

Quality of Service at the ICT Centre of a Ghanaian University-Part 2: The Analysis

¹G.O. Ofori-Dwumfuo and ²P.K. Adzobu

¹Methodist University College, Ghana

²University of Ghana, Ghana

Abstract: This study assesses the quality of service at the ICT Centre in the University of Cape Coast, Ghana, from the students' perspective. A modified SERVQUAL questionnaire was used to explore students' expectations and perceived service levels along a five-point scale. One hundred and five copies of the questionnaire were administered and 93 responses obtained. The results showed that the students rated the overall service quality of the ICT Centre as average. The students were satisfied with the Centre staff being competent in their service delivery (responding to students' questions and giving them personal attention). Negative factors to service quality were found in the inability of staff to give prompt service, to fulfill promises and to tell students when services were to be performed. Lack of up-to-date hardware and software and unreliable Internet services were also weaknesses. The study has been reported in two parts; the details of the survey have been reported in Part 1 and 2 (this study) summarizes, discusses and analyses the survey report. The study concluded that, there was the need for the provision of adequate up-to-date equipment and software at the Centre and the increment in bandwidth for Internet connectivity. Recommendations on how to improve quality of service at the UCC ICT Centre have also been made.

Keywords: Expectations and perceptions of service, Ghana university, quality of service, service quality dimensions, service quality measurement, SERVQUAL

INTRODUCTION

Quality of Service (QoS) is a major factor in satisfying the customer and it depends on the interaction between the service provider and the customer. How the customer perceives the service and what the provider thinks they provide both depend largely on their personal experiences and expectations (Hinson, 2006). For good service quality the supplier should continuously assess how the service is experienced and what the customer expects (Van Bon *et al.*, 2004). This situation equally applies to services delivered by Information and Communications Technology (ICT) centers. This study addresses the quality of service at the ICT Centre of the University of Cape Coast (UCC)-one of the public universities in Ghana, established in 1962 (University of Cape Coast, 2009).

Objectives: The purpose of the study was to assess the quality of service at the ICT Centre of the University of Cape Coast from the student's perspective and to make recommendations for improving on service quality (Adzobu, 2011). The specific objectives were:

- To assess the service quality at the Centre by measuring the gap between perceptions and expectations of students who use the place
- Determine which aspects of service quality are important to them

- Determine factors influencing the quality of service at the Centre
- Make recommendations on how to improve on the level of service quality

The study will enable the university authorities to improve on the quality of service delivery.

The study has been reported in two parts; the details of the survey of the study have been reported elsewhere in Part 1 of this study. This study (Part 2) summarizes, discusses and analyses the survey report.

THEORETICAL FRAMEWORK

Quality of service: Customer satisfaction with a service can be defined by comparing the customer's perceptions of service received with his expectations of service desired. Exceptional quality is achieved when expectations are exceeded. But quality of service is deemed unacceptable when expectations are not met. Parasuraman *et al.* (1991) stated that the expectations of service quality provided to clients are the clients' wishes or needs, or what the service supplier should provide. On the other hand, the perception of service quality performance refers to services executed at the very moment the customer interacts directly with the services.

The Gaps model of service quality: As the theoretical framework for this study, the Gaps model of service

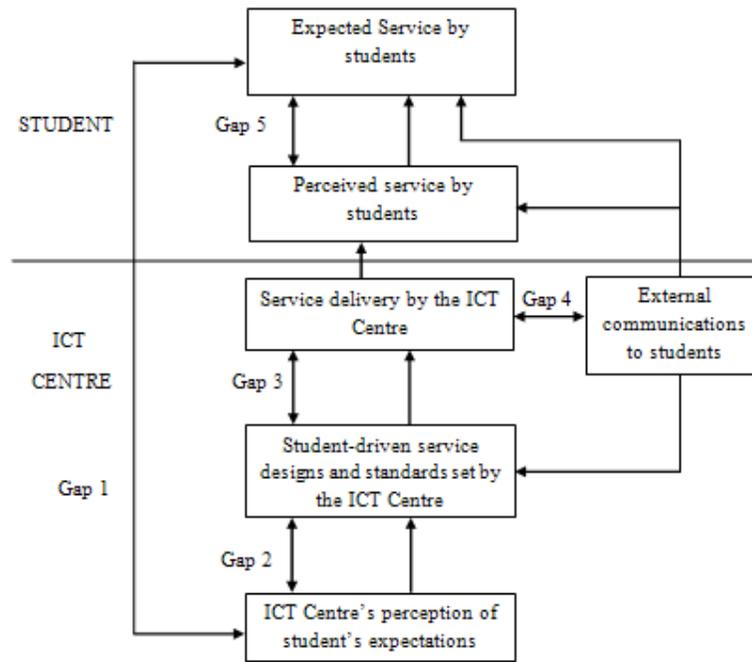


Fig. 1: The Gaps model of service quality (Parasuraman *et al.*, 1985)

quality (Parasuraman *et al.*, 1985) was adopted. In the Gaps model, quality of service is defined as the differences (gaps) between expectation and perceived performance along quality dimensions. Service quality is determined by the formula $Q \approx PS - ES$, where Q is perceived quality and PS and ES are the perceptions and expectations values respectively (Arshad and Ameen, 2010). Parasuraman *et al.* (1985) research revealed that service quality stems from a comparison of customers' expectations of service or desires from the service provider with their perceptions of the actual service performance. They ultimately extracted five dimensions (tangibles, reliability, responsiveness, assurance and empathy) based upon which they developed a quality of service model (Fig. 1) Fitzsimmons and Fitzsimmons (2004).

The model (which we have adapted for our ICT Centre-student environment) consists of five gaps:

- **Gap 1:** The difference between the students' expectations and the Centre's perceptions about the students' expectations
- **Gap 2:** The difference between the Centre's perceptions of student's expectations and how they translate those perceptions into service quality specifications
- **Gap 3:** The difference between service quality standards and the actual service delivered
- **Gap 4:** The difference between the services delivered to students and the promises made to the students
- **Gap 5:** The difference between students' expectations and perceived services

Parasuraman *et al.* (1985) stated that the key gap is Gap 5 and it is influenced by Gaps 1-4. And the magnitude of each gap affects service quality. The quality of service is then determined by the formula $Q \approx PS - ES$, where Q is perceived quality and PS and ES are the perceptions and expectations of service respectively (Arshad and Ameen, 2010). According to Fitzsimmons and Fitzsimmons (2004) when customer's expectations, ES , are less than perceptions, PS , (i.e., $ES < PS$), then service is of exceptional quality (and vice versa).

The five dimensions for service quality identified in the Gaps model are *tangibles* (the appearance of physical facilities, equipments, personnel and communication materials), *reliability* (the ability to perform promised services both dependably and accurately), *responsiveness* (i.e., the willingness to help students and to provide prompt service), *assurance* (the courtesy of the Centre employees, as well as their competence, ability to convey trust, confidence and assurances) and *empathy* (the provision of caring, individualized attention to students, including approachability, sensitivity and efforts to understand the students' needs).

The SERVQUAL model: Parasuraman *et al.* (1985) developed SERVQUAL (for *service quality*) as a tool for the assessment of quality of service. It is used to measure customer expectations and perceptions regarding the above five service quality dimensions. The model evaluates quality of service using two instruments; SERVEXP (*service expectations*) which

assesses client and supplier expectations related to the service and SERVPERF (*service performance*) which assesses client and supplier perception of performance regarding the service provided (Van Dyke *et al.*, 1999).

SERVQUAL use in ICT: The SERVQUAL model has been used quite extensively by researchers: Lai *et al.* (2007) to China’s mobile communication service; Khan (2010) to mobile phone customers’ in Pakistan; Roses *et al.* (2009) to a Brazilian retail bank; Bidgely *et al.* (2010) to an IT department of a sports organization and Badri *et al.* (2005) to Information Technology (IT) centres in higher education institutions in the United Arab Emirates. Ghana also reveals some research in the assessment of ICT services using adaptations of the SERVQUAL model. Boohene and Agyapong (2011) investigated into the mobile phone industry. Dzandu (2007) investigated service quality management of Information Technology systems in various industries in Accra. Uche and Hanyabui (2008) worked on the hospitality industry and Hinson *et al.* (2006) compared service quality across three banks.

RESULT ANALYSIS

For our study, the survey research method was adopted, as it allows the results to be generalized from the sample perspective to the entire population. It also facilitates the correlation of both quantitative and qualitative data (Bryman, 2008). The details of the survey of the study have been reported in Part 1 of this study. This study summarizes, discusses and analyses the survey report.

Population, sample size and data source: Our research focused on the student group with a resident undergraduate population of 15,789 (University of Cape Coast, 2010). In our study, the sample size used was 100 students out of 15,789. Data was obtained from questionnaire adapted from SERVQUAL questionnaire developed by Parasuraman *et al.* (1991). It contained biographic data of respondents, 20 statements (four on each of the five service quality dimensions as listed in (Table 1 to 5) enquiring the expected and perceived level of services on a five point scale ranging from 1 “*Strongly disagree*”; 2, *disagree*

Table 1: Gaps for tangibles dimension

Service Quality Attributes (SQA)	Perceptions (P) (mean)	Expectations (E) (mean)	Quality gap (P-E)
The ICT centre should have up-to-date hardware and software.	3.41	4.51	-1.10
The ICT centre’s physical facilities are visually appealing.	3.64	4.22	-0.58
The employees of the ICT centre are well dressed and appear neat.	3.87	4.18	-0.31
The appearance of the physical facilities at the ICT centre keeps up with the kind of services provided.	3.58	4.11	-0.53

Table 2: Gaps for reliability dimension

Service Quality Attributes (SQA)	Perceptions (P) (mean)	Expectations (E) (mean)	Quality gap (P-E)
ICT centre staff promise to do something by a certain time, they do so.	3.09	4.38	-1.29
ICT centre staff show sincere interest in solving students’ problems.	3.76	4.29	-0.53
The ICT centre performs services right the first time (dependable).	3.33	4.14	-0.81
The ICT centre staff provides their services at the promised time.	3.34	4.27	-0.93

Table 3: Gaps for responsiveness dimension

Service Quality Attributes (SQA)	Perceptions (P) (mean)	Expectations (E) (mean)	Quality gap (P-E)
Employees of the ICT centre should tell students’ exactly when services will be performed.	3.35	4.87	-1.52
Employees of the ICT centre give prompt service to students.	3.27	4.38	-1.11
Employees of the ICT centre are always willing to help students	3.62	4.39	-0.77
ICT centre staff were never too busy to respond to students’ requests	3.33	4.16	-0.83

Table 4: Gaps for assurance dimension

Service Quality Attributes (SQA)	Perceptions (P) (mean)	Expectations (E) (mean)	Quality gap (P-E)
Students are able to trust or have confidence in the employees of the ICT centre.	3.42	4.20	-0.78
Students feel safe in their encounters with employees at the ICT centre.	3.59	4.36	-0.77
Employees at the ICT centre are polite.	3.54	4.38	-0.84
Employees at the ICT centre have the knowledge to do their jobs well and to answer students’ questions.	4.74	4.42	0.32

Table 5: Gaps for empathy dimension’

Service Quality Attributes (SQA)	Perceptions (P) (mean)	Expectations (E) (mean)	Quality gap (P-E)
The employees at the ICT centre give students individual attention.	3.31	4.01	-0.70
The ICT centre has operating hours which are convenient to all students.	3.52	4.20	-0.68
The employees of the ICT centre give students personal services.	3.34	3.60	-0.26
ICT centre staff understands the specific needs of students.	3.46	4.08	-0.62

(D); 3, *not sure (NS)*; 4, *agree (A)* to 5 “*Strongly agree*” and comments from respondents. There were both open-ended and closed-ended questions. Secondary data was from journals, textbooks and the Internet.

This study assesses the quality of service at the UCC ICT Centre. The study was guided by research questions based on our objectives, as to what the gap between perceptions and expectations of students who use the Centre is, which dimensions of service quality were important to the students, what the factors influencing the quality of service at the Centre are and how the level of service quality at the Centre would be improved. Out of 105 copies of questionnaire sent out to students, 93 were returned, providing a response rate of 89%. The results cover the background of the students (gender, age, level, faculty or school) and their expectations, perceptions and remarks on the quality of service at the Centre.

Background of respondents: Out of 93 students who participated in the survey, 54 (58%) were males and 39 (41%) were females. The majority of respondents (both sexes), 81 (88%), were in the age range of 20-29, mainly young adults who could perceive the state of a service and accurately assess it. Most of the respondents were found to be from Level 100 (44.5%) and Level 300 (39.1%) of their four year study in the university. The highest number of students were from the Faculty of Arts, 34 (36.6%), followed by the Faculty of Education (28%).

Expectations and perceptions of service quality: Respondents were asked to express their opinions on their expectations and perceptions on the quality of service delivered by the ICT Centre on each of the service quality attributes (Table 1 to 5) of the five SERVQUAL dimensions (tangibles, reliability, responsiveness, assurance and empathy). Summaries of the survey results are presented below (with the details in Part 1 of this study).

Tangibles dimension: Under tangibles, respondents' expectations of all service quality attributes were found to be higher than their perceptions. This implies that the students' expectations were not met.

Reliability dimension: For reliability, it was realized that although the respondents agreed that services at the ICT Centre were reliable, their expectations of services were generally greater than their experiences.

Responsiveness dimension: The expectations of respondents under the service quality dimension “responsiveness” were very high compared to their perceptions. Their expectations were, therefore, not met.

Assurance dimension: Respondents' assessment of the Centre's service quality with regards to assurance was positive but their expectations were higher.

Empathy dimension: Although the respondents had a positive perception with respect to the service quality dimension “empathy”, their expectations were still higher than their perceptions.

Thus, it was generally observed, that there were discrepancies between expectations of respondents and their perceptions on all the SERVQUAL dimensions; expectations were higher than perceptions. This meant the expectations of quality of service delivery were not met by the ICT Centre. In subsequent sections, we discuss the analyses of the various service quality attributes.

Gap analysis of service quality attributes: As stated all along, in this study, the Quality of Service (QoS) at the UCC ICT Centre was measured by finding the difference between the means of expectations and perceptions of the respondents. The difference is the gap.

Gap analysis for tangibles dimension: The results in Table 1 show the Service Quality Attributes (SQAs), expectation and the perception means of the students with their corresponding quality gap values with regards to the tangibles dimension.

It was observed that all the four SQAs of tangibles dimension had negative gaps. Three of them were in the range 0 to -1. The SQA ‘The ICT Centre should have up-to-date hardware and software’ had a negative gap in the range -1 to -2. A negative gap implies that the expectations of the respondents were higher than their perceptions of the quality of service at the Centre.

Gap analysis of reliability dimension: The results in Table 2 show the SQAs, expectation and the perception means of the students with their corresponding quality gap values with regards to the reliability dimension. It was observed that all the gap scores for SQAs of reliability were negative values. The attribute ‘ICT staff promise to do something by a certain time, they do so’ had a negative gap in the range of -1 to -2 and the other three attributes were in the range of 0 to -1. Negative gap values meant that the expectations of the students were not met.

Gap analysis for responsiveness dimension: The results in Table 3 show the SQAs, expectation and the perception means of the students with their corresponding quality gap values with regards to the responsiveness dimension. The quality gaps for the SQAs were all negative. Two SQAs were in the range of -1 to -2. These were: ‘Employees of the ICT Centre should tell students exactly when services would be

Table 6: Perception and expectation means of SQDs

Dimensions	Perception mean (P)	Expectation mean (E)	Quality gap (P-E)
Tangibles	3.63	4.26	-0.63
Reliability	3.38	4.27	-0.89
Responsiveness	3.39	4.45	-1.06
Assurance	3.82	4.34	-0.52
Empathy	3.41	3.97	-0.56
Overall mean	3.53	4.26	-0.73

performed’ (-1.52) which had the highest negative quality gap and ‘Employees of the ICT Centre give prompt service to students’ (-1.11). The other two SQAs had gap values in the range 0 to -1. The results showed that the respondents’ expectations were higher than their perceptions of quality of service at the Centre.

Gap analysis for assurance dimension: The results in Table 4 show the service quality attributes expectations and the perceptions means of the students with their corresponding quality gap values with regards to the assurance dimension. The results indicated that three SQAs had gap values in the range 0 to -1. One however, (Employees at the ICT Centre have the knowledge to do their jobs well and to answer students’ questions) had a positive gap value (0.32) which implied that respondents’ perceptions exceeded their expectations.

Gap analysis for empathy dimension: The results in Table 5 show the service quality attributes expectations and the perceptions means of the students with their corresponding quality gap values with regards to the empathy dimension. It was observed that all the quality gap values were negative and were in the range 0 to -1. The SQA ‘The employees at the ICT Centre give students individual attention’ had the highest negative value (-0.70) and the least was ‘The employees of the ICT Centre give students personal services’, (-0.26). Negative gap values obtained meant that the students’ expectations with regards to the SQD empathy were higher than their perceptions.

Relative importance of SQDs: The results in Table 6 and Fig. 2 show the perception and the expectation mean values of the Service Quality Dimensions (SQDs). This was to help select the most important SQD influencing the quality of service of the UCC ICT Centre. In the determination of the relative importance of the Quality of Service Attributes (SQAs) of the Centre, the (averages) means of SQDs were calculated from respondents SQAs for both expectations and perceptions. The dimension with the highest score for expectations was the most important dimension to the respondents. So far as respondents’ expectations were concerned, responsiveness with mean (4.45) was the most essential dimension, followed by assurance, reliability, tangibles and empathy. On the other hand,

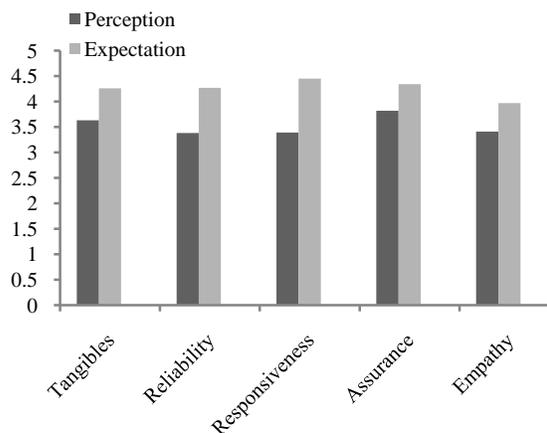


Fig. 2: Perception and expectation means of SQDs

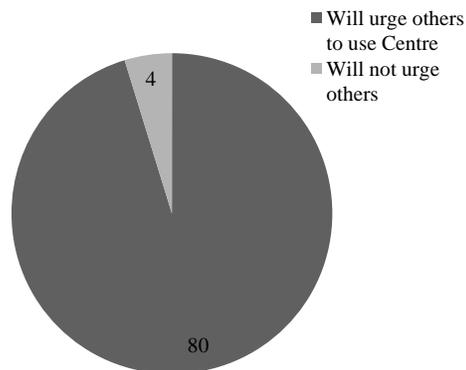


Fig. 3: Will you urge others to use the ICT centre?

when it came to perceptions ranking, assurance ranked first with a mean of 3.82, followed by tangibles, empathy, responsiveness and reliability.

It was also observed that all the SQ gap values were negative. The SQD responsiveness had the highest negative value (-1.06); the gap values for the other dimensions were in the range 0 to -1. The overall perception mean was 3.53 while the overall expectation mean was 4.26. The overall service quality gap was -0.73.

When students were asked whether or not they would urge their colleagues to use the ICT Centre, 80 (95.2%) of them answered, ‘yes’, only 4 (4.8%), stated otherwise (Fig. 3).

Also, 80 (93%) affirmed that they would continue to use the ICT Centre and 6 (7%) said they would



Fig. 4: Will you continue to use the ICT centre?

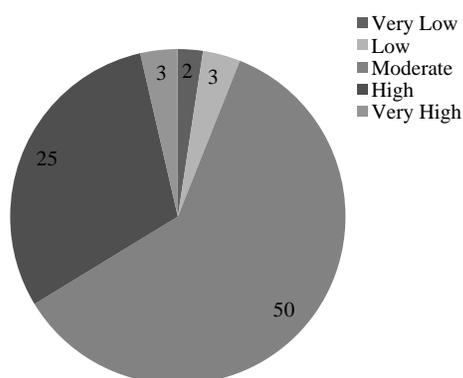


Fig. 5: Overall service quality rating

Table 7: Overall service quality

Rating of service quality	Frequency
Very low	2 (2.4%)
Low	3 (3.6%)
Moderate	50 (60.2%)
High	25 (30.1%)
Very high	3 (3.6%)
Total	83 (100%)

discontinue using the Centre (Fig. 4). This therefore implied that the majority of the students would recommend the Centre to others and would continue to use the ICT Centre.

The overall QoS at the ICT centre: Overall, the respondents rated the quality of service of the ICT Centre as moderate. Table 7 and Fig. 5 show the detailed responses.

Out of the 83 responses obtained 50 (60.2%) described the quality of service as moderate. However, 25 (30.1%) of respondents described it as high. Thus, most of the respondents rated the overall service quality of the ICT Centre as moderate.

Respondents' comments about QoS at the UCC ICT centre: With regards to the remarks on what respondents liked about the quality of service at the Centre, several comments were made. Remarks about staff were: they were punctual, well dressed, affable and willing to help users. About infrastructure,

respondents remarked that the Centre's environment was conducive for Internet browsing and learning and the Centre itself was found to be spacious. The serene ambience of the Centre was most frequently mentioned by respondents 18 (24.7%). This was followed by the willingness of the employees to help users 17 (23.3%). The rest of the comments had frequencies less than 10% each. The willingness of employees to help students, the second most stated remark, is a service quality dimension of responsiveness. Responsiveness was also found to be the most important dimension to students in this study.

The following remarks were made by majority of the respondents on what they disliked about the quality of service of the ICT Centre; the Centre staff did not give them prompt service; there was insufficient browsing time as Internet service at the ICT Centre was usually either disconnected or slow in speed (i.e., unreliable); lack of prompt maintenance of computers and insufficient seating accommodation at the Centre. The most frequently stated dislike was the unreliability of the Internet service 34 (52.2%). The frequencies of the rest of the remarks were less than 10% each.

DISCUSSION OF FINDINGS

We now briefly discuss the findings from our study relative to some of what have already been obtained elsewhere in the literature.

Quality of service at the UCC ICT centre: The Quality of Service (QoS) at the UCC ICT Centre was assessed by measuring the gap (difference) between Perceptions (PS) and Expectations (ES) of students who use the Centre (Gap = PS-ES). Data obtained showed that students' perceptions mean (3.53) was below their expectations mean (4.26). The gap between the perceptions and the expectations was therefore -0.73. A gap between zero (0) to negative one (-1) indicates that students have a good perception about the overall service quality. A negative deviation from zero means dissatisfaction and ranks respondents concerns about where QoS falls short of their expectations. However, small negative values between 0 and -1 are interpreted as good (Arshad and Ameen, 2010). The level of service is acceptable but not yet at the desired level of service which should be zero. Generally, improvements in service should result in fewer and smaller negative QoS gaps or positive QoS gap scores.

Results from the overall Quality of Service (QoS) rating of the ICT Centre by respondents indicated moderate. This implies that the overall QoS was average or good. The two results, the gap analysis and respondents' rating of the QoS, were the same. Arshad and Ameen (2010) in their research found the overall service quality and satisfaction of the university's libraries to be average. Badri *et al.* (2005) also obtained the same results in their research on the overall service

quality of the IT Centers in three universities in the United Arab Emirates (UAE). The gap values they obtained were between zero (0) and negative one (-1) and so was therefore average. It can therefore be concluded that the quality of service at the UCC ICT Centre was average.

Dimensions of QoS important to students: Van Iwaarden *et al.* (2003) used SERVQUAL to study quality factors perceived to be important in relation to websites. They defined expectations of users as importance and their perceptions as experiences. The expectation means of SQAs were used to determine the important service quality dimensions of websites. In our determination of the important SQDs of the UCC ICT Centre, the method used by Van Iwaarden *et al.* (2003) was adopted.

The average means of SQDs were calculated from respondents SQAs. The dimensions with the highest scores, responsiveness (4.45) and assurance (3.34) were found to be important SQDs influencing QoS. These two dimensions ranked fourth and first respectively, among the five SQDs under perceptions. The gap for responsiveness, the most important factor, was -1.06. This meant the expectations of respondents were not being met and it was a major short-fall of the quality of service of the ICT Centre of the University. By improving upon the above dimension, the overall quality of service gap of the Centre will improve. Responsiveness measures the commitment of helping customers and providing them with prompt service. Employees (staff) are expected to be available and accessible to assist customers (students) promptly and in case of any delays employees should tell customers when service would be performed.

The gap for the second most important SQD, assurance, was -0.52. This was in the range 0 to -1 which was good (Arshad and Ameen, 2010). A negative deviation from zero means dissatisfaction and ranks respondents concerns about where the quality of service falls short of their expectations. In this case the level of service was acceptable but not at the desired level of service which should have a gap score of zero. Generally, improvements in service should result in fewer and smaller negative QoS gaps or positive QoS gap scores.

Yap *et al.* (2007) explored the 'commonality in Service Quality Measurement across Industries'. They also found assurance and responsiveness as important SQDs common to six service industries. Smith *et al.* (2007) found reliability to be the most important factor for all customers in an Information Technology service department in a Higher Education Institute (HEI) instead of responsiveness. The results from this study were also affirmed by Landrum and Prybutok (2004). They concluded that users rated responsiveness as one

of the essential dimensions above other service quality dimensions.

Factors influencing QoS at the UCC ICT centre-positively: The Service Quality Attributes (SQA) with a gap in the range 0 to -1 implies that the respondents had a good perception of those particular SQAs. These attributes were considered to be the strengths or factors that influenced the quality of service at the UCC ICT Centre positively. Fifteen SQA had gaps between zero and negative one (-1) and one had a small positive gap of 0.32. This meant that these SQAs positively influenced the SQ at the ICT Centre.

With regards to the Service Quality Dimension (SQD) "tangibles" the physical facilities were seen to be visually appealing, employees of the ICT Centre dressed well and appeared neat and the appearance of the Centre kept up with the kind of services rendered to students. This result corroborates with Badri *et al.* (2005) research findings in ICT Centers of the universities in the UAE. Their SQAs had gap values between zero (0) to minus one (-1). They concluded that these SQAs positively influenced the quality of service at the ICT Centers in both universities.

Factors that influenced the perception of the respondents with regards to the SQD "responsiveness" were that the employees of the Centre were willing to help students and were never too busy to respond to students' requests. The employees of the IT Centre were always willing to help students. Badri *et al.* (2005) also confirmed that the employees of the IT Centers in three UAE Universities in their study were always willing to help their clients. And it was a factor that influenced the service quality at the three universities positively.

In addition, the study also showed that with regards to SQD "reliability", the ICT Centre staff showed sincere interest in solving students' problems, performed services right the first time and also provided their services at the promised time. Students had confidence and felt safe in their encounters with the staff. The employees were seen to be polite and also had the knowledge to perform their jobs well. The study also revealed that the staff rendered personal services to students and they understood the specific needs of the students. The operating hours were also found to be convenient to the students. Badri *et al.* (2005) also indicated in their study that users of IT Centers in all the three universities found their operational hours to be convenient to clients. This factor also influenced the service quality of the ICT Centre positively and so was part of their strengths.

Four Service Quality Attributes (SQAs), one each under "tangibles" and "reliability" and two under "responsiveness", had gaps greater than -1. SQAs with

a gap score between -1 to -2 meant that the students expectations were quite high as compared to their perceptions and that resulted in a gap greater than one (>1) (Arshad and Ameen, 2010). These attributes were considered to be weaknesses or factors adversely affecting the quality of services at the UCC ICT Centre. Factors that influenced the quality of service of the Centre negatively, were the lack of up-to-date equipment and software (tangibles), the employees were not able to fulfill their promises (reliability), not able to tell students exactly when services were to be performed and not able to give prompt service to the students (responsiveness).

In this research, all the 20 statements regarding the five Service Quality Dimensions (SQDs) recorded discrepancies between the perceptions and expectations of students. 'Employees at the Centre have the knowledge to do their jobs well and to answer students' questions' was the only service quality attribute that had a positive gap score. This meant that the employees at the Centre were competent. This corroborates with findings by Bidgely *et al.* (2010) in their research in which the highest service quality gap was obtained on the same SQA-the employees at their IT department had the knowledge to do their jobs well and to answer customers' questions.

Factors influencing QoS at the UCC ICT centre-negatively: All the other SQAs were negative. Among the SQAs' 'Employees of the ICT Centre should tell students exactly when services will be performed' had the highest negative gap score. This implied that respondent's expectations were higher than their perceptions therefore their assessment of service quality with respect to this SQA was much lower. It is concluded therefore that the scheduling of the Centre programmes and activities was not effective. This shortcoming has direct relationship with SQAs, 'ICT Centre staff promise to do something by a certain time, they do so' and 'Employees of the ICT give prompt service to students'; both had negative scores greater than 1. When scheduling of programmes and activities is not effective, the programmes cannot take place at the time promised and the service therefore cannot be delivered promptly. The fourth SQA with a gap score greater than 1, was 'the ICT Centre should have up-to-date hardware (equipment) and software'. It is also concluded here that the ICT Centre will need to improve on its hardware and software.

CONCLUSION

In this research, all the 20 statements regarding the Service Quality Dimensions (SQDs) recorded discrepancies between the perceptions and expectations of students. The UCC ICT Centre's overall service quality was average or moderate. Assessment of service

quality is a continuous process and it should be repeated at regular intervals for feedback. Measurement of service quality is a first step of Total Quality Management (TQM) programmes (Arshad and Ameen, 2010). Consequently, improvement of services at the UCC ICT Centre in the light of this assessment is a step in the process of TQM of the Centre. It is hoped that if the findings of this study are adopted, the ICT needs and expectations of clients of the ICT Centre, especially the students of UCC, would be met. Finally, the recommendations from this research will help the University to revise its current ICT policy and so therefore improve the overall ICT service quality of the University as a whole.

RECOMMENDATIONS

Based on the findings of our entire study, the following recommendations have been made:

- **Continuous assessment of service quality:** The ICT Centre's management needs to continue to assess the levels of expectations and perceptions of its clients through repeated administration of the SERVQUAL instrument. This will help measure the QoS gaps and also to be able to identify which Service Quality Dimensions (SQDs) are their strengths and weaknesses. Remedial action may then be taken on their weaknesses in order to improve service quality. The SERVQUAL instrument should be used to assess the quality of service from the staff perspective also. This will help them to note their perceptions of quality service delivery vis-à-vis those of clients. Any realization will help them improve their service standards or setup service standards if they do not have one.
- **Improvement in ICT infrastructure at the UCC ICT centre:** Computing platforms that are used to provide computing services to connect staff and students together should be improved. Lack of up-to-date hardware was found to be one of the weaknesses affecting the delivery of quality service to students. The ICT Centre should therefore procure the necessary computer and telecommunication equipment to improve its computing and network services platforms.
- **Training of ICT centre staff:** For the staff to perform effectively and efficiently, they must be continuously trained to enhance their skills so that they can meet the changing needs of the students at the Centre. The management of the Centre should put in place training and development plans to address the staff skill competencies.
- **Provision of services promptly:** Patrons of the Centre normally expect prompt access to services. They therefore get disappointed when the Centre is

not able to provide basic service expectations. The Centre's staff should be able to give reasons why service is not being provided at a particular time and the efforts being made by the Centre to restore services. Service failures are inevitable, the Centre should therefore put in place recovery processes that would quickly correct failures and compensate clients.

REFERENCES

- Adzobu, P.K., 2011. Service quality at the ICT centre of the university of cape coast, Ghana. Unpublished MA Thesis, Submitted to the Department of Information Studies, University of Ghana, Legon.
- Arshad, A. and K. Ameen, 2010. Service quality of the University of the Punjab's libraries: An exploration of users' perceptions. *Perform. Measur. Metr.*, 11(3): 313-325.
- Badri, M., M. Abdulla and A. Al-Madani, 2005. Information technology centre service quality: Assessment and application of SERVQUAL. *Int. J. Qual. Reliab. Manag.*, 22(8): 819-848.
- Bidgely, M., J. Shahlayi, M. Hosseini and S. Ghasemi, 2010. Identifying Service Quality Dimensions in IT Department of Sports Organizations, Retrieved from: <http://www.sportmarketingassociation.com/2010conference/2010conferencepresentations/P-38.pdf>, (Accessed on September 10, 2012).
- Boohene, R. and G.K. Agyapong, 2011. Analysis of the antecedents of customer loyalty of telecommunication industry in Ghana: The case of Vodafone (Ghana). *Int. Bus. Res.*, 4(1): 229-240.
- Bryman, A., 2008. *Social Research Methods*. 3rd Edn., Oxford University Press, New York, pp: 21.
- Dzandu, M., 2007. Total quality management of information technology systems in industries in Accra. Unpublished M. Phil Thesis, Submitted to the Department of Information Studies: University of Ghana, Legon.
- Fitzsimmons, J.A. and M.J. Fitzsimmons, 2004. *Service Management*. 4th Edn., McGraw- Hill, Boston, pp: 132-137.
- Hinson, R., 2006. *Marketing of Services: A Managerial Perspective*. Sedco-Longman Ltd., Accra, pp: 1-127.
- Hinson, R., A. Mohammed and R. Mensah, 2006. Determinants of Ghanaian bank service quality in a universal banking dispensation. *Banks Bank Syst.*, 1(2): 69-81.
- Khan, M., 2010. An empirical assessment of service quality of cellular mobile telephone operators in Pakistan. *Asian Soc. Sci. J.*, 6(10): 164-177.
- Lai, F., J. Hutchinson, D. Li and C. Bai, 2007. An empirical assessment and application of SERVQUAL in mainland China's mobile communications industry. *Int. J. Qual. Reliab. Manag.*, 24(3): 244-262.
- Landrum, H. and V. Prybutok, 2004. A service quality and success model for the information service industry. *Eur. J. Oper. Res.*, 156(3): 628-642.
- Parasuraman, A., V. Zeithaml and L. Berry, 1985. A conceptual model of service quality and its implications for future research. *J. Mark.*, 49(4): 41-50.
- Parasuraman, A., V. Zeithaml and L. Berry, 1991. Refinement and reassessment of the SERVQUAL scale. *J. Retail.*, 67(4): 420-450.
- Roses, L., N. Hoppen and J. Henrique, 2009. Management of perceptions of information technology service quality. *J. Bus. Res.*, 62(9): 876-882.
- Smith, G., A. Smith and A. Clarke, 2007. Evaluating service quality in universities: A service department perspective. *Qual. Assur. Educ.*, 15(3): 334-351.
- Uche, O. and P. Hanyabui, 2008. The Impact of customer care on experiences in service quality delivery (A Case Study of Labadi Beach Hotel-Ghana). Unpublished Bachelor Thesis in Business Administration School of Sustainable Development of Society and Technology, Mälardalen University, Retrieved from: <http://www.essays.se/essay/4ac4db59d1/>, (Accessed on September 10, 2012).
- University of Cape Coast, 2009. UCC ICT Centre: The Centre of Choice. University of Cape Coast. Cape Coast.
- University of Cape Coast, 2010. *Basic Statistics*. University of Cape Coast Press, Cape Coast.
- Van Bon, J., M. Pieper and A. Van der Veen, 2004. *IT Service Management: An Introduction Based on ITIL*. Van Haren Publishing, Grijpskerk, pp: 13.
- Van Dyke, T.P., V.R. Prybutok and L.A. Kappelman, 1999. Cautions on the use of the SERVQUAL measure to assess the quality of information systems services. *Decision Sci.*, 30(3): 1-15.
- Van Iwaarden, J., T. Van der Wiele, L. Ball and R. Millen, 2003. Applying SERVQUAL to websites: An exploratory study. *Int. J. Qual. Reliab. Manag.*, 20(8): 919-935.
- Yap, D., G. Timbrell, G. Gable and T. Chan, 2007. Towards Global Service Quality Dimensions: An Exploration of Commonality in Service Quality Management across Industries. 18th Australasian Conference on Information Systems (ACIS), Toowoomba, Retrieved from: <http://eprints.qut.edu.au/13957/1/13957.pdf>, (Accessed on September 10, 2012).