An Assessment of the Reliability and Validity of the SERVQUAL Scale in the Higher Education Context of Tanzania

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Abstract: *Although service quality has received increasing attention in higher education, there is lack of a standardized instrument to measure it. The most popular and widely used instrument to measure service quality across industries is the SERVQUAL scale. However, since the SERVQUAL scale was developed in the retail commercial sector, its reliability and validity for measuring service quality in the higher education sector has been questioned. This is because higher education sector differs significantly from the retail commercial sector for whichthe SERVQUAL scale was developed and widely applied. This paper assesses the applicability of the SERVQUAL scale for measuring service quality in higher education, particularly in the context of Tanzania. The data were obtained from 500 students in two public universities in Tanzania. The study found out that, the SERVQUAL scale, as modified for this study, is reliable and valid for measuring service quality in the higher education sector.*

Key Words: Reliability, Validity, Higher education, SERVQUAL.

Introduction

In order to achieve superiority in service quality and realize its benefits, higher education institutions must have the means to measure it. One of the most valid and reliable measurement instruments used in the evaluation of service quality across service sectors is the SERVQUAL scale. Despite its wide application across service sectors, there have been arguments about its applicability to all service sectors, that is, whether the instrument is universal or not (Atrek and Bayraktaroglu, 2012). Since the SERVQUAL scale was developed in the retail industry, it may not be able to measure service quality in different service sectors adequately. The reason is that, each service sector has unique and distinguished characteristics (Soliman and Alzaid, 2002).

Thus, the ability of SERVQUAL to measure service quality in higher education is unclear (Hoe, 2005). This is because higher education differs from the services used in the development of SERVQUAL(the retail commercial sector) in terms of: (1) the nature of the service act, (2) the length and nature of relationship with the client, (3) levels of customization and judgement, (4) nature of demand relative to supply, and (5) method of service delivery. Therefore, the ability of this scale to measure service quality in higher education service sector requires further investigation.

Few studies have tested the applicability of the SERVQUAL scale in the higher education sector (Brochado and Marques, 2009; Hoe, 2005). Though the attempt has been made to extend the knowledge to higher education sector, these studies were conducted in the developed countries which are likely to differ from the developing countries in terms of the number and composition of service quality dimensions (Palmer, 2011). Studies have shown that customer expectations, values, beliefs and perceptions differ from one culture to another and from one country to another (Lee, 2007). Furthermore, there appears to be a positive relationship between economic development of a country and its service sector; developed economies being increasingly more service-orientated than developing economies (Palmer, 2011). Thus, standardized instruments developed and tested in the west may miss important attributes in developing countries. These two studies, in addition, have utilized 22 items of the original SERVQUAL scale.

The main objective of this study was to assess the reliability and validity of the SERVQUAL scale, as modified for this study, for measuring service quality in higher education, particularly in the context of Tanzania.

Theoretical Base

Reliability of Measurement Instruments
Reliability is defined as the extent to which a questionnaire, test, observation or any measurement procedure produces the same results on repeated trials (Cook and Beckman, 2006). In other words; it is the stability or consistency of scores over time or across raters. There are three aspects of reliability, namely: equivalence, stability and internal consistency (Creswell, 2008).

The equivalence aspect considers how much error may get introduced by different investigators or different samples of the items being studied (Patten, 2005). Equivalence is measured through a parallel forms procedure or by assessing inter-rater reliability (Creswell, ibid). The stability aspect of reliability is concerned with securing consistent results with repeated measurements of the same researcher and with the same instrument (Patten, 2005). Stability is assessed by comparing results of repeated measurements (Polit and Beck, 2004). The internal consistency aspect concerns the extent to which items on the instrument are measuring the same thing (Patten, 2005). The appeal of an internal consistency index of reliability is that, it is estimated after only one test administration, and therefore avoids the problems associated with testing over multiple time periods (Creswell, op.cit.). Internal consistency is estimated via the split-half reliability index, coefficient alpha index or the Kuder-Richardson formula 20 (KR-20) indexes. However, the widely employed method is coefficient alpha index (Creswell, ibid).

In this study, the internal consistency aspect of reliability was investigated due to the following reasons: (1) It is the most important aspect of reliability in connection with the multiple item scale (Cook and Beckman, 2006) like the ones employed in this study, (2) Since the present study adopts a cross-sectional strategy, internal consistency reliability is feasible because it is estimated after only one test administration (Creswell, 2008), (3) The process of validating

measurement instruments requires among other things, an investigation of internal consistency reliability (Nunnally and Bernstein, 1994).

Validity of Measurement Instruments

Validity is defined as the extent to which the instrument measures what it purports to measure (Cook and Beckman, 2006). This implies that, the results of any psychometric assessment have a meaning (validity) only in the context of the construct they purport to assess. Validity is not a property of the instrument, but of the instrument's scores and their interpretations (Cook and Beckman, 2006). Thus, validity must be established for each intended interpretation.

Scholars have distinguished a number of kinds of statements about the validity of a measure, including: (a) content validity which refers to the extent to which the measure adequately samples the content of the domain that constitutes the construct; (b) criterion validity which refers to the extent to which a measure is empirically associated with relevant criterion variables, which may either be assessed at the same time (concurrent validity), in the future (predictive validity), or in the past (postdictive validity), and (c) construct validity, an overarching term now seen by most to encompass all forms of validity, which refers to the extent to which a measure adequately assesses the construct it purports to assess(Nunnally and Bernstein, 1994). However, contemporary thinking on the subject suggests that, these distinctions are arbitrary and that all validity should be conceptualized under one overarching framework, "construct validity" (Cook and Beckman, 2006). This approach underscores the reasoning that an instrument's scores are only useful in as much as they reflect a construct and that, evidence should be collected to support this relationship. According to this conceptualization, the distinct concepts of content and criterion validity are preserved as sources of validity evidence within the construct validity rubric.

Construct validation is always theory dependent (Cook and Beckman, 2006). That is, a statement about the validity of an instrument is a statement about the extent to which it's observed associations with measures of other variables, match theoretical predictions about how it should be associated with those variables. In fact, if the theory is wrong, the pattern of correlations will appear to invalidate the measure. The aim of construct validation basically is to establish its relation to other variables with which it should theoretically be associated positively, negatively, or practically not at all (Nunnally and Bernstein, 1994). Thus, construct validity is typically established by presenting correlations between a measure of a construct and a number of other measures that should, theoretically, be associated with it (convergent validity) or vary independently of it (discriminant validity) (Cook and Beckman, 2006). In addition, when assessing simultaneously convergent and discriminant validity, one confirms the presence of construct validity (Cook and Beckman, 2006). This implies that the best way to investigate construct validity is to check convergent and discriminant validity altogether (Ame, 2005). This study has adopted this approach.

METHODS

Phase One
The Modification of SERVQUAL Scale

The 22 service quality items in the original SERVQUAL scale (see Appendix A) were modified to fit the higher educational process. For example, item 1 of the SERVQUAL instrument that states "XYZ has modern looking equipment" was modified for item 3 on the modified SERVQUAL instrument to read as "Classrooms at XYZ have up-to-date teaching support equipment". This was consistent with authors' guidelines for using SERVQUAL (Parasuraman *et al*., 1991) who state that:

> Since SERVQUAL is the basic "skeleton" underlying service quality, it should be used in its entirety as much as possible. While minor modifications in the wording of items to adapt them to a specific setting are appropriate, deletion of items could affect the integrity of the scale and cast doubt on whether the scale fully captures service quality (Parasuraman *et al*., 1991, p. 445).

In addition, Parasuraman *et al*., (1993) propose that, the 22-SERVQUAL items be supplemented with context specific items when necessary. This is due to the fact that, there might be sector specific dimensions that are closely related to the nature of the service sector. In view of this, 23 new items to measure important aspects of service quality in higher education were incorporated into SERVQUAL. The 23 new items were generated from the literature review and various qualitative research inputs, namely: focus groups, pilot test and expert validation. Literature review and qualitative research have been used to develop new SERVQUAL items (Cavana *et al*., 2007; Tsoukatos, 2007).

Focus group interviews were conducted with third year undergraduate students, conveniently selected from different degree programmes in both universities under study. Convenience sampling was adopted because of the exploratory nature of this phase of the study. Third year students were considered to be experienced and pretty familiar with the university services, thus being likely to give more realistic expectations and perceptions of service quality. Two focus group interviews were conducted in each of the two universities under study with eight participants each, and a researcher as the moderator. This was consistent with Ghauri and Gronhaug's (2010) recommendation that, a focus group should have between six and ten participants. Each focus group interview lasted approximately between one hour and one and a half hours in duration which was consistent with most researchers' recommendations. Specifically, focus group interviews were conducted to identify whether the factors suggested as having an influence on perceived service quality from the literature review, can be generalized to the context of higher education, and to generate additional items to measure the service quality of higher education, that covers all aspects of the services that students are receiving. In view of this, the participants in the focus groups were asked to: (1) identify the physical and service needs of students during their studies at the university, (2) describe the meaning of service quality as it relates to students, and (3) describe the ideal service experience and expectations

about the service experience at the university. This process resulted in the modified SERVQUAL instrument (see Appendix B) with 45-items under the same five dimensions of service quality: Tangibles (sixteen items), Reliability (six items), Responsiveness (six items), Assurance (eleven items) and Empathy (six items).

Pilot Study

Prior to deciding on the final version of the modified SERVQUAL, pretesting was performed to enhance the relevance and clarity of the scale items, as well as the overall attractiveness of the survey. In relation to this, the modified SERVQUAL was subjected to a pilot testing with 40 randomly selected third-year undergraduate students. To test for face validity, students were requested, while completing the survey to mark any item which seemed inappropriate or unclear for a survey of service quality in higher education, and to comment on any perceived omissions or errors concerning the modified SERVQUAL.

The modified SERVQUAL was found to have face validity, since no additional expectations were identified, implying that all 45 items were essential factors of a university service quality. This means that, on the whole, the scale and each of its individual items seemed appropriate for this survey. Although a minimum sample size of 10 is recommended as adequate to show faults in a questionnaire (Fink, 1995), this study employed a sample size of 40 for better improvement. Results from the pilot study suggested that, students can describe and analyze their personal perceptions of the quality of the service received from the university. The modified SERVQUAL was appropriate for the measurement of service quality of the university.

The Statistical Package for Social Sciences (SPSS) version 19.0 was applied to evaluate the item scales for both the expectations and perceptions portions of the modified SERVQUAL. Internal consistency of the measure was determined using Cronbach's alpha coefficients (Cook and Beckman, 2006). The resulting coefficients were 0.84, 0.92 and 0.93 for expectations, perceptions, and difference (gap) sections of the modified SERVQUAL, respectively (Table 1). As a guideline, an alpha coefficient of 0.70 and above is considered to be the criterion for demonstrating internal consistency of new scales and established scales (Tavakol and Dennick, 2011).

In general, there was good internal consistency for the five dimensions of the modified SERVQUAL in all three sections: expectations, perceptions, and difference (gap) (See Table 1). That is, coefficient alphas for perception, expectation, and gap items by dimensions and at the overall scale level were all above the stipulated 0.70 score for reliability. The results are comparable to those reported from other applications of the SERVQUAL, which ranged from 0.76 to 0.97 (Brochado and Marques, 2009; Vanpariya and Ganguly, 2010).

The modified SERVQUAL was subsequently submitted to a panel of three experts (an academician, a researcher and a senior administrator) for feedback before being administered for a full-scale survey. The experts were asked specifically: (1) to offer an advice on whether items were comprehensibly worded for the average Tanzanian student and suggest any appropriate

alterations, and (2) to propose the addition of new items if necessary or the removal of items they would consider as meaningless. The experts found all items in the modified SERVQUAL comprehensibly worded and appropriate to the Tanzanian higher education setting.

Table 1: Reliability Coefficients for the Modified SERVQUAL Scale

Dimension	Number of Items	Pre-test Results		
		Perception (P)	Expectation (E)	Gap (P-E)
Tangibles	16	0.87	0.69	0.81
Reliability	6	0.74	0.75	0.69
Responsiveness	6	0.78	0.81	0.82
Assurance	11	0.83	0.68	0.74
Empathy	6	0.69	0.72	0.71
Overall Scale	45	0.92	0.84	0.93

Phase Two
Data Collection
The study employed the modified SERVQUAL scale to collect data. The survey was conducted in two purposively selected public universities in Tanzania. Respondents (students) were systematically selected and a total of 250 students from various degree programmes in each of the two universities were selected for participation in this study. The questionnaire took about 20 minutes to complete. It is important to note that the names of the universities under study have not been mentioned in connection to the data collected because it was agreed as a condition during data collection.

Data Analysis
To assess reliability of the SERVQUAL scale for measuring service quality in higher education, internal consistency reliability (Cronbach's alpha coefficients) of the scale was investigated using SPSS (version 19.0). Cronbach's alpha, which is based on the internal consistency of a scale, is a commonly used index for a scale's reliability (Tavakol and Dennick, 2011). It measures the extent of commonality among the items (Cohen and Swerdlik, 2010), suggesting that, if the scale's items are measuring the same construct, the items will be positively correlated with each other. The value of this coefficient ranges from 0 to 1 implying that, the higher the alpha coefficient, the higher the internal reliability. However, a value of 0.70 or greater indicates good scale reliability (Tavakol and Dennick, 2011).

Specifically, the Cronbach's alpha coefficients of the SERVQUAL scale were computed both at the dimension level (to measure the internal consistency of individual items within each dimension) and at the overall scale level (to measure the commonality of the dimensions to the perceived service quality construct), across all the three data sets: university A, B, and the combined sample. Factor analysis was also conducted to assess the dimensionality of the modified SERVQUAL scale by utilizing the factor module of SPSS version 19.0 (Thompson, 2004).

To evaluate validity of the SERVQUAL scale for measuring service quality in higher education, the two most widely accepted forms of validity - convergent and discriminant validity were assessed (Cook and Beckman, 2006). Specifically, the degree of convergent and discriminant validity of the SERVQUAL scale was assessed using SPSS (version 19.0) by computing the average correlations between students perceived service quality (as measured by the modified SERVQUAL scale) and students' responses to measures of conceptually related variables: the overall service quality; the overall satisfaction; and the recommend intentions (Hair *et al*., 2005; Parasuraman *et al*., 1993).

Convergent validity assesses the degree to which two measures of the same concept are correlated (Hair *et al*., 2005). For the purpose of this study, convergent validity was examined by computing the average correlations between service quality (as measured by the modified SERVQUAL scale) and the directly measured overall service quality. Discriminant validity, on the other hand, gauges the extent to which measures of two different constructs are comparatively distinctive from each other (Hair *et al*., 2005). In this study, discriminant validity was examined by correlating service quality (as measured by the modified SERVQUAL scale) with conceptually distinct measures, namely; "the overall satisfaction" and "the intention to recommend the university to a friend" (Hair *et al*., 2005; Parasuraman *et al*., 1993).

It is contended that, for the evidence of discriminant validity, the correlation between two different measures of the same variable must be higher than correlation between the measure of that variable and those of any other variable (Hair *et al*., 2005).The values of the Pearson correlation coefficient ranges from 0 to 1, and the higher the value the greater is the correlation between the variables (Cook and Beckman, 2006).

Results and Discussion

Reliability of SERVQUAL Scale in Higher Education
The results shown in Table 2 indicate high internal consistency among items within each dimension, ranging from 0.74 (tangibles) to 0.96 (non-tangibles), all are above the recommended minimum score of 0.70 (Tavakol and Dennick, 2011). Non-tangibles and tangibles are two factors exhibited by the modified SERVQUAL scale after factor analysis. The findings support the internal cohesiveness of the SERVQUAL items forming each dimension, and are comparable to those reported by Parasuraman *et al*. (1991) that ranged from 0.80 (tangibles) to 0.93 (responsiveness).

Table 2: Reliability Coefficients

Dimension	Number of Items	Reliability Coefficients			
		University A	University B	Combined Sample	Average Values
Non-tangibles	29	0.94	0.96	0.93	0.94
Tangibles	16	0.91	0.83	0.74	0.83
Overall Scale	45	0.95	0.94	0.92	0.94

Note: Non-tangibles and tangibles are two factors exhibited by the modified SERVQUAL scale

At the overall scale level, the Cronbach's alpha reliability coefficients for the SERVQUAL scale ranged from 0.92 to 0.95 across all the three data sets (university A, B, and the combined sample) examined in this study. These coefficients are comparable to those obtained in other studies that ranged from 0.76 to 0.97 (Brochado and Marques, 2009; Vanpariya and Ganguly, 2010). Overall, the SERVQUAL scale and its dimensions have high internal consistency suggesting that, the items used to measure the constructs are appropriate. The results provide support for the use of the modified SERVQUAL items to examine perceived service quality in higher education.

Validity of SERVQUAL Scale in Higher Education
The presence of a positive and significant correlation coefficients (p= 0.01) between service quality (as measured by the SERVQUAL scale) and the overall service quality rating, across all the three data sets (university A, B, and the combined sample) is an indication of the convergent validity of the SERVQUAL scale (the average values was 0.52), as depicted in Table 3.

Table 3: Correlation Analysis Results

Measurement Scale	Standardized Correlation Coefficients			
	University A	University B	Combined Sample	Average Values
OSQ	0.23**	0.71**	0.61**	0.52**
Satisfaction	0.15**	0.70**	0.61**	0.49**
Recommend Intentions	0.10*	0.61**	0.56**	0.42**

Note: OSQ stands for Overall Service Quality.
   **. Correlation is significant at the 0.01 level (2-tailed)
   *. Correlation is significant at the 0.05 level (2-tailed)

On the other hand, findings have shown that, the correlations between perceived service quality and the overall service quality were consistently higher across all the three data sets, compared to the correlations between perceived service quality and the conceptually related but distinct variables: customer satisfaction and recommend intentions. For example, the average correlation coefficient between perceived service quality and the overall service quality was 0.52 and that between perceived service quality and other variables: customer satisfaction and recommend intentions were 0.49 and 0.42 respectively, as depicted in Table 3. The findings imply the

presence of discriminant validity in respect of the SERVQUAL scale. The results are quite in conformity with those established by other scholars (e.g., Brochado and Marques, 2009; Hoe, 2005). These researchers have reported that, the SERVQUAL measure has strong correlations with the overall service quality, customer satisfaction, and behavioural intentions.

Conclusion and Recommendations

Based on the study findings, it can be concluded that, the SERVQUAL scale, as modified for this study, is reliable and valid for measuring service quality in the higher education setting in Tanzania. This gives the implication that, the SERVQUAL scale is applicable across industries and cultures provided that, it is appropriately customized to capture the service attributes of the industry and context in which it is applied. This study, therefore, recommends that, appropriate modifications must be made to SERVQUAL before applying it to a new setting.

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APPENDICES

Appendix A: The SERVQUAL Scale, as Revised by Parasuraman *et al*. (1991)

Expectations Section

DIRECTIONS: Based on your experiences as a customer of telephone repair services, please think about the kind of Telephone Company that would deliver excellent quality of repair service. Think about the kind of Telephone Company with which you would be pleased to do business. Please show the extent to which you think such a telephone company would possess the feature described by each statement. If you feel a feature is *not at all essential* for excellent telephone companies such as the one you have in mind, circle the number "1". If you feel a feature is *absolutely essential* for excellent telephone companies, circle "7". If your feelings are less strong, circle one of the numbers in the middle. There are no right or wrong answers – all we are interested in is a number that truly reflects your feelings regarding telephone companies that would deliver excellent quality of service.

Note: Each of the statements was accompanied by a 7-point scale anchored at the ends by the labels "Strongly Disagree" (= 1) and "Strongly Agree" (= 7). Intermediate scale points were not labelled. Also, the headings (TANGIBLES, RELIABILITY, etc.), shown here to indicate which statements fall under each dimension, were not included in the actual questionnaire.

TANGIBLES
E1. Excellent telephone companies will have modern-looking equipment.
E2. The physical facilities at excellent telephone companies will be visually appealing.
E3. Employees of excellent telephone companies will be neat-appearing.
E4. Materials associated with the service (such as pamphlets or statements) will be visually appealing in an excellent telephone company.
RELIABILITY
E5. When excellent telephone companies promise to do something by a certain time, they will do so.
E6. When customers have a problem, excellent telephone companies will show sincere interest in solving it.
E7. Excellent telephone companies will perform the service right the first time.
E8. Excellent telephone companies will provide their services at the time they promise to do so.
E9. Excellent telephone companies will insist on error-free records.
RESPONSIVENESS
E10.Employees of excellent telephone companies will tell customers exactly when services will be performed.
E11.Employees of excellent telephone companies will give prompt service to customers.
E12.Employees of excellent telephone companies will always be willing to help customers.

E13.Employees of excellent telephone companies will never be too busy to respond to customer requests.

ASSURANCE

E14.The behaviour of employees of excellent telephone companies will instil confidence in customers.

E15. Customers of excellent telephone companies will feel safe in their transactions.

E16.Employees of excellent telephone companies will be consistently courteous with customers.

E17.Employees of excellent telephone companies will have the knowledge to answer customer questions.

EMPATHY

E18. Excellent telephone companies will give customers individual attention.

E19. Excellent telephone companies will have operating hours convenient to all their customers.

E20.Excellent telephone companies will have employees who give customers personal attention.

E21.Excellent telephone companies will have the customers' best interests at heart.

E22.The employees of excellent telephone companies will understand the specific needs of their customers.

Perceptions Section

DIRECTIONS: The following set of statements relate to your feelings about XYZ Telephone Company's repair service. For each statement, please show the extent to which you believe XYZ has the feature described by the statement. Once again, circling a "1" means that you strongly disagree that XYZ has the feature, and circling a "7" means that you strongly agree. You may circle any of the numbers in the middle that show how strong your feelings are. There are no right or wrong answers – all we are interested in is a number that best shows your perceptions about XYZ's repair services.

TANGIBLES

P1. XYZ has modern-looking equipment.

P2. XYZ's physical facilities are visually appealing.

P3. XYZ's employees are neat-appearing.

P4. Materials associated with the service (such as pamphlets or statements) are visually appealing at XYZ.

RELIABILITY

P5. When XYZ promises to do something by a certain time, it does so.

P6. When customers have a problem, XYZ shows a sincere interest in solving it.

P7. XYZ performs the service right the first time.

P8.XYZ provides its services at the time it promises to do so.

P9. XYZ insists on error-free records.

RESPONSIVENESS

P10.Employees of XYZ tell you exactly when services will be performed.

P11.Employees of XYZ give you prompt service.

P12.Employees of XYZ are always willing to help you.

P13.Employees of XYZ are never too busy to respond to your requests.

ASSURANCE

P14.The behaviour of employees of XYZ instils confidence in customers.

P15. You feel safe in your transactions with XYZ.

P16.Employees of XYZ are consistently courteous with you.

P17.Employees of XYZ have the knowledge to answer your questions.

EMPATHY

P18. XYZ gives you individual attention.

P19. XYZ has operating hours convenient to all its customers.

P20.XYZ has employees who give you personal attention.

P21.XYZ has your best interest at heart.

P22.Employees of XYZ understand your specific needs.

Appendix B: The SERVQUAL Scale, as Modified for Higher Education Setting Expectations Section

DIRECTIONS: Based on your experiences as a student of higher education institution (HEI), please think about an institute of higher education that would deliver excellent quality of services. Think about the kind of HEI which you would be pleased to join. Please show the extent to which you think such HEI would possess the feature described by each statement. If you feel a feature is *not at all essential* for excellent HEI such as the one you have in mind, circle the number "1". If you feel a feature is *absolutely essential* for excellent HEI, circle "7". If your feelings are less strong, circle one of the numbers in the middle. There are no right or wrong answers – all we are interested in is a number that truly reflects your feelings, regarding HEI that would deliver excellent quality of service.

Note: Each of the statements was accompanied by a 7-point scale anchored at the ends by the labels "Strongly Disagree" (= 1) and "Strongly Agree" (= 7). Intermediate scale points were not labelled. Also, the headings (TANGIBLES, RELIABILITY, etc.), shown here to indicate which statements fall under each dimension, were not included in the actual questionnaire.

TANGIBLES
E1. All physical facilities at excellent HEI will be visually appealing.
E2. Campuses at excellent HEI will be well located with easy access.
E3. Classrooms at excellent HEI will have up-to-date teaching support equipment
E4. Classrooms at excellent HEI will be comfortable with adequate space and furniture.
E5. Materials associated with services provided by excellent HEI (such as journals, handouts and other printed materials) will be visually appealing.
E6. Excellent HEI will have modern and adequate library facilities with enough space and furniture.
E7. Library at excellent HEI will have a wide range of books and periodicals in students' area of interest.
E8. Library at excellent HEI will have the latest literature in students' area of study.
E9. Excellent HEI will have modern and adequate computer facilities.
E10.Computer labs at excellent HEI will provide high speed internet access.
E11.Lecturers and administrative staffs of excellent HEI will always be well dressed and appear neat.
E12.Excellent HEI will have sufficient residential accommodation and of good standard.
E13.Rooms in the student residential accommodation at excellent HEI will be comfortable and of a good standard.
E14.Excellent HEI will have modern and adequate sports facilities.
E15.Excellent HEI will have modern and adequate dining facilities.
E16.Excellent HEI will have modern and adequate health care facilities.

RELIABILITY

E17.When excellent HEI promise to do something by a certain time, they will do so.

E18.When students have a problem, excellent HEI will show sincere interest in solving it.

E19.Lecturers and administrative staffs of excellent HEI will perform the service right the first time.

E20.Excellent HEI will provide examination results in time.

E21.Excellent HEI will keep students' records accurate and confidential.

E22.Lecturers of excellent HEI will be fair in assessing students' work.

RESPONSIVENESS

E23.Lecturers and administrative staffs of excellent HEI will tell students exactly when service will be performed.

E24.Administrative staffs of excellent HEI will never be too busy to respond to students' requests.

E25.Lecturers of excellent HEI will be adequately accessible and available to students for guidance and advice.

E26.Excellent HEI will give students opportunity to choose subjects in accordance with their interests.

E27.Lecturers and administrative staffs of excellent HEI will always be willing to help students.

E28.Excellent HEI will have efficient system to deal with students' complaints about inadequacy of services.

ASSURANCE

E29.The behaviour of lecturers and administrative staffs of excellent HEI will instil confidence in students.

E30.Students of excellent HEI will feel safe, secure and comfortable in their studies.

E31.Lecturers and administrative staffs of excellent HEI will always be friendly and polite to students.

E32.Lecturers of excellent HEI will possess the required skills and knowledge relating to provision of their courses.

E33.Administrative staffs of excellent HEI will have the knowledge to answer students' questions on administrative matters (such as registration, loans, scholarships, etc.).

E34.Excellent HEI will have high image and prestige within their respective countries.

E35.Excellent HEI will have high image and prestige internationally.

E36.Degree from excellent HEI will be well recognized internationally.

E37.Academic courses and training at excellent HEI will be relevant to students' future job and career prospects.

E38.Graduates from excellent HEI will achieve considerable success in getting better paying jobs or promotion.

E39.Curriculum at excellent HEI will keep up with the latest scientific achievements.

EMPATHY

E40.Lecturers and administrative staffs of excellent HEI will give students individual attention.

E41.Lecturers of excellent HEI will be concerned about the academic progress of their students.

E42.Facilities in excellent HEI (such as library, offices for support services) will have operating hours convenient to all students.

E43.Lecturers and administrative staffs of excellent HEI will give students personal attention.

E44.Excellent HEI will offer academic courses and content appropriate to students' needs and aspirations.

E45.Lecturers and administrative staffs of excellent HEI will understand the specific needs of their students.

Perceptions Section

DIRECTIONS: The following set of statements relate to your feelings about XYZ Institute of higher education's service. For each statement, please show the extent to which you believe XYZ has the feature described by the statement. Once again, circling a "1" means that you strongly disagree that XYZ has the feature, and circling a "7" means that you strongly agree. You may circle any of the numbers in the middle that show how strong your feelings are. There are no right or wrong answers – all we are interested in is a number that best shows your perceptions about XYZ's services.

TANGIBLES
P1. All physical facilities at XYZ are visually appealing.
P2. Campuses at XYZ are well located with easy access.
P3. Classrooms at XYZ have up-to-date teaching support equipment.
P4. Classrooms at XYZ are comfortable with adequate space and furniture.
P5. Materials associated with service (such as journals, handouts and other printed materials) are visually appealing at XYZ.
P6. XYZ has modern and adequate library facilities with enough space and furniture.
P7. Library at XYZ has a wide range of books and periodicals in students' area of interest.
P8. Library at XYZ has the latest literature in students' area of study.
P9. XYZ has modern and adequate computer facilities.
P10.Computer labs at XYZ provide high speed internet access.
P11.Lecturers and administrative staffs of XYZ are always well dressed and appear neat.
P12.XYZ has sufficient residential accommodation and of good standard.
P13.Rooms in the student residential accommodations at XYZ are comfortable and of a good standard.
P14.XYZ has modern and adequate sports facilities.
P15.XYZ has modern and adequate dining facilities.
P16.XYZ has modern and adequate health care facilities.

RELIABILITY
P17.When XYZ promises to do something by a certain time, it does so.
P18.When a student has a problem, XYZ shows a sincere interest in solving it.
P19.Lecturers and administrative staffs of XYZ perform the service right the first time.
P20.XYZ provides examination results in time.
P21.XYZ keeps students' records accurate and confidential.
P22.Lecturers of XYZ are fair in assessing students' work.

RESPONSIVENESS
P23.Lecturers and administrative staffs of XYZ tell students exactly when service will be performed.
P24.Administrative staffs of XYZ are never too busy to respond to students' requests.

P25.Lecturers of XYZ are adequately accessible and available to students for guidance and advice.

P26.XYZ gives students opportunity to choose subjects in accordance with their interests.

P27.Lecturers and administrative staffs of XYZ are always willing to help students.

P28.XYZ has efficient system to deal with students' complaints about inadequacy of service.

ASSURANCE

P29.The behaviour of lecturers and administrative staffs of XYZ instils confidence in its students.

P30.Students of XYZ feel safe, secure and comfortable in their studies.

P31.Lecturers and administrative staffs of XYZ are always friendly and polite to students.

P32.Lecturers of XYZ possess the required skills and knowledge relating to provision of their courses.

P33.Administrative staffs of XYZ have the knowledge to answer students' questions on administrative matters (such as registration, loans, scholarships, etc.).

P34.XYZ has a high image and prestige within its host country.

P35.XYZ has a high image and prestige internationally.

P36.Degree from XYZ is well recognized internationally.

P37.Academic courses and training at XYZ are relevant to students' future job and career prospects.

P38.Graduates from XYZ achieve considerable success in getting better paying jobs or promotion.

P39.Curriculum at XYZ keeps up with the latest scientific achievements.

EMPATHY

P40.Lecturers and administrative staffs of XYZ give you individual attention.

P41.Lecturers of XYZ are concerned about academic progress of their students.

P42.Facilities at XYZ (such as library, offices for support services) have operating hours convenient to all students.

P43.Lecturers and administrative staffs of XYZ give you personal attention.

P44.XYZ offer academic courses and content appropriate to students' needs and aspirations.

P45.Lecturers and administrative staffs of XYZ understand the specific needs of their students.