017), studies on students' satisfaction with academic services are very few (Mbawuni and Nimako, 2015). The key objective of this study was to determine the indicators of service quality from the perspective of graduating students. The indicators may be services, facilities and/or personnel whose availability may enhance the core business of the university and at the end inure to the satisfaction of students who are the key customers of the university. It measured the availability of the indicators of service quality in the university. The study explored the extent to which students were satisfied with various academic services and available infrastructure in the University of Cape Coast. Also, the study explored the extent to which the students may be loyal to the University through their desire to return and pursue other programs of study or how they would be willing to recommend UCC to other prospective students. The study also measured the level of preparedness for the job market among graduating students. It identified areas to be prioritized for improvement in the various faculties/schools of the university. The essence of this study is to provide the management of the university and other universities worldwide to look internally for quality indicators and thence concentrate on working on those indicators in order to retain their students.

Conceptual framework

There are many stakeholders in the higher education sector. These stakeholders may include parents, students, employers, government, management of the higher education institutions, staff of the institutions among others. All these stakeholders have different conceptions of quality in higher education institutions (Cullen *et al.*, 2003). In the view of Nicholson (2011), the wide variety of educational stakeholder groups made the concept of quality and what constitutes its indicators more controversial. However, many of those who studied quality issues in higher education looked at it from the perspective of service quality and from the view point of the students though this is not devoid of debates on how to measure the service quality (Ibrahim *et al.*, 2012). As a response to the growing interest in the measurement of service quality, attempts have been made to measure service quality through the proposal and use of several instruments of measurement and these include but not limited to Service Quality (SERVQUAL) (Parasuraman *et al.*, 1991), Service Performance (SERVPERF) (Cronin and Taylor, 1994), Higher Education Performance (HEdPERF) (Abdullah, 2006), Education Quality (EduQUAL) (Mahapatra and Khan, 2007), Service Quality Measurement in Higher Education Institutions (SQM-HEI) (Senthilkumar and Arulraj, 2011) and Education Service (EDUSERVE) (Ramseook-Munhurrun *et al.*, 2010) among others. These methods are scales for measuring service quality (Table I) and they have all contributed immensely to the growth of literature on service quality.

Table I. Some service quality scale and their quality dimensions from literature

No.	Measurement scale	Quality dimension
1.	Service Quality (SERVQUAL)	Tangibles; reliability; responsiveness; assurance and empathy
2.	Service Performance (SERVPERF)	Tangibles; reliability; responsiveness; assurance and empathy
3.	Higher Education Performance-only (HEdPERF)	Non-academic aspects; academic aspects; reputation; access and understanding
4.	Education Quality (EduQUAL)	Learning outcomes; responsiveness; physical facilities; personality development and academics
5.	Service Quality Measurement and Higher Education in India (SQM-HEI)	Teaching methodology; environmental change in study factor; disciplinary measure taken; placement-related activities and overall rating of service quality and satisfaction level
6.	EDUSERVE	Empathy; school facilities; reliability; responsiveness and assurance discipline

Note: Culled from Ibrahim *et al.* (2012)

The first of these instruments SERVQUAL as propounded by Parasuraman *et al.* (1991) measures the extent to which customers' expectations of quality service before consumption are confirmed or otherwise by their actual perception of the experience. It hinges on five tenets representing tangibility, reliability, responsiveness, assurance and empathy which together measure service quality using 22 item scales. In spite of some criticisms of SERVQUAL instrument, it remains the foundation upon which all other service quality instruments have been built (Sureshchander *et al.*, 2002). Subsequent to Parasuraman *et al.*, work, Cronin and Taylor (1994) developed the SERVPERF which is a modification of the SERVQUAL. SERVPERF endeavor to measure quality as an attitude and not necessarily satisfaction. It employs the idea of perceived service quality which may inure to customer satisfaction. Again, SERVPERF further links customers' satisfaction with their intention to return for more purchases. In comparing SERVQUAL AND SERVPERF, Abdullah (2006), "SERVQUAL operationalizes service quality by comparing the perceptions of the service received with expectations, while SERVPERF maintains only the perceptions of the service quality." To measure the service quality in HEIs, Abdullah (2005) proposed the HEdPERF measurement. The HEdPERF, according to its proponent captures the determinants of service quality within a specific sector—higher education, using a 41-item instrument to empirically test for reliability, unidimensionality and validity through factor analysis. While the first-two instruments—SERVQUAL and SERVPERF were general and could be employed in measuring service quality in all organizations, HEdPERF is higher education is aimed at capturing the authentic determinants of service quality specific to higher education. While EduQUAL was also developed specifically to measure service quality in technical schools, SQM-HEI was meant specifically for higher education in India and EDUSERVE was meant for secondary schools in Mauritius (Ibrahim *et al.*, 2012). From the foregoing, each of the instruments have their own advantages and disadvantages but what is salient about them is that they all endeavor to measure service quality from the perspective of students. All these measurement scales have customers at the center of the quality dimension and those relating to higher education specifically have students as primary consumers who have had to respond to the instruments at one point in time for its validation. There are correspondingly different quality indicators as well as quality assessment procedures bearing in mind that every HEI could have its own operational notion of quality which may be related to its vision and mission (Ekhaguere, 2000, p. 8). It is, therefore, important for researchers on service quality in higher education to determine for each institution what constitutes quality indicators.

From the myriad of quality dimensions, we have identified possible indicators to guide the students in selecting the specific quality indicators for their university. The conceptual

framework in Figure 1 shows students being the focus of this study with various forms of experiences with facilities—accommodation, laboratories, personnel—teaching staff, administrative staff, environment, programs, etc., which lead to their satisfaction with facilities and services (tangible and intangible in nature). Their satisfaction may inure to their loyalty to the university system where they may wish to return to pursue postgraduate programs, or decide to work with, or recommend the university to friends. In this framework, students' satisfaction with the university system may lead to their loyalty.

Materials and methods

Sampling, data collection and analysis

The survey design was used for the study. The study focused on 3,932 regular students who had completed various first degree (BA/BSc) programs of study in the University of Cape Coast and were due for graduation in July 2014. Using Krejcie and Morgan's (1970) table for the determination of sample size for categorical data, 351 students were to be sampled from the targeted population of 3,932 for the study. However, in order to have a more representative data, a graduate exit survey designed and pre-tested was administered to 500 graduating students. The respondents were selected using systematic sampling technique in which every fifth graduating student who registered to graduate was given the questionnaire to fill. The instrument, which was mainly Likert scale, was developed and pre-tested to 80 graduating students in the previous year (July 2013). The pre-test data were subjected to a reliability test in order to determine the Cronbach's α coefficient of reliability. The analysis revealed a Cronbach's α coefficient of 0.770 (28 items), which is above the 0.700 threshold as recommended by Pallant (2005). The questionnaire was thus considered reliable and used for the study. Respondents were allowed to voluntarily choose to fill the questionnaires. The survey solicited information on respondents' assessment of programs they pursued, their satisfaction with the university's academic and non-academic services, as well as their views on facilities. It also verified from the graduands whether there were portions of academic programs they wish changed and whether they would wish to come back to the university again.

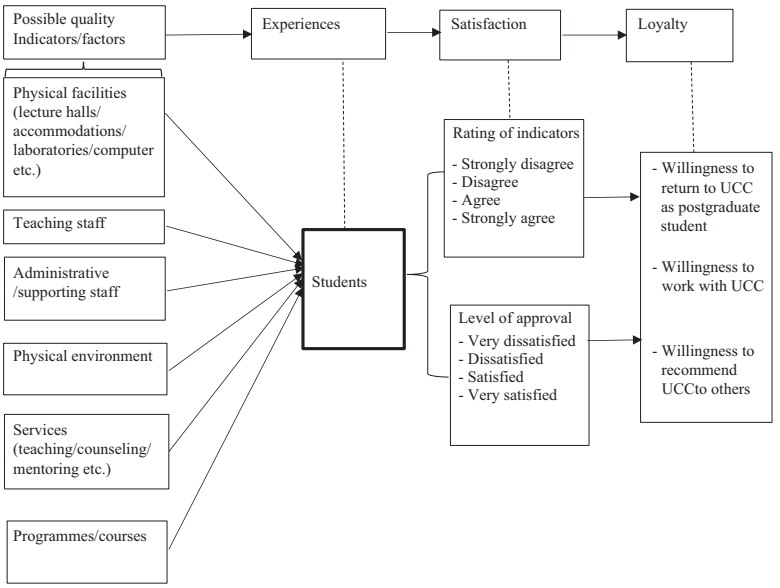

Figure 1.
Conceptual framework for service indicators

Using the Statistical Package for Social Science (SPSS version 16), the principal component analysis (PCA) was employed to first determine the indicators of service quality among the graduands. PCA was useful in grouping the Likert scale items on the questionnaire under unique factors/components and as well determine whether the items were suitable for measuring the intended indicators. As part of the PCA, Kaiser–Meyer–Olkin (KMO) measure and Bartlett's test were done. The KMO test was done to check whether enough items were available in the analysis to predict each factor (Yong and Pearce, 2013; Kara *et al.*, 2016). The Bartlett's test, on the other hand, was used to examine the extent to which the items on the questionnaire were correlated in order to provide a reasonable strong basis for the PCA (Field, 2009). The PCA employed the varimax with Kaiser normalization rotation to extract the indicators of service quality. The varimax with Kaiser normalization rotation results in solutions that are easier to interpret and report, and attempt to minimize the number of variables that have high loadings on each factor (Pallant, 2005). When the PCA analysis is run, the components that yield eigenvalues greater than 1 are by de facto considered the most useful (Leech *et al.*, 2005).

The independent sample *t*-test was used to compare the mean scores for the indicators of service quality as provided by the respondents in the various faculties grouped under the humanities and natural sciences. The effect size statistics (η^2—Cohen's *d* (Cohen, 1988)) was calculated to measure the proportion of variance in the faculty/school groups that is explained by the service quality indicators.

Results

Background of graduating students

The total number of questionnaires that were completed and retrieved from the respondents was 482 out of the 500. This yielded a response rate of 96.40 percent. The distribution (among the faculties/schools) and the background characteristics of the respondents are presented in Table II. Overall, there were more male respondents (64.70 percent) than females (35.30 percent). However, proportions of female respondents were higher in the Faculties of Arts (53.60 percent) and Education (54.10 percent) compared to their male counterparts. Only 0.90 percent of the respondents were below age 20 and most (over 70.00 percent) were between 21 and 30 years of age. Notably, 17.50 and 14.10 percent of the respondents from Schools of Agriculture and Business respectively were 41 years and above. Also, 68.00 percent of the respondents were single while 32.00 percent were married.

Prior to their enrollment as students in UCC, 49.80 percent of the respondents were students of Senior High School (SHS), while 12.70 percent studied at a polytechnic or other tertiary institutions in Ghana and 34.4 and 3.60 percent were employed and unemployed, respectively. Also, 78.60, 74.10 and 67.70 percent of graduands from the Faculty of Arts, Schools of Biological Sciences and Physical Sciences, respectively, were the students from SHSs immediately prior to gaining admission to UCC. Additionally, 54.00, 46.10 and 34.80 percent of respondents from Business, Agriculture and Education, respectively, had been employed immediately prior to their enrollment to UCC. Of the 164 respondents who were employed immediately prior to their enrollment, 72.00 percent had been employed in the areas related to their programs of study.

Indicators of service quality in the University of Cape Coast

The study explored from the perspective of the graduands, indicators which determined service quality in the University of Cape Coast in Ghana. PCA was used in determining the indicators. Table III shows the KMO and Bartlett's test for the scale of indicators of quality in UCC.

The KMO measure of sampling adequacy is 0.897 which is higher than 0.6 which is the suggested minimum value for a good factor analysis. This KMO value was considered to be

Table II.
Background of respondents

Characteristics	Variable	Percentage							Overall
		Agriculture	Arts	Biological sciences	Education	Physical sciences	Social sciences	Business	(%)
Gender	Male	94.70	46.40	61.50	45.90	79.00	71.40	71.40	312 (64.70)
	Female	5.30	53.60	38.50	54.10	21.00	28.60	28.60	170 (35.30)
Age group	16–20	2.50	0.00	3.70	0.00	1.60	2.40	0.00	4 (0.80)
	21–25	30.00	60.70	51.90	39.50	50.00	53.80	23.30	189 (39.20)
	26–30	30.00	35.70	40.70	30.20	33.90	31.80	31.70	155 (32.20)
	31–35	15.00	0.00	3.70	15.50	11.30	2.40	15.00	58 (12.00)
	36–40	5.00	0.00	0.00	5.40	3.20	2.40	15.80	33 (6.80)
	41–45	10.00	3.60	0.00	3.90	0.00	2.40	5.80	19 (3.90)
	46–50	5.00	0.00	0.00	4.70	0.00	2.40	5.00	16 (3.30)
	51+	2.50	0.00	0.00	0.80	0.00	2.40	3.30	8 (1.70)
Marital status	Single	55.00	92.90	85.70	59.00	89.40	90.50	53.70	328 (68.00)
	Married	45.00	7.10	14.30	41.00	10.60	9.50	46.30	154 (32.00)
Primary activity immediately prior to enrollment in UCC	Student from SHS	46.20	78.60	74.10	43.50	67.70	60.00	33.10	240 (49.80)
	Student from polytechnics	5.10	7.10	3.70	18.80	15.40	8.90	11.30	61 (12.70)
	Employed	46.10	10.70	18.50	34.80	12.40	20.00	54.00	164 (34.00)
	Unemployed	2.60	3.60	3.70	2.90	4.60	11.10	1.60	17 (3.50)
n		40	29	30	141	68	45	129	482 (100)

adequate as it reveals that there were enough items in the analysis which can be grouped to predict distinct components. Also, the result from the Bartlett's test of sphericity shows a χ^2 value of 2,470, which is statistically significant at $p < 0.001$ and depicts that the variables in the scale of quality indicators were highly correlated and hence provided the reason for the component extractions.

The PCA results yielded a total of 15 components that resulted in 100 percent of the variations in the indicators of the service quality. Three components had eigenvalues greater than 1 and these factors have been considered useful as they measured three different dimensions of the indicators of service quality. The three together explained 55.11 percent of the variations in the service quality factors (Table IV). The first of the three components has been described as quality of services and facilities. It accounted for 36.98 percent of the variations in the indicators of service quality and included eight items. The second component is labeled as quality of lecturers. It has a proportion of 11.10 percent of the variations in the scale of the indicators of service quality.

KMO measure of sampling adequacy	0.897
Bartlett's test of sphericity	
Approx. χ^2	2,470
df	105
Sig.	0.000

Table III.
KMO and Bartlett's test for the scale of indicators of quality in the university of cape coast

Items	Value of items	Component	Factor (percentage variance)
Computer facilities available to students are good and adequate	0.792	1	Quality of services and facilities (36.98)
Departmental resources and support were often available and in the required proportion (lecture halls, laboratories, technical assistance, etc.)	0.694		
Provision of academic advice was good	0.671		
Provision of career guidance/counseling was good	0.670		
University and departmental library facilities were good and adequate	0.660		
Communication about academic policies and procedures were good	0.584		
Administrative structures and personnel were good	0.584		
Mentoring was available and effective	0.483		
Cronbach's α value of component	*0.850*		
Lecturers who taught the courses were well qualified	0.724	2	Quality of lecturers (11.10)
Lecturers who taught the courses had positive impact on students	0.689		
Lecturers who taught the courses were interested in the academic pursuits of students	0.658		
The courses in the entire program were well taught	0.566		
Cronbach's α value of component	*0.773*		
Programs prepared students for their careers	0.724	3	Quality of academic programs (7.03)
Programs were of high academic standards	0.723		
Programs integrate modern and current developments	0.683		
Cronbach's α value of component	*0.748*		
Extraction method: principal component analysis			
Rotation method: varimax with Kaiser normalization			

Table IV.
Indicators of service quality in the University of Cape Coast

This component has four items which combined to stress the important role of lecturers in the higher education endeavor. There are three items in the third component which is the quality of academic programs. It explained a proportion of 7.03 percent of the indicators of service quality. Internal reliability was checked for all the components and that of quality services and facilities yielded a Cronbach's α of 0.850, while quality of lecturers resulted in a Cronbach's α of 0.749 and the quality of academic programs resulted in a Cronbach's α of 0.773. All the components therefore have Cronbach's α of above the 0.700 threshold signifying that the graduands have defined the indicators of service quality using the three components. Amongst the three components, the most important is the quality of services and facilities with the highest proportion (36.98 percent) and this means that the graduands were so much concerned with the services they received as students while in UCC. Services such as academic advice, career guidance/counseling, communication about policies and procedures and mentoring were as equally important as computer facilities, library, laboratories and personnel (both technical and administrative staff).

Ratings of the indicators of service quality in UCC

The study measured the availability of the indicators of service quality in the University of Cape Coast from the perspectives of the graduands. It explored how these indicators influenced or contributed to successful teaching and learning experiences of the graduands. The graduands rated the availability of the indicators—quality of services and facilities, quality of lectures and quality of academic programs in a four-point Likert scale of strongly disagree (SD), disagree (D), agree (A) and strongly agree (SA). The result is presented in Table V. The mean ratings of the indicators of the service quality were compared with a five- point scheme adapted from what is used for the classification of undergraduate degrees in the university. The classification include 1.0–1.9 = extremely below average; 2.0–2.4 = below average; 2.5–2.9 = average; 3.0–3.5 = good and 3.6–4.0 = very good. Majority (291, 60.40 percent) of the graduands disagreed that computer facilities available to students were good and adequate. Almost half (232, 48.20 percent) of the graduands also disagreed that departmental resources such as lecture halls, laboratories, technical assistance are available and adequate. Approximately, one-third (161, 33.40 percent) of the graduands disagreed with the assertion that university and departmental library facilities were good and adequate. The result again revealed that majority of the respondents (303 or 62.90 percent) agreed that career guidance and counseling were good. Another 321 or 66.60 percent of them agreed that communication about academic policies and procedures were good, while 347 (72.00 stated that administrative structures and personnel were good and 346 (71.80 percent) said that mentoring was available and effective. The overall mean rating for the first component—quality of services and facilities was average (mean = 2.61; SD = 0.74 or $\chi^2 = 2.61 \pm 0.74$). This is relatively low suggesting that though the graduands benefitted very well from services like career guidance and counseling, communication about policies and procedures as well as mentoring, they lacked facilities such as lecture halls, laboratories, libraries and other technical assistance required for their learning in UCC. Respondents unanimously attested to the importance of computer facilities to their studies. They were loudly clear in denying the availability of good and adequate computer facilities to students.

Data on quality of lecturers revealed that graduands rated the component good (mean = 3.02; SD = 0.62). Most (429, 89.10 percent) of the graduands attested to the assertion that lecturers who taught the course were well qualified. Another (389, 80.70 percent) felt the lecturers had a positive impact on them as students. Lecturers who taught the courses were interested in the academic pursuits of the students as reported by 426 (88.40 percent) and 403 (83.60 percent) of the graduands agreed that the courses in the entire program they studied were well taught.

Factors	Items	SD (%)	D (%)	A (%)	SA (%)
Quality of services and facilities	Computer facilities available to students are good and adequate	95 (19.70)	196 (40.70)	163 (33.80)	28 (5.80)
	Provision of academic advice was good	34 (7.10)	139 (28.80)	271 (56.20)	38 (7.90)
	Provision of career guidance/counseling was good	36 (7.50)	143 (29.70)	269 (55.80)	34 (7.10)
	Departmental resources and support were often available and in the required proportion (lecture halls, laboratories, technical assistance, etc.)	47 (9.80)	185 (38.40)	216 (44.80)	34 (7.10)
	Communication about academic policies and procedures were good	27 (5.60)	134 (27.80)	286 (59.30)	35 (7.30)
	Administrative structures and personnel were good	22 (4.60)	113 (23.40)	306 (63.50)	41 (8.50)
	University and departmental library facilities were good and adequate	39 (8.10)	122 (25.30)	270 (56.00)	51 (10.60)
	Mentoring was available and effective	31 (6.40)	105 (21.80)	282 (58.50)	64 (13.30)
Overall mean rating for quality of services and facilities, mean = 2.61, SD = 0.74					
Quality of lecturers	Lecturers who taught the courses were well-qualified	8 (1.70)	45 (9.30)	315 (65.40)	114 (23.70)
	Lecturers who taught the courses had a positive impact on students	15 (3.10)	78 (16.20)	329 (68.30)	60 (12.40)
	Lecturers who taught the courses were interested in the academic pursuits of students	8 (1.70)	47 (9.80)	297 (61.60)	129 (26.80)
	The courses in the entire program were well taught	12 (2.50)	67 (13.90)	346 (71.80)	57 (11.80)
Overall mean rating for quality lecturers, mean = 3.02, SD = 0.62					
Quality of academic programs	Programs prepared students for their careers	10 (2.10)	34 (7.10)	259 (53.70)	178 (36.90)
	Programs were of high academic standards	6 (1.20)	13 (2.70)	285 (59.10)	178 (36.90)
	Programs integrate modern and current developments	9 (1.90)	48 (10.00)	315 (65.40)	110 (22.80)
Overall mean rating for quality of academic programs, mean = 3.22, SD = 0.63					

Table V.
Graduands' rating of indicators of service quality

Results on the ratings of the third component on quality academic programs was also good and with even a higher mean rating (mean = 3.22; SD = 0.63). Most (437 (90.60 percent) of the graduands agreed that the programs they pursued really prepared them for their careers. Another 463 (96.0 percent) of the respondents agreed that the programs they pursued were of high standards while 425 (88.2 percent) felt the programs integrated modern and current developments.

Graduands' satisfaction with the university

Graduands' satisfaction was measured using items which directly established their level of satisfaction with academic and non-academic services, facilities for teaching and learning as well as the programs they pursued. Table VI summarized graduands rating of factors pertaining to their satisfaction with various aspects of UCC.

The descriptive statistics showed that majority (77.00 percent) of the graduands were satisfied with academic and non-academic services of the University. On the contrary, high proportion (56.60 percent) of the graduands were not satisfied with the academic facilities they

Items	Gender	VD (%)	D (%)	S (%)	VS (%)	*n*
Graduands' satisfaction with academic and non-academic services	Male	14 (4.50)	68 (21.90)	203 (65.30)	26 (8.40)	311
	Female	4 (2.30)	25 (14.60)	128 (74.90)	14 (8.20)	171
	sub-total	18 (3.70)	93 (19.30)	331 (68.70)	40 (8.30)	482
Graduands' satisfaction with academic facilities	Male	36 (11.60)	142 (45.60)	115 (36.90)	18 (5.80)	311
	Female	24 (14.00)	71 (41.50)	67 (39.20)	9 (5.30)	171
	Sub-total	60 (12.40)	213 (44.20)	182 (37.80)	27 (5.60)	482
Graduands' satisfaction with programs	Male	4 (1.30)	58 (18.60)	175 (56.30)	74 (23.80)	311
	Female	0 (0.00)	34 (19.90)	78 (45.60)	59 (34.50)	171
	Sub-total	4 (0.80)	92 (19.10)	253 (52.50)	133 (27.60)	482
No. of lecturers graduands knew well		None	One	Two	Three or more	
	Male	34 (10.90)	50 (16.10)	72 (23.10)	155 (49.80)	311
	Female	15 (8.80)	24 (14.00)	48 (28.10)	84 (49.10)	171
	Sub-total	49 (10.20)	74 (15.40)	120 (24.90)	239 (49.60)	482

Notes: VD, very dissatisfied; D, dissatisfied; S, satisfied; VS, very satisfied

Table VI. Graduands' satisfaction with services, facilities and lecturers of UCC

had at their disposal while studying in UCC. There was a statistically significant difference ($p < 0.05$) between the proportion of males (57.20 percent) and females (55.20 percent) who were not satisfied with academic facilities in the University, Z-score $= 0.874$, $p < 0.001$, when a Z-test for proportion was run. The proportion of "Yes" or "No" responses for Observation 1 is 1.747 and that of observation 2 is 1.80. The number of lecturers that the graduands knew well to approach for academic references was also used to measure their satisfaction with the lecturers. The table shows that 74.50 percent of the graduands knew at least two lecturers very well to approach for academic references while 15.40 percent knew only one and 10.20 percent knew none very well to approach for academic references. A proportion of 80.10 percent of the graduands were satisfied with the programs they studied with the University. Coincidentally, 80.10 percent apiece of male and female respondents were satisfied with the academic programs they pursued in UCC. From the data, if given the chance, an overwhelming 80.6 percent of the graduands would study the programs the studied again.

Graduands' loyalty to UCC

It is assumed in this study that graduands' satisfaction with the services, infrastructure and personnel of the university could inure to their loyalty to the university. Loyalty here is defined in terms of their willingness to return to the institution for postgraduate programs, be able to recommend the university to other prospective students and or decide to remain associated with the university. Table VII revealed that high proportion (79.70 percent) of the graduands

Test of loyalty	Variables	DN (%)	PN (%)	PY (%)	DY (%)	*n*
Would graduands' choose UCC again?	Male	25 (8.00)	44 (14.10)	147 (47.30)	95 (30.50)	311
	Female	7 (4.10)	22 (12.90)	79 (46.20)	63 (36.80)	171
	Sub-total	32 (6.60)	66 (13.70)	226 (46.90)	158 (32.80)	482
Would graduands' recommend UCC to others?	Humanities	7 (2.00)	18 (5.20)	113 (32.80)	207 (60.00)	345
	Natural Sciences	10 (7.30)	8 (5.80)	62 (45.30)	57 (41.60)	137
	Sub-total	17 (3.50)	26 (5.40)	175 (36.30)	264 (54.80)	482

Notes: DN, definitely not; PN, probably not, probably yes; DY, definitely yes

Table VII. Test of loyalty among graduands of the University of Cape Coast

would choose UCC again if given the opportunity. Furthermore, 83.00 percent of the female graduands as against 77.80 percent of their male counterparts would choose UCC again. A Z-test for proportions shows a statistically significant difference at $p < 0.05$ between the males and females who would choose UCC again (Z-score = 0.957, $p < 0.001$). The proportion of "yes" or "no" responses for Observation 1 is 1.285 and that of Observation 2 is 1.204.

An overwhelming 91.10 percent of the graduands would recommend the university to others. Higher proportion (92.80 percent) of the graduands from humanities than from natural sciences (86.90 percent) would recommend the university to others. An independent-samples t-test was conducted to compare the willingness to recommend the university to others among graduands from programs in humanities as against those from natural sciences. The data revealed a statistically significant difference in scores for humanities (mean = 3.51, SD = 0.691) and natural sciences (mean = 3.21, SD = 0.853; t (480) = 3.95, $p < 0.001$, two-tailed). The magnitude of the differences in the means (mean difference = 0.29, 95 % CI: 0.15–0.44) was small ($\eta^2 = 0.031$).

Preparedness for the job market

The data also revealed that most (85.70 percent) of the respondents after completing their programs of study in UCC felt fully equipped for the world of work while 10.80 percent of them were not sure that the skills they acquired had really equipped them for the world of work. Figure 2 shows the extent to which the graduands felt equipped for the world of work. More than half (56.40 percent) of the graduands felt equipped with the necessary skills to work with any organization while 22.60 percent of them felt equipped to start their own business and be self-employed. Another 19.9 percent felt they had acquired necessary skills to work only with organizations in their field of study.

Areas for improvement

From the results, computer facilities were not adequate in the departments, faculties/schools. Similarly, other facilities such as lecture halls, laboratories as well as technicians to assist students to achieve academic goals were not adequate. These facilities and personnel, therefore, constitute areas that require improvement to enable the University perform at its maximum best and to fully satisfy its students.

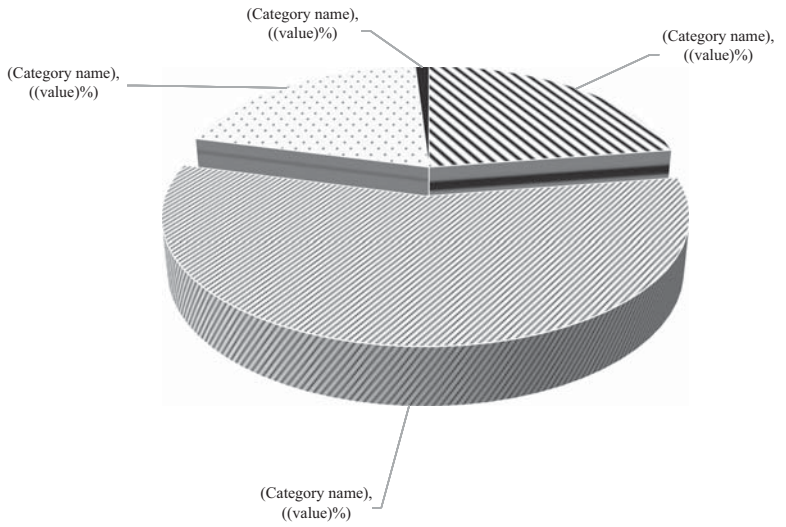

Figure 2.
Graduands' preparedness for the world of work

Discussion

This study determined the indicators of service quality in the University of Cape Coast in Ghana. The indicators identified have been grouped into three using the PCA. These components include; services and facilities, lecturers and programs. The results revealed that graduands placed more importance on the services and facilities (36.98 percent) as compared to lecturers (11.10 percent) and programs (7.03 percent), which are also important. Annamdevula and Bellamkonda (2016) in their study in India observed that quality of academic services plays a vital role in motivating students to perform better in their academics. Cooper (2010) identified academic guidance, counseling and social networks and financial aid advising and funding as some of the key academic services provided by HEIs. Bakare (2009) supported by Isa and Yusoff (2015) also identified lecture halls, laboratories, libraries, sports facilities, water, electricity, furniture, shops among a host of facilities as important facilities needed in tertiary institutions. In this study, while the respondents generally rated the services—academic advice, guidance and counseling, communication about academic policies and mentoring high, they rated the facilities—computer facilities, laboratories, lecture halls, libraries among others low. This culminated into their satisfaction with the services and/or dissatisfaction with facilities as revealed in the results. Jalali *et al.* (2011) corroborated this finding in Malaysia when students rated academic services relatively high. Again, in Norway, Hanssen and Solvoll (2015) found that students' perception about university facilities is significantly and positively correlated with students' overall satisfaction with the university. Kara *et al.* (2016), in Kenya, also observed that students' rating of quality of teaching facilities were well below average while services were rated above average and this reflected in their (students') level of satisfaction. The general lack of or inadequate teaching or academic facilities in the HEI's of Africa has affected students' satisfaction (Isa and Yusoff, 2015; Kara *et al.*, 2016).

According to Downes (2016), lecturers perform three traditional roles including; teaching, coaching/mentoring and assessment. Voss and Gruber (2006) in a study explored the desired qualities that students want lecturers to possess. These qualities include knowledgeability, enthusiastic, approachability and friendliness. The graduands of UCC perhaps might have found their lecturers to possess all these qualities and for that matter gave them high ratings. The lecturers may be knowledgeable and that could be why 89.10 percent of the students agreed to the assertion that their lecturers were well qualified. Another 83.60 percent of the respondents agreed that the courses they studied were well taught which highly support the fact that the lecturers were enthusiastic. Majority (80.70 percent) of the students felt that the lecturers had a positive impact on them and another 88.40 percent attested to the fact that the lecturers were interested in their academic pursuits. Kazar (2014) observed that the lecturer is one of the major factors that affect the performance of students. Furthermore, Butt and Rehman (2010) found a statistically significant ($p < 0.001$) (in a multiple regression) relationship between lecturers' expertise and students' satisfaction. In this study, good knowledge of lecturers was used as a proxy measure for students' satisfaction with the lecturers and the results revealed that as much as 89.00 percent of the male respondents and 91.20 percent of the female respondents knew at least one lecturer very well to approach for professional reference when in need. This provides the students the chance to remain connected to their departments. Knowing more lecturers may also inure to students' return to their departments to pursue postgraduate programs. Those lecturers they knew well could be approached later to serve as supervisors or academic counselors during their postgraduate levels.

Higher education institutions have multiple product systems, for example, academic programs that are mounted as well as the graduates they produce are considered their products (ASEAN University Network, 2004). Those who purchase the academic programs as products and pursue courses from HEIs are the students. Results of this study shows that

graduands were generally content with the programs they pursued in UCC. Results show an overwhelming 96.00 percent of the respondents agreeing that the academic programs they pursued were of high standards. Another 90.60 percent felt that the programs prepared them for their careers and 88.20 percent confirmed that the programs integrated modern and current developments in the various fields of study. Again majority (80.10 percent) of the graduands were satisfied with the programs they pursued in UCC. Butt and Rehman (2010) also found that students were satisfied with courses they offered. They found statistical significance difference between the proportion of males and females who were satisfied with the programs and they attributed that to the socio-economic setting in Pakistan where they conducted their study. The wide acceptance of the fact that academic programs were well developed and suited the needs of the students is an issue that UCC must hail. The processes involved in the development of academic programs perhaps may be rigorous and should be maintained. It is, therefore, important for all HEIs to invest time and other resources in the development of their academic programs

Annamdevula and Bellamkonda (2016) stated that students' satisfaction with the services of HEIs determine their loyalty. This study found that higher proportions of the graduands were willing to return to UCC and recommend the university to others. This shows the extent to which the graduands were satisfied with the University of Cape Coast. It is important for the university to improve upon its facilities in order to give these students an unblemished service should they return to it for the continuation of their education. Though the students may not be too satisfied with facilities, other services as well as lecturers and other personnel met the expectations of the students.

Conclusion

The study concludes that quality of academic services and facilities, quality of lecturers and quality of programs constitute key factors that determine service quality in the University of Cape Coast in Ghana. These may be similar or different for other HEIs. Quality assurance outfits of the various HEIs should endeavor to identify what defines service quality in their institutions. Students who are the primary customers of the HEIs determined the extent to which they have been affected by the indicators of quality and for that matter expressed their level of satisfaction. Satisfaction determines the students' loyalty to their institutions. The inadequate academic facilities such as computer facilities, libraries, laboratories, lecture halls just to mention a few affect students' general satisfaction with HEI systems especially in developing countries. In spite of that, these facilities do not clearly determine students' loyalty to the institutions. Services like mentorship, academic advice and lecturers' influence on students are key in determining the students' loyalty. There is the need for UCC and other tertiary institutions of Ghana and SSA to improve upon the academic facilities in order to provide excellent experience to students.

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