# The relationship between service quality and student satisfaction (case study: Tidewater University of applied sciences in Bandar Anzali)

Seyyed Mahmoud Shabgoo Monsef *

*Department of Business Management, Rasht Branch, Islamic Azad University, Rasht, Iran*

A B S T R A C T

Quality of education and research is one of the concerns that universities always strive to achieve it. Continuous improvement of quality of higher education requires measuring the quality of educational services. The purpose of this study is to evaluate and compare the level of student satisfaction with the quality of services provided. The quality of service variable includes five variables on students' satisfactions. These variables are physical quality, accountability, staff commitment, credit, and sympathy. This study is an applied research and the method of data collection is descriptive. The population of the research includes all students at Tidewater University of applied sciences in Bandar Anzali. In this study 218 samples were collected from students on how to provide university services. Validity and reliability of questionnaire was approved by using Cronbach's alpha coefficient. To analyze the conceptual model and hypotheses of the study, structural equation modeling is done by the use of PLS software. The results show that there is a positive and significant relationship between quality of service variable and customer satisfaction.

## 1. Introduction

With a sharp increase in commercial competition and powerful trends of globalization, the customer is a consumer is the only one element of the multifaceted role of consumer. Roles such as consumer manufacturer help, creating value help, developing knowledge help, and competition these roles represent a very important opportunity for the customer (Ndubisi et al., 2007). Success in the competitive world belongs to the institutions realizing that customer is the biggest capital (Mei, 2012). Customer satisfaction of the services provided is a key element in the success and excellence of organizations and an important factor for profitability and customer loyalty to the organization (Manuel, 2008).

Customer satisfaction is also an important factor at universities and higher education institutions. They are faced with enormous challenges in the third millennium; Globalization, internationalization, and also revolution in information technology, forced universities to participate in the competitive markets of education and research. To preserve and promote the special place that was gained during the past, universities are forced to match the changing environment quickly.

Educational institutions which want to gain a competitive advantage need effective and creative ways to build and maintain relationships (Hasan et al., 2008). Sustainable development of higher education system which is a dynamic system requires harmonious and balanced growth in both quantitative and qualitative dimensions. According to expert service quality is considered now more than ever as a strategic, effective, and pervasive issue in management organizations agenda (Douglas and Firdaus, 2011).

Service quality includes service delivery items or beyond customer expectations. Some experts also define service quality as the difference between customer expectations of service and understanding of the received service (Munusamy et al, 2010). Parasuraman et al. (1998) believes that perceived service quality is defined as an international judge with an attitude of service excellence. The judge or the superiority resulting from the difference between customer expectations and perceptions about the services received (Kranias and Bourlessa, 2014). Given that students are customers of higher education intuitions and universities, so in the new competitive environment students are faced with so many options to choose, it is necessary to study factors that cause the excellence and attractiveness of educational institutions and also factors that attract students to university.

* Corresponding Author.
Email Address: monsef.mahmoud@yahoo.com

Educational institutions which want to gain a competitive advantage need effective and creative ways to build and maintain relationship (Hasan et al., 2008). Accordingly, the problem and the change that planners and practitioners are faced in higher education system are to make sure if the quality of services provided by them satisfy the students or not. Thus, the importance of the issue made the study measure services and studies the relationship between services quality and student satisfaction at Tidewater University in Bandar Anzali. The theoretical framework includes physical quality, accountability, staff commitment, credit, and sympathy (Fig. 1).
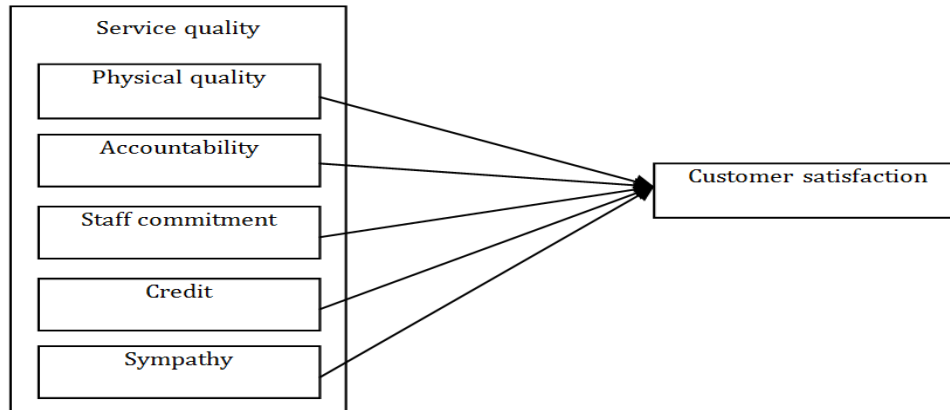


**Fig. 1:** conceptual model of Research

## 2. Literature survey

This section deals researches which were done inside the country or abroad and all of them are related to the project.

1. Ebrahimi et al. (2012) investigated a research titled '' Comparing the quality of educational services with use of SERVQUAL model at Kurdistan University and at Kurdistan Payamnoor University''. The sample is consisted of all students studying at Kurdistan University and the main centers of Payamnoor universities in Kurdistan. Both samples are separated. 380 samples were selected from each of the populations by the use of statistical sampling. The results of the study showed that there is a significant difference between quality of educational services and customer satisfaction at Kurdistan Payamnoor University.

2. Beikzad et al. (2011) investigated a research titled ''E-service quality relationship with student's electronic satisfaction at Bonab Azad University''. The results showed that there is a significant relationship between E-service quality, its dimensions, and students' electronic satisfaction at Bonab Azad University. In this study dimension of service quality from students perspective and reliability are the highest priorities. Efficiency dimensions, personal privacy, accountability, supply order, compensation and back were in next order.

3. Soufizade et al. (2008) studied and investigated student's satisfaction with the quality of educational services (based on SERVQUAL model) at physical education of Tehran and Teacher Training Universities. This study investigated 499 students. Data analysis suggests that the average gap between students' expectations and perceptions of service quality at both universities is significant for five variables. It is significant for four variables at Tehran University (Tangibility, Confidence, Accountability, and Reliability) were higher than the average opinion. At Teacher Training University in a variable (reliability) was higher than the average opinion.

4. Hasan et al. (2008) in a research titled ''Service quality and students satisfaction, Case Study: Private higher education institution'' investigated a sample of 200 undergraduate students at universities of Malaysia. Results showed that there is a positive significant relationship between dimensions of tangibility, reliability, assurance, accountability, and sympathy with students' satisfaction. So that empathy variable is the most related to students satisfaction.

5. Dinh and Pickler (2013) in a study titled '' Investigating the quality and customer satisfaction in the banking industry of Vietnam'' investigated relations between the dimensions of service quality (tangibility, reliability, accountability, assurance and sympathy) and customer satisfaction in banking industry of Vietnam. In this regard tangibility and reliability can help bank leaders with assessing and improving the quality of banking services in the field of financial liberalization and globalization.

6. Saghaei and Nathan (2014) in a study titled'' Dimensions of service quality and satisfaction of bank customers in Egypt'' investigated the quality service in Egyptian banks. The result of data analysis showed that reliability, accountability, sympathy and assurance are factors affecting the users' evaluation of the quality of banking services.

## 3. Hypotheses of the study

### 3.1. Main hypothesis

There is a positive significant relationship between the quality of services and students satisfaction at Middle East Tidewater University of applied sciences in Bandar Anzali.

## 3.2. Hypotheses

There is a positive significant relationship between the physical dimensions and students satisfaction at Middle East Tidewater University of applied sciences in Bandar Anzali.

There is a positive significant relationship between staff commitment (professors, staff management) and students' satisfaction at Middle East Tidewater University of applied sciences in Bandar Anzali.

There is a positive significant relationship between staff credit and students satisfaction at Middle East Tidewater University of applied sciences in Bandar Anzali.

There is a positive significant relationship between personnel accountability and students satisfaction at Middle East Tidewater University of applied sciences in Bandar Anzali.

There is a positive significant relationship between personnel sympathy and students satisfaction at Middle East Tidewater University of applied sciences in Bandar Anzali.

## 4. Methodology

The present study is an applied study and the method is descriptive. The implementation of the present study can be used to identify the existing conditions and assist in the decision making process. Descriptive research involves collecting data to test the hypothesis or to answer questions about the current state of the subject.

## 4.1. Population and sample

The population of this study includes students at Middle East Tidewater University of applied sciences in Bandar Anzali due to the limited population size non- probability sampling and random sampling was used. To determine the sample size Cochran formula is used as follows:

$$n = \frac{NZ\left(\frac{a}{2}\right)^2 \cdot S2}{(N-1)\varepsilon^2 + Z\left(\frac{a}{2}\right)^2)S2}$$

$$= \frac{500.(1.96)^2 \cdot (0.5)2}{(499)(0.05)^2 + (1.96)^2)(0.5)2}$$

$$= 217.5 \approx 218$$

In the formula: N= size of population and n= size of sample, Z=Standard variable amount per unit corresponding to the level of confidence, P= estimate variable as visible in the community, q=Estimate variable as invisible in the community, e= the permissible error in measurement of variable observation in society, and S=standard deviation. The minimum sample size is 218. The level of confidence is 95%.

## 4.2. Data collection

In this study, a questionnaire was used to collect information about variables and hypotheses. The questionnaire of the survey is based on Abu Hassan's study in 2008. The questionnaire contains 52 questions. Questions have been divided in six parts (Physical quality, credit, staff commitment, accountability, sympathy, and customer satisfaction).

## 4.3. Validity and reliability

In the present study to confirm the validity of questioner both content and pre-test method was used. So teachers and experts in knowledge management were asked first and after determining the validity and enforcement of numerous comments and revisions, the content validity of the questionnaire, was confirmed by experts. In this study, to determine the reliability of the questionnaire, Cronbach's alpha coefficient was used and PLS software was used to calculate Cronbach's alpha coefficient. At first 30 pre-test questionnaires were distributed among students and Cronbach's alpha was measured. Cronbach's alpha obtained from all study variables was estimated to be over 0.80 so the initial reliability of the study was approved. Cronbach's alpha variables are as Table 1. Cronbach's alpha coefficient showed high reliability of the questionnaire survey.

**Table 1:** Cronbach's alpha coefficient

| Variables | Alpha Coefficient |
|---|---|
| Service quality | 0.967 |
| Physical quality | 0.977 |
| Credit | 0.920 |
| Staff commitment | 0.869 |
| Accountability | 0.869 |
| Sympathy | 0.843 |
| Customer satisfaction | 0.891 |

## 4.4. Data Analysis

In this study, both descriptive and inferential methods were used to analyze the data obtained at descriptive level. Statistical characteristics such as mean, standard deviation and variance were used to analyze and describe the characteristics of population. To test the hypotheses with regard to the changing characteristics of research and method, the most appropriate method for the analysis of the conceptual model and hypotheses is structural equation modeling using the PLS software.

## 4.5. Characteristic description of the population of study

The data analysis of the responses to the questionnaire indicate that of 218 selected samples there were 93 females (42.7%) and 125 males (57.3%). 143 people were between ages of 20 to 30 (65.6%), 53 people were between 31 to 40 (24.3%), 20 people were between ages of 41 to 50 (9.2%) and

2 people were over 50 (0.9%). In terms of education, 99 people (45.4%) have got Associate Degree and 119 people (54.6%) have got Bachelor Degree.

## 4.6. Description of variables

Before entering the stage of data analysis it is essential to describe variables.

Description of dependent variable: The lowest proportion of customer satisfaction is 1 and the highest customer satisfaction is 5, the mean is 2.88, standard deviation is 0.815, and the variance is 0.664.

### 4.6.1. Description of independent variable

Service quality variable: The lowest proportion is 1.13 and the highest proportion is 5, the mean is 3.10, the standard deviation is 0.579, and the variance is 0.335.

Physical quality variable: the lowest proportion is 1, the highest proportion is 5, the mean is 3.06 and the standard deviation is 0.655 and the variance is 0.429.

Accountability variable: the lowest proportion is 1 and the highest proportion is 5, the mean is 3.22, the standard deviation is 0.735 and the variance is 0.540.

Credit variable: the lowest proportion is 1 and the highest proportion is 5, the mean is 3.09 and the

standard deviation is 0.708 and the variance is 0.501.

Staff commitment variable: the lowest proportion is 1 and the highest proportion is 5, the mean is 3.06, the standard deviation is 0.685 and the variance is 0.469.

Sympathy variable: the lowest proportion is 1, the highest proportion is 5, the mean is 2.89, the standard deviation is 0.677 and the variance is 0.459.

## 4.7. Normal distribution of variables

In order to determine the normality of the variables in the sample Kolmogorow-Smirnov (K-S) was done. The results show that the significant level of all variables is 0.000, so none of the variables followed a normal distribution (significant level is greater than 0.05). Thus, according to the results of tests appropriate tests were used for the various stages of analysis.

## 4.8. Inferential statistics

### 4.8.1. The correlation between the variables

As was observed, there is a significant correlation between all the variables in the model. To determine the effect of each variable on the other variables path analysis method (structural equation modeling) was used (Table 2).

**Table 2:** Spearman correlation test

| Customer satisfaction | | |
|---|---|---|
| 0.430 | Spearman correlation coefficient | Physical quality |
| 0.000 | Level of significance | |
| 0.711 | Spearman correlation coefficient | accountability |
| 0.000 | Level of significance | |
| 0.639 | Spearman correlation coefficient | Staff commitment |
| 0.000 | Level of significance | |
| 0.641 | Spearman correlation coefficient | credit |
| 0.000 | Level of significance | |
| 0.532 | Spearman correlation coefficient | sympathy |
| 0.000 | Level of significance | |

## 4.9. The model and hypothesis testing

To respond to hypotheses, conceptual model of study was tested by PLS software. The results are shown in Figs. 2 and 3.

In the Fig. 2 the proportion of standard coefficient of direct routes was shown. ((B) standard beta) and amounts of $R^2$ (the coefficient of determination) using the standard mode can be used to study the correlation between latent variables and to measure the intensity of the relationship between latent variables and it will be possible to comment on the impact of variables on each other.

## 4.10. Research model in significant numbers

The numbers in this Fig. measures the relations between the latent variables in order to be

significant. If in a relationship the t-statistic is more than 1.96, it will be significant at 5% and if t-statistic is more than 2.58, it will be significant at 0.01 (Azar et al., 2012).

## 4.11. The overall fit of the model

As seen in Fig. 2 the proportion of $R^2$ for customer satisfaction variable is 0.818. This means that about 82% of the variance of customer satisfaction variable is determined by the study variables (Table 3).

The least partial squares of overall fit of the model are determined by calculating the amount of GOF. In respect of three amounts of 0.01, 0.25 and 0.36 which are in order weak, average and strong for GOF and the result of 0.684 for GOF, the overall fit of the model is confirmed.
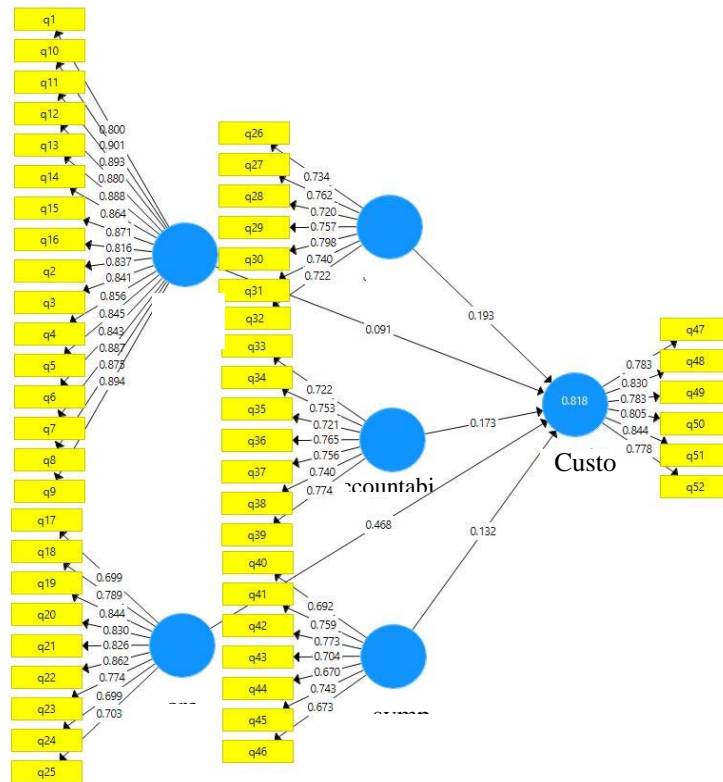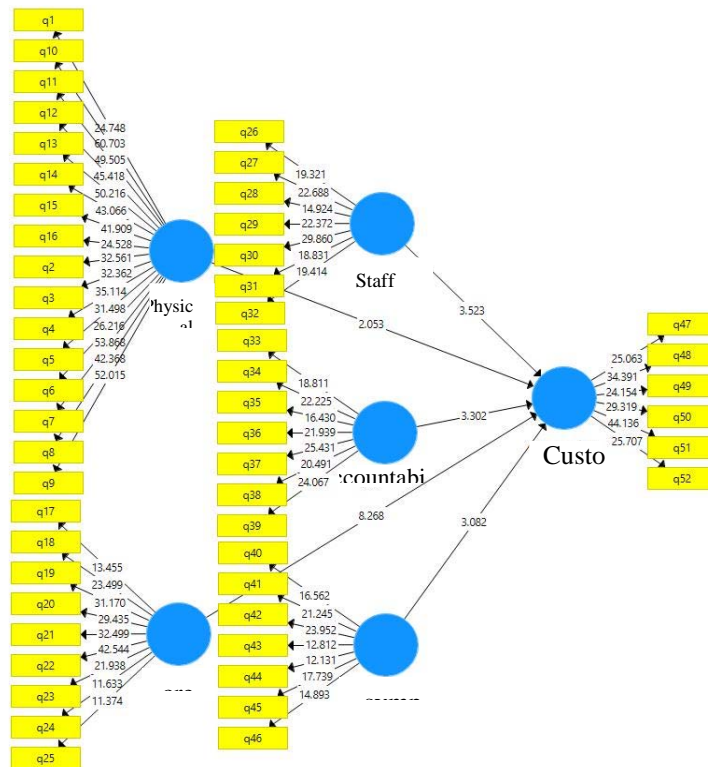
**Fig. 2:** The main research model in standard mode



**Fig. 3:** Research model in significant numbers

## 5. Result

The first hypothesis results: the amount of t-statistic is nearly 2.053 which is bigger than 1.96 so with 95% confidence, there is a significant relationship between physical equality and students satisfaction at Middle East Tidewater University of applied sciences in Bandar Anzali. The first hypothesis is accepted. The standard path coefficient is 0.091 which shows a positive effect.

The second hypothesis test results: the amount of t-statistic is 3.523 which are bigger than 1.96 and 2.58. So with 95% confidence there is a significant relationship between staff commitment (professors,

staff, and management) and students' satisfaction at Middle East Tidewater University of applied sciences in Bandar Anzali. The second hypothesis is accepted.

The standard path coefficient is 0.193 which shows a positive effect.

**Table 3:** The overall fit of the model

| variable | The coefficient of $R^2$ determination | Shared values | GOF |
|---|---|---|---|
| Physical quality | - | 0.522 | |
| accountability | - | 0.400 | |
| Staff commitment | - | 0.496 | $Gof=\sqrt{Communalities \times R^2}$ |
| credit | - | 0.334 | |
| sympathy | - | 0.396 | GOF= 0.684 |
| Customer satisfaction | 0.818 | 0.714 | |
| mean | 0.818 | 0.477 | |

The third hypothesis test results: the amount of t-statistic is 8.263 which are bigger than 1.96 and 2.58. So with 99% confidence there is a significant relationship between credit of personnel and students' satisfaction at Middle East Tidewater University of applied sciences in Bandar Anzali. The third hypothesis is accepted. The standard path coefficient is 0.468 which shows a positive effect.

The fourth hypothesis test results: the amount of t-statistic is 3.302 which are bigger than 1.96 and 2.58. So with 99% confidence there is a significant relationship between accountability and students' satisfaction at Middle East Tidewater University of applied sciences in Bandar Anzali. The fourth

hypothesis is accepted. The standard path coefficient is 0.173 which shows a positive effect.

The fifth hypothesis test results: the amount of t-statistic is 3.082 which are bigger than 1.96 and 2.58. So with 99% confidence there is a significant relationship between personnel sympathy and students' satisfaction at Middle East Tidewater University of applied sciences in Bandar Anzali. The fifth hypothesis is accepted. The standard path coefficient is 0.115 which shows a positive effect.

The main hypothesis test results: to test the main hypothesis the relationship between service quality and customer satisfaction is tested by SPSS software and the results are shown below (Table 4).

**Table 4:** Test of main hypothesis

| Variables | sample | Level of significance | Level of significance | Result |
|---|---|---|---|---|
| Service quality and students satisfaction | 218 | 71.2% | 0.000 | Hypothesis is accepted |

For non-normal distribution of both variables in the sample, Spearman's correlation coefficient was used to test the hypothesis. The level of significant is less than 0.01 so with 99% confidence the main hypothesis is accepted and the relationship is significant. The correlation between service quality variable and student satisfaction variable is 71.2%.

This shows a direct relationship between the above mentioned variables. The coefficient of determination between two variables is 0.84% which shows independent variable can anticipate dependent variable at a rate of 84%

## 6. Suggestions

With proper design and perfect lighting, electronic equipment and update computers, students will like to enter this university more. Personnel register students without error and have a good filing system. Professors raise teaching skills and tend to solve students problems. Professors and staff have friendly behavior and rules and regulations have to be complete. There should be appropriate security and communication skill. University should design and implement a system to anticipate and respond to needs of students. Professors should be sympathetic and supportive of their students and act in the interest of students.

Professors should treat students without discrimination and fairly.

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