

## Assessment of Quality of Provided Services using the SERVQUAL Model at University of Medical Sciences and Health Services of Bushehr

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**ABSTRACT:** The importance of education is as high that there is no cast of shadow in the importance of evaluation of educational performance. If universities and other educational establishments are evaluated as a comprehensive structure, then it guarantees the growth and successfulness of them. In this way, evaluation of service quality can be very useful. Hence, the present study was aimed to evaluate the quality of services provided by developing SERVQUAL model in terms of student and culture department of university of medical science and health services of Bushehr. In this regard, the statistical population consisted of students asked to receive services from student and culture department of university of medical science and health services of Bushehr, which 384 individuals were chosen as a sample using Cochran formula. Data analysis was carried out using one-sample t-test and Friedman in SPSS software. Moreover, checking the fitness of the model in LISREL software demonstrated that the quality of service was proper in the case study in all aspects except tangibles (tangible and atmosphere).

**Keywords:** Educational Services, Service Quality, SERVQUAL Model, Educational

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### INTRODUCTION

According to the increasing role of service organizations in different fields of economic and the importance of quality in the competitive fields, quality of services has been recognized as a major factor of organization competitiveness advantages and customer loyalty (Chen and Hu, 2013). For this purpose, each service organization should firstly identify its customers' needs and demands and check their satisfaction with the services, and then, do its best to improve them in order to assess and improve quality of services within the organization. If the evaluation of service quality has been carried out from the various aspects of the organization and as a comprehensive system, then growth and successfulness would be guaranteed.

Therefore, all organizations have to perform different actions in order to assess and monitor the status of their service. Universities, as organizations, are not exception to the rule and should be evaluated from different aspects of service providing. These assessments have improved in recent years because of universities competitiveness and increasing public awareness. Hence, the present study is going to perform an effective measurement with scientific approaches due to a better understanding of the service quality, so with awareness of the current situation in term of service quality and its effects on client satisfaction, a major pace can be taken through future planning and improvement of situation and the quality of service providing in medical sciences university of Bushehr.

### Literature of Research

Nowadays, because of intense pressures of competence, one of the most important strategies of service organizations specially training institutions,

that through it they can achieve stable competence advantages, is to improve their service quality (Lagrosen and Lagrosen, 2007). All education institutions such as universities are under pressure to provide proper answers to the social needs. Universities situation in terms of quality is so complicated. Different studies, proven that universities can provide best services to the society, if they continuously be concerned about improvement in their services quality (Bennet, 2001). Improvement of service quality in organizations leads to satisfaction and loyalty of customers (Gounaris et al., 2010; Prentice, 2013), increase market share and finally more profit for organization (Bell and Eisingerich, 2007). In order to achieve the objectives of service quality, it is enough to properly answer or surpass the customer expectations in term of service quality. It is the responsibility of the service provider to review and identify the customers' expectations in term of service quality (Fowdar, 2005).

Totally, we can say that quality of services is to meet or create customer expectations (Zhao et al., 2012). In other definition, from Horovitz point of view, quality of services is defined based on its three distinguish features: 1-Quality of service consumes at the same time that is generated, so the consumer finds all infections in quality of service. 2-Are a set of privileges, but often is acquiring experience 3-Quality of relations between service providers and consumers as one of the essential aspects of service quality (Perez et al., 2007).

SERVQUAL model is one of the models that evaluate quality of services in service companies (Schroder et al., 2007). This model, firstly introduced with providing the concept of quality gap of services in the framework of "gap analysis" by Parasuraman et al. (1998). Gap analysis model shows interaction and the

link between organizational activities and satisfactory level of quality in provided services from customer point of view. Among these links, gapes will be studied. This means that the existence and enlarging these gapes prevent to achieve a satisfactory level of service quality. The conceptual model of gap analysis and the most important of them have shown in figure one (Parasuraman et al., 1988).

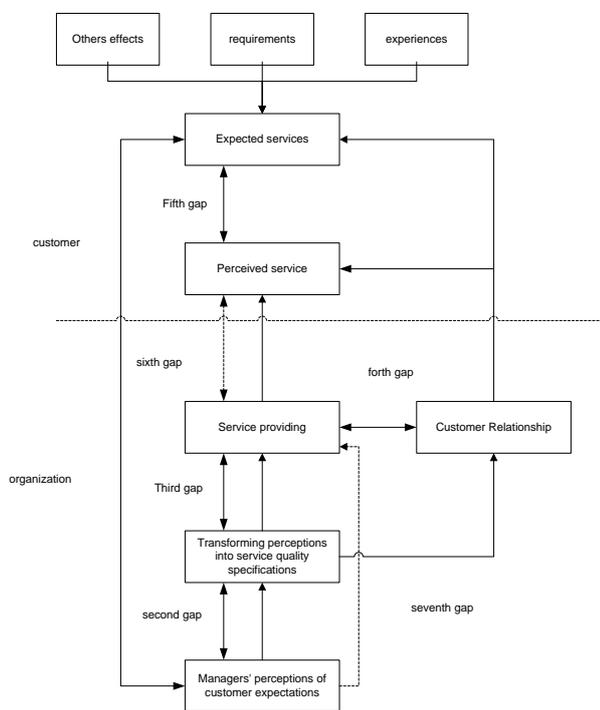


Figure 1. Seven gaps of SERVQUAL model

Parasuraman et al. (1988) defined the service quality as the difference between perceptions and expectations of their customers, which the gap number 5 in gap analysis model shows the fact. Therefore, to assess the quality of services, we have to measure customer expectations and perceptions. It helps the customers to compare services provided by different organizations. They also defined five dimensions for SERVQUAL model, (tangibles, reliability, responsiveness, assurance and empathy) that, each of these dimensions also have several subdirectories (Table 1).

Moreover, in relation to the dimensions of service quality, Sureshchandar et al. (2002) also stated that, since the concept of social responsibility, which is almost completely ignored in the literature on quality management, is important, this dimension along the five dimensions of SERVQUAL model should be considered. From the perspective of Fleming (2002), social accountability refers to the collection of duties and obligations that the organization have to do in order to preserve, protect and assist the community in

which it operates (Vahdati et al., 2014). In Table 1, the six dimensions along with its subdirectories shown:

Table 1. Dimensions and subcategory of SERVQUAL model

Dimensions	Subdirectories
<b>Tangibles</b>	Modern equipment, striking physical features; staff appear clean and tidy, regular documents (such as bills, edged, invoices ...)
<b>Reliability</b>	Do the promised work or service up to given time, showing sincere interest in solving customer problems, reform the service in the first time, provide the service at a time when have been promised, no incorrect reporting
<b>Responsiveness</b>	Employees say exactly they are providing what services to customers, staff will provide immediate service to the customer, the staff is always willing to help customers, employees are prepared to answer questions of customers in any situation
<b>Assurance</b>	staff treatment Gradually give customers confidence, clients feel secure in their interactions with service providers, employees always treat our customers with courteous, knowledgeable staff to answer customer questions.
<b>Empathy</b>	Individual attention to customers; suitable working hours for all customers, employees show customers personalized attention, demanding the best benefits for customers, employees understand unique needs of customers.
<b>Social Responsibility</b>	His appreciation of the importance of the customer, the same approach with everyone (from the belief that all individuals, small or large, should be treated the same way), there is a sense of responsibility towards the customers and the community among employees

Because the importance of measuring the quality of services provided by universities and training institutions, several studies have presented the results of application of models to evaluate the quality of services in the field of education. These studies can be divided in two experimental groups, which in them, available models such as SERVQUAL and the articles that developed new models specifically for educational services, were used, that we will point to some, in following. Jiewanto et al. (2012) concluded in their study that service quality based on SERVQUAL model, has a positive impact on student satisfaction and their academic perceptions. Sultan and Wong (2012), in their study reported that information and past information (marketing communications) are known as background of service quality and have a significant positive correlation with each other. Aldridge and Rowley (1998), in order to measure the satisfaction of students in H-Hill College in England based on SERVQUAL methodology, has designed a tool to assess the quality of services. Hanushek et al (2006) have done a research in term of

the quality of schools from student's point of view and presented a model for measurement. Alves and Vieira (2006), in their study entitled, the SERVQUAL model for evaluating service quality in higher education institutions, showed that each of the five components is equally important for students. For example, the most important aspect of their research is ensuring the training and the least important component is tangible issues. According to Canic and McCarthy (1998), in order to improve the quality of educational services at Indiana University based on surveys of students, a total of 24 improvement projects defined and for implementation of projects a 10-step model has been used as a healing cycle. Galloway (1998), in order to prioritize the needs of students from other countries, studying at Australian universities, designed a tool to measure student satisfaction and concluded that significant differences exist between the expectations of Australians and foreigners.

Thus, with respect to the issues raised above, assumptions and theoretical framework for the present study are:

1. There are significant differences between customer expectations and features related to empathy and their perceptions of the empathy features of service quality of cultural and student department of Bushehr University of medical sciences.

2. There are significant differences between customer expectations and features related to social responsibility and their perceptions of the social responsibility features of service quality of cultural and student department of Bushehr University of medical sciences.

3. There are significant differences between customer expectations and features related to reliability and their perceptions of the reliability features of service quality of cultural and student department of Bushehr University of medical sciences.

4. There are significant differences between customer expectations and features related to responsiveness and their perceptions of the responsiveness features of service quality of cultural and student department of Bushehr University of medical sciences.

5. There are significant differences between customer expectations and features related to assurance and their perceptions of the assurance features of service quality of cultural and student department of Bushehr University of medical sciences.

6. There are significant differences between customer expectations and features related to tangibles and their perceptions of the tangibles features of service quality of cultural and student department of Bushehr University of medical sciences.

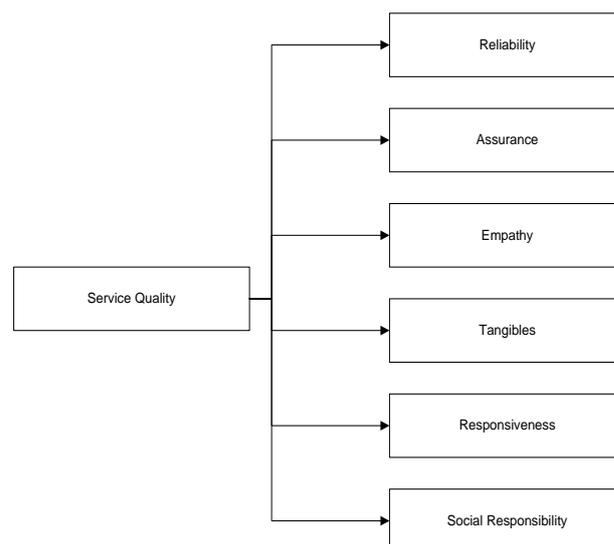


Figure 2. Conceptual framework of the research

## MATERIAL AND METHODS

Present study, in term of goal is implicational; in term of the method of obtaining data, is descriptive survey and in term of relationships between variables is causal. The study sample consisted of students who are asking to receive services of student and culture department of medical science and health services university of Bushehr as for graduation department, dormitory, etc.

According to the characteristics of the population and its distribution, in order to obtain information, researcher went to the department of student and culture of Bushehr University of medical sciences and among the students in a certain period of time (about two weeks) who referred there, randomly selected some. In this regard, in implementation phase, students participated in the research that use or apply for service from the department of student and culture and were available. Since the exact amount of population was unknown, sample size using Cochran's formula (in the case of unknown size) defined 384 individuals. However, to ensure total of 400 questionnaires were prepared and randomly distributed among the people. After collecting and removing incomplete questionnaires, total of 382 questionnaires were used for analysis. In order to data gathering, a developed model of SERVQUAL was used and the questionnaire was designed accordingly. The questionnaire contained 25 questions and designed to measure parameters such as reliability, responsiveness, assurance, empathy, tangibles and social responsibility that in table 1 the number of questions relating to each dimension is existed.

Validity of measurement tool in this study, in both content and face validity was examined and using the opinions of managers and experts of

student and culture department of medical science university of Bushehr and university teachers, reforms in some questions took place. Therefore in concept validity, this will ensure that scale is consists of a series of sufficient stuff and sample is to use concept. In addition, a face validity survey makes sure that the questions, measure the appearance of concept and they are useful in measuring.

**Table 2.** The questionnaires' dimensions and number of questions on each dimension

Dimensions of Service Quality	Operational definition	Questions
<b>Reliability</b>	Commitment to accurate, on time and reliable service delivery	Question 1-5
<b>Responsiveness</b>	Willingness to serve and provide services to clients in the fastest time	Question 6-9
<b>Assurance</b>	Having the skills and knowledge needed to provide a service.	Question 10-12
<b>Empathy</b>	Understand and pay particular attention to client needs.	Question 13-16
<b>Tangibles</b>	Appearance of organization, appearance of staff and communications equipment	Question 17-21
<b>Social Responsibility</b>	Ethics and sense of responsibility towards clients and the community	Question 22-25

To calculate reliability of questionnaires, Cronbach's alpha was used. The Cronbach's alpha for each dimension of service quality is obtained as

follows: reliability= 0.77, accountability= 0.76, assurance= 0.73, empathy= 0.80, tangible= 0.83 and social responsibility= 0.82. All coefficients are higher than 0.7, indicating that the measurement tools which used, has acceptable reliability (Moss et al., 1998). Therefore, the survey questionnaire has acceptable reliability.

After collection of the questionnaires firstly using SPSS 20 software, one-sample t-test was used to test the hypothesis about a population mean. This test helped to examine, 6 hypothesis of study. In management and organization studies, to investigate the importance of having or not having the dimensions of research and the status of organization in each of the dimensions this test is used. In present study one-sample t-test was also used in order to determine if the mean of data related to the main dimension of quality services is equal to hypothetical population mean (3) or not.

In other words, by performing this test the importance of these aspects and the status of them have been studied. In this regard, zero and one statistical assumption provided to examine the importance of dimensions or status of organization. Null hypothesis suggests that the importance of the organizational status in the case of dimensions is intermediate (3). And first assumption approves it. Results of one-sample t-test for service quality dimensions have shown in Table 3.

**Table 3.** One-sample t-test results, quality of service

Dimensions	t value	significance level	The error rate	test result	The difference between $\mu-3$ at the 95% confidence interval	
					Upper limit	Lower limit
<b>Reliability</b>	8.42	0.000	0.05	Reject H0 and accept H1	0.87	0.31
<b>Responsiveness</b>	9.53	0.000	0.05	Reject H0 and accept H1	0.53	0.13
<b>Assurance</b>	11.32	0.000	0.05	Reject H0 and accept H1	0.57	0.17
<b>Empathy</b>	16.43	0.000	0.05	Reject H0 and accept H1	0.83	0.29
<b>Tangibles</b>	7.73	0.000	0.05	Reject H0 and accept H1	-0.22	-0.44
<b>Social Responsibility</b>	6.4	0.000	0.05	Reject H0 and accept H1	0.41	0.19

Note that the significance level for all dimensions is less than 0.05, Null hypothesis (H0) is rejected and first assumption (H1) is accepted. This means that in 95% confidence intervals there is a significant difference between the dimensions mean of service quality and average hypothetical population (3). Positive values of the upper and lower of the distance between the mean of five dimension from six dimensions shows with 3, that the organization statues in term of these dimensions is desirable. In other words, the reliability, respond, assurance,

empathy, and social responsibility related to the service quality of medical sciences university of Bushehr are in acceptable range. However, when the upper and lower limit related to tangibles was negative, it is concluded that Bushehr University of medical sciences in terms of tangibles is in a bad situation, which is mostly related to the physical facilities. In simple terms, customer expectations of the six dimensions of service quality and their perceptions of these dimensions in cultural and student department of medical science university of

Bushehr have significant differences. Therefore, their perceptions of the dimensions of reliability, responsiveness, assurance, empathy, and social responsibility were higher than their expectations, but their perceptions from the tangibles of service quality were lower than their expectations.

After the t-test, Friedman test was used to prioritize quality of service. Friedman test is a statistical test that compares and prioritizes dimensions of a variable according to the mean of dimensions. Scale in this test must be at least ordinal that in this study is like that.

In the present study, theories relating to prioritizing the quality of service are as follows:

<b>H0</b>	Rating (priority)of service quality dimensions is the same in Bushehr University of Medical Sciences
<b>H1</b>	Rating (priority)of service quality dimensions is not the same in Bushehr University of Medical Sciences

After execution of second test, the result was the same with the result (Table 3), since the significance level was less than 0.05, the assumption of having the same rank rejected. In fact, here it is confirmed the importance or priority of service quality dimensions in medical science university of Bushehr is not the same. In addition, the second output (Table 4) is descriptive statistics that shows the mean score for quality of service. According to this table, empathy of service quality in medical science university of Bushehr has a better situation compare with other dimensions.

**Table 3.** Friedman test for quality of service

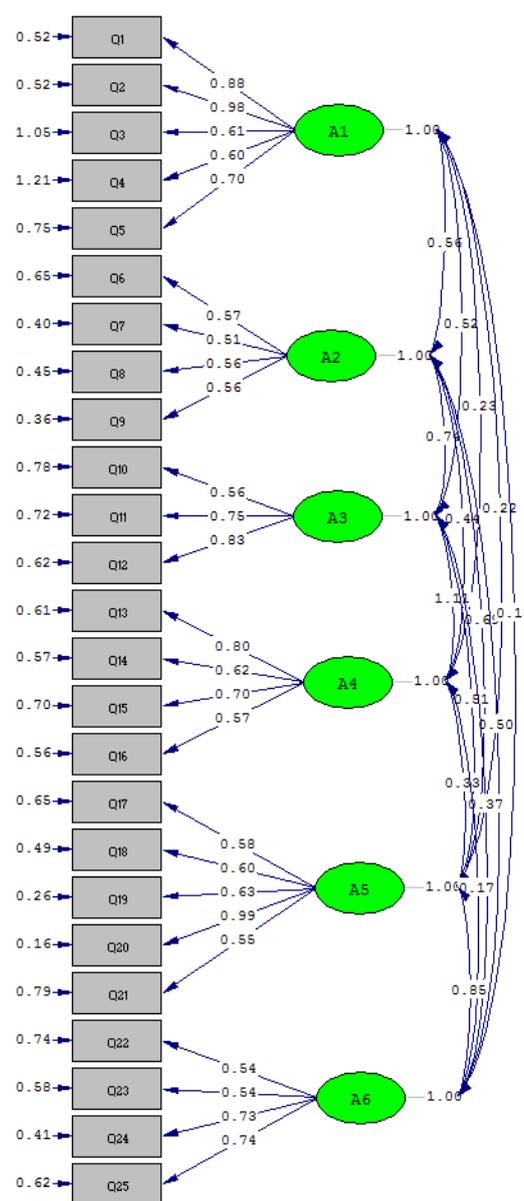
Chi-square value	Degrees of freedom	significance level	The error value	Test result
41.84	5	0.000	0.05	Reject H0 and accept H1

**Table 4.** The priority dimensions of service quality in Bushehr University of medical sciences

Dimensions	Mean
Empathy	4.12
Social Responsibility	3.85
Responsiveness	3.71
Reliability	3.66
Assurance	3.38
Tangibles	2.88

After the tests in SPSS, to evaluate the fitting of the service quality model using LISREL 8.8 software confirmatory factor analysis was used to evaluate the

model. If the following conditions are satisfied, the model has a good fit, Factor loading values Among the questions and variables be greater than 0.5 -Chi-square to freedom degrees ratio be less than 3 -Root mean square error of approximation (CFI) be less than 0.05 - Goodness of fit index (GFI) - Adjusted Goodness of Fit Index (AGFI) – Non-Normed fit index (NNFI) be greater than 0.9 (Jorsgok and Sorbum, 1991). As it shows in Figure 3 all factors loading values are above 0.5. Also in table 5 it is specified that fitness values of model, all are in a proper situation. Therefore the fitness value of medical science university of Bushehr is valid and we can conclude that All questions have been fit enough to explain the relevant variables.



Chi-Square=599.47, df=260, P-value=0.00000, RMSEA=0.1

**Figure 3.** The priority dimensions of service quality

## CONCLUSION

As it has stated, quality and service quality are characteristics of survival in the era of competition, that this, in term of educational center services like universities, is true. Academic foundation and background reviews of this article, provides the importance of services, its characteristics and the role of quality in the success of any organization. As the service and quality of service becomes the criterion of assessment. This paper aims to assess the quality of services in medical university of Bushehr in the context of a standardized questionnaire of SERVQUAL model and from the respondents' point of view, conclude that quality of Bushehr University of medical sciences in five dimensions of reliability, responsiveness, assurance, empathy and social responsibility are desirable. However, Bushehr University of medical sciences in terms of tangibles, which is mostly related to the physical facilities, is not in a desirable situation. Hence it is proposed that, officials of Bushehr university of medical sciences, have special attention to the attractive and modern physical facilities, the elegant and clean environment, comfortable and pleasant atmosphere in the organization, regular documents (like pamphlets , Brochures, etc.), as well as the necessary tools to help clients.

because of the recent changes and the key and important role of the of universities in term of education services and development of countries, assessment the performance of universities in order to enrich the quality of services provided by them and prevent the reduction of their performance, seems to be necessary. Based on the leaps made in evaluating the performance of service organizations from the process oriented assessment to the data and customer oriented assessment, using new methods of measuring service in quality of medical centers can led to an increase level of their service quality. SERVQUAL model, as the most efficient provided technique to measure the quality of services, can provide a proper ground to challenge the problems existed in universities and help them in term of quality performance deployment. Therefore, it is recommended to universities, measure the service quality, provided by them with the above tool and prepare the ground of improvement in quality.

According to the results of this study, the gap between the expectations and perceptions of students from the service quality of medical science university of Bushehr, in the framework of SERVQUAL model, has been assessed and measured. In this way, from the results of this study we can use to increase service performance of universities. Suggestions of this study

can provide in two strategic and executive sections. It is purposed that university officials, use the results of current survey and apply it in term of service planning. It is also purposed to future researchers to use the methodology of this survey to measure the service quality of other universities with economical approach.

## REFERENCES

- Aldridge, S., & Rowley, J. (1998). Measuring customer satisfaction in higher education. *Quality Assurance in Education*, 6(4): 197-204.
- Alves, A. R., & Vieira, A. (2006). SERVQUAL as a marketing instrument to measure service quality in higher education institutions. In *Second International Conference: Product Management Challenges of the Future*, Poznan, Poland-May (pp. 18-20).
- Bell, S. J., & Eisingerich, A. B. (2007). The paradox of customer education: Customer expertise and loyalty in the financial services industry, *European Journal of Marketing*, 41(5/6), 466-486.
- Bennett, D. (2001). Assessing quality in higher education. *LIBERAL EDUCATION-WASHINGTON DC-*, 87(2), 40-45.
- Canic, M. J., & McCarthy, P. M. (2000). Service quality and higher education do mix. *Quality progress*, 33(9), 41-46.
- Chen, P. T., & Hu, H. H. S. (2013). The mediating role of relational benefit between service quality and customer loyalty in airline industry. *Total Quality Management & Business Excellence*, 24(9-10), 1084-1095.
- Fowdar, R. (2005). Identifying Health Care Quality Attributes, *Journal of Health and Human Services Administration*, 27(3-4), 428-444.
- Galloway, L. (1998). Quality perceptions of internal and external customers: a case study in educational administration. *The TQM Magazine*, 10(1), 20-26.
- Gounaris, S., Dimitriadis, S., & Stathakopoulos, V. (2010). An examination of the effects of service quality and satisfaction on customers' behavioral intentions in e-shopping. *Journal of services marketing*, 24(2), 142-156.
- Hanushek, E. A., Lavy, V., & Hitomi, K. (2006). Do students care about school quality? Determinants of dropout behavior in developing countries (No. w12737). National Bureau of Economic Research.
- Jiewanto, A., Laurens, C., & Nelloh, L. (2012). Influence of Service Quality, University Image, and Student Satisfaction toward WOM Intention: A Case Study on Universitas Pelita Harapan Surabaya. *Procedia-Social and Behavioral Sciences*, 40, 16-23.

- Jöreskog, K. & Sörbom, D. (1996). *Structural Equation Modeling with the SIMPLIS Command Language*. Chicago, IL: Scientific Software International, Inc.
- Lagrosen, S., & Lagrosen, Y. (2007). Exploring service quality in the health and fitness industry. *Managing Service Quality*, 17(1), 41-53.
- Moss, S., Prosser, H., Costello, H., Simpson, N., Patel, P., Rowe, S., ... & Hatton, C. (1998). Reliability and validity of the PAS-ADD Checklist for detecting psychiatric disorders in adults with intellectual disability. *Journal of Intellectual Disability Research*, 42(2), 173-183.
- Parasuraman, A., Zeithaml, V., & Berry, L. (1988). SERVQUAL: A Multiple Item Scale for Measuring Consumer Perceptions of Service Quality. *Journal of Retailing*, 64(1), 12-40.
- Perez, M. S., Abad, J. C. G., Carrillo, G. M. M., & Fernández, R. S. (2007). Effects of service quality dimensions on behavioural purchase intentions: A study in public-sector transport. *Managing service quality*, 17(2), 134-151.
- Prentice, C. (2013). Service quality perceptions and customer loyalty in casinos. *International Journal of Contemporary Hospitality Management*, 25(1), 49-64.
- Schroder, A., Larsson, B. W., & Ahlström, G. (2007). Quality in psychiatric care: an instrument evaluating patients' expectations and experiences. *International journal of health care quality assurance*, 20(2), 141-160.
- Sultan, P., & Wong, H. Y. (2012). Service quality in a higher education context: an integrated model. *Asia Pacific Journal of Marketing and Logistics*, 24(5), 755-784.
- Sureshchandar, G. S., Rajendran, C., & Anantharaman, R. N. (2002). Determinants of customer-perceived service quality: a confirmatory factor analysis approach. *Journal of services Marketing*, 16(1), 9-34.
- Vahdati, H., Karimi, A., & Mousavi, S. A. (2014). Asian Research Consortium. *Asian Journal of Research in Marketing*, 3(3), 146-156.
- Zhao, L., Lu, Y., Zhang, L., & Chau, P. Y. (2012). Assessing the effects of service quality and justice on customer satisfaction and the continuance intention of mobile value-added services: An empirical test of a multidimensional model. *Decision Support Systems*, 52(3), 645-656.