

Identifying and Prioritizing the Factors Affecting Quality of Educational Services by Using Analytic Hierarchy Process (Case Study Tarbiat Moallem University)

Seyed Keramat Hosseini

PhD Student of Educational Sciences, State University of Sadral-Din Eini, Tajikistan

ABSTRACT

Nowadays, universities and higher education institutes are considered as a means for economic, social and cultural development and growth and also as the most fundamental development and growth hubs of any country. In the same direction, academic courses can play effective role in fulfilling main missions of the higher education and especially training expert manpower and researcher, expanding frontiers of knowledge and effective participating in socioeconomic and cultural development of the country. In this paper, identifying and prioritizing the factors affecting quality of educational services by using Analytic Hierarchy Process (AHP) is studied. While reviewing literature and concepts of quality of services, effective factors were studied in this paper. For this purpose, a questionnaire was designed in order to ensure effect of the extracted factors. "t" Test was used for the analysis of questionnaire data. After ensuring effect of the identified factors, prioritizing the factors were taken into consideration through the use of Analytic Hierarchy Process (AHP). Finally, prioritizing factors were carried out thanks to the criteria which are SERVQUAL Model dimensions. The result of the prioritizing shows that the following factors enjoy priority respectively in improving quality of educational services:

- Benefiting from efficient management,
- Selecting experienced and expert university lecturers,
- Applying modern teaching methods,
- Taking advantage of educational technology
- Changing methods of admitting students,
- Improving curriculum with an emphasis on entrepreneurship
- Improving performance evaluation methods of university lecturers

Keywords: Quality of Training Services, SERVQUAL, Analytic Hierarchy Process (AHP), Education

1. INTRODUCTION

Higher education is considered as one of the key elements of human development in any country. The rapid expansion of higher education institutions in developing countries such as Iran is the important characteristics of the higher education over the previous four decades.

In fact, higher education represents a type of investment in human resources and helps all-out development of the country.

Nowadays, the universities are increasingly under pressure to prove their participation in development of communities in such a way that accountability towards realization and/or non-realization of educational objectives has been turned into a necessity.

Also, process of structural changes in higher education has started over the past decades.

Burgeoning population, expansion of secondary public education along with growing middle class has led to the great demand for entering the university. Particularly, ever increasing expansion of technology in the field of communications and information services has faced human communities with the new requirements and also has provided a suitable market for the higher education centers. Moreover, development of technology has brought about competition and attempt to attract more and talented students.

Regarding this fact that subject of quality has faced management of organizations with challenges. It should be noted that quality of services is the important factor for the growth, success and durability of the organization and has been put atop agenda of the management as a strategic, effective and comprehensive factor. Recently, interest in boosting quality of higher education and universities has been increased noticeably, details of which have been taken into consideration in educational researches.

So, the present study has been carried out to identify and prioritize the factors affecting quality of educational services.

Definition of service quality

Lewis and Booms (1983, p. 100) were perhaps the first to define service quality as a "...measure of how well the service level delivered matches the customer's expectations". Parasuraman et al. (1988, p. 16) defined perceived service quality as "global judgment, organizational attitude, relating to the superiority of the service.

In fact, The construct of quality as conceptualized in the services literature centres on perceived quality. Perceived quality is defined as the consumer's judgment about an entity's overall excellence or superiority. It differs from objective quality which involves an objective aspect organizational feature of a thing or event. Perceived quality is a form of attitude, related to, but not the same as, satisfaction, and resulting from a comparison of expectations with perceptions of performance.

University Service quality dimensions

Viewing education as a service can facilitate generalizing service quality dimensions for this sector. However, the specific characteristics of any service industry necessitates finding its unique dimensions in addition to the common features with other services.

There is a general perspective that service quality is a multidimensional or multi- attribute construct .however there is no general agreement as to the nature or content of the dimensions.

- Researchers have tried to develop conceptual models to explain the service quality and to measure consumers perceived service quality in different industries (Seth *et al.*, 2005). A good operational example of a standardized framework for understanding service quality is the SERVQUAL instrument developed by Parasuraman.Parasuraman et al. (1985) provided a list of ten determinants of service quality as a result of their focus group studies with service providers and customers: access, communication, competence, courtesy, credibility, reliability, responsiveness, security, understanding and tangibles. The researchers discovered five general dimensions with focus group interviews which they labeled: reliability, responsiveness, tangibles, assurance and empathy (Parasuraman et al. 1988, 1991, 1994, Spreng and Singh, 1993,Wong and Sohal, 2002). Service quality is an important factor for success in the service sector. Thus, some managers emphasize the various dimensions of service quality (Glaevliet *al.*, 2006).

- Gronroos (1982, 1990) noted that the quality of a service as perceived by customers has three dimensions: functional (or process) dimension, technical (or outcome) dimension, and image.

The importance and the utility value of each determinant of quality is dependent on the nature of the service. For example, in low contract and low variety standard services, such as refuse collection, or some mail deliveries, "customization" is not a significant of the service quality. In the case of standard but high variety, high number of contacts of low duration services, such as retail, "access" is much more significant than "customization" organizational "responsiveness". so several studies about education service quality has been made.

- McElwee and Redman (1993) used SERVQUAL as a basis for an adapted model for higher education. In view of the framework structure of SERVQUAL, their main emphasis was placed on functional (interactive) aspects of quality.

Hill (1995) also investigated the implications of service quality theory for higher education. Briefly addressing some quality dimensions, he focused mainly education. Briefly addressing some quality dimensions, he focused mainly on the application of s perception-expectation model in this context. In another study, Anderson (1995) used SERVQUAL to evaluate the quality of an administrative section in a university (office of student services).

In their study made on the quality of services in private university, Kamal &Ramzi (2002) showed that students in faculties of Art, Architecture and Designing are more satisfied with the quality of presented educational services than the students in Technical and Engineering Faculty.

Also, they showed that male students are more satisfied significantly with the quality of educational services than the female students. (Kamal &Ramzi, 2002)

In a similar study, Dulawat&Rai (2005) showed that 67.80 percent of students are satisfied and/or fully satisfied with the library and laboratory facilities, 42 percent from teaching and education equipment, 54.7 percent from technical skills and knowledge of trainers, 57.10 percent personal communication skills of trainers, 47.6 percent from teaching method of trainers.

In their study, Akkilie&Semic (2005) showed that the minimum and maximum satisfaction level of students on educational services is related to the dimension of accessibility (communications) and friendship (respect).

Also, results of their study showed that there is a significant difference between students of various faculties regarding satisfaction with the educational services. But, this difference was not confirmed with regard to the gender.

2. MATERIALS AND METHODS

All the graduate students, entered the university in 2009, official and contractual staff and managers of TarbiatMoallem (Teacher Training) University constituted subject of this study.

According to the statistics made in the university, the number of subject stood at 1,625 persons.

Since we intend to identify and prioritize the factors affecting quality of educational services, this study has been carried out in two stages.

The first questionnaire, which is conducted to identify the factors affecting quality of educational services and since subject of student stands at 1,625 persons, the sample size was obtained 313 persons through the use of Morgan Table.

Of total 313 persons, seven of them refrained filling out the questionnaire. Generally, 305 questionnaires were used in first stage.

The second questionnaire was prepared to collect data for paired comparison in managers and supervisors level. So, all managers and supervisors of the university were asked.

Library method was used for collecting data related to the concepts of quality of educational services. In the same direction, different resources of information have been used for identifying the factors involved in quality of educational services as library basis.

To ensure accuracy of the collected data, connoisseurs and experts' opinions has been used. In this study, a number of 6 university lecturers in the field of management were introduced as expert individuals who had enough experience in teaching and conducting research activity in this field.

Moreover, some managers of the university were used who had enough awareness and familiarity with the subject of this study.

Also, a questionnaire was used to collect data with the aim of identifying factors affecting educational quality and prioritizing factors. The validity of the questionnaire was determined as formal and Cronbach's Alpha Coefficient was used for measuring reliability of the questionnaire. Cronbach's Alpha (SPSS Software) was observed through the obtained results, based on which, reliability of questionnaire stood more than 78% i.e. 0.784 percent.

The extracted effective factors are as follows:

- 1) Benefited from efficient management,
- 2) Selecting experienced and expert lecturers,
- 3) Improving performance evaluation methods of university lecturers,
- 4) Improving acceptance methods of students,
- 5) Applying modern teaching methods and using educational technology
- 6) Improving curriculum with an emphasis on entrepreneurship

3. RESULTS AND DISCUSSION

Data Analysis

1st Questionnaire Analysis

"T" Test was used to ensure that if extracted factors are effective on the quality of educational services or not.

Since Likert Scale has been used in the questionnaire, numbers from 1 to 5 have been encoded.

So, the subject mean is considered with number 3 and hypothesis test is as follows:

$$\left\{ \begin{array}{ll} H_0 & : \mu < 3 \\ H_1 & : \mu \geq 3 \end{array} \right.$$

With due observance to the statistical analysis, as observed in Table No. 2, and also Upper and lower values, it can be said that each six factors are placed in significant level and are accepted.

Table 2. Studying Effect of Extracted Factors on the Quality of Educational Services

One-Sample Test						
	Test Value = 3					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
efficient management	56.182	304	.000	1.60000	1.5440	1.6560
expert lecturers	49.319	304	.000	1.32787	1.2749	1.3808
Improving performance evaluation methods	52.381	304	.000	1.13443	1.0918	1.1770
acceptance methods of students	44.247	304	.000	1.30492	1.2469	1.3630
Applying modern teaching methods	41.289	304	.000	1.38361	1.3177	1.4495
Improving curriculum with an emphasis on entrepreneurship	47.312	304	.000	1.34426	1.2884	1.4002

Analytic Hierarchy Process (AHP) was used to prioritize factors affecting quality of educational services. This method deals with analyzing the issue like what is done in the human brain. AHP enables decision makers to determine mutual and simultaneous effects of many indefinite and complex situations (Iranzadeh and Chakherlouy, 2010). This process assists decision makers to regulate priorities based on their objectives, knowledge and experience in order to consider their judgments and feelings completely (Iranzadeh and Chakherlouy, 2010).

To solve decision-making problems through AHP, all problems should be defined precisely and its details should be traced in the form of hierarchical structure.

AHP is based on the following three principles:

- A) Principle of drawing hierarchical tree,
- B) Principle of compiling and determining priorities
- C) Principle of logical consistency of judgments

In modeling based on AHP Method for this study, quality of educational services was put forward as objective, tangibles as C1, reliability as C2, responsiveness as C3, assurance as C4, empathy as C5, benefited from efficient management as A1, selecting experienced and expert university lecturers as A2, improving performance evaluation methods of university lecturers as A3, improving acceptance methods of students as A4, applying modern teaching methods and using educational technology as A5, and improving curriculum with an emphasis on entrepreneurship as A6.

Based on the aforementioned subjects, Analytic Hierarchy Process (AHP) of the present study has been shown in Diagram 1:

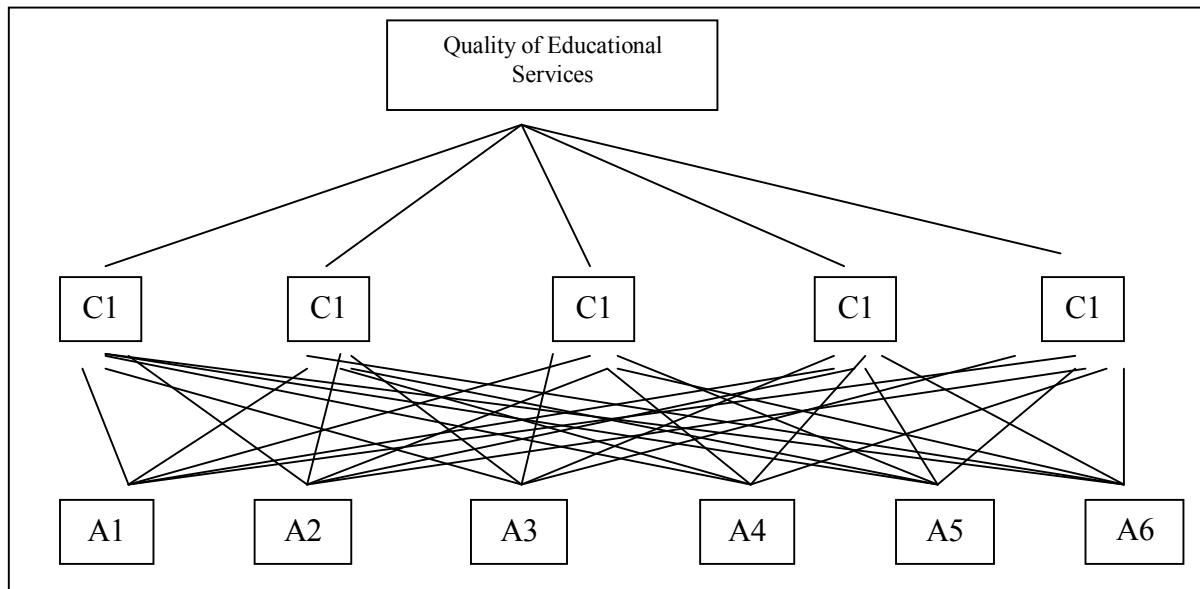


Diagram 1. AHP Tree

In this study, all AHP operations were carried out by Expert Choice 2000 software package system.

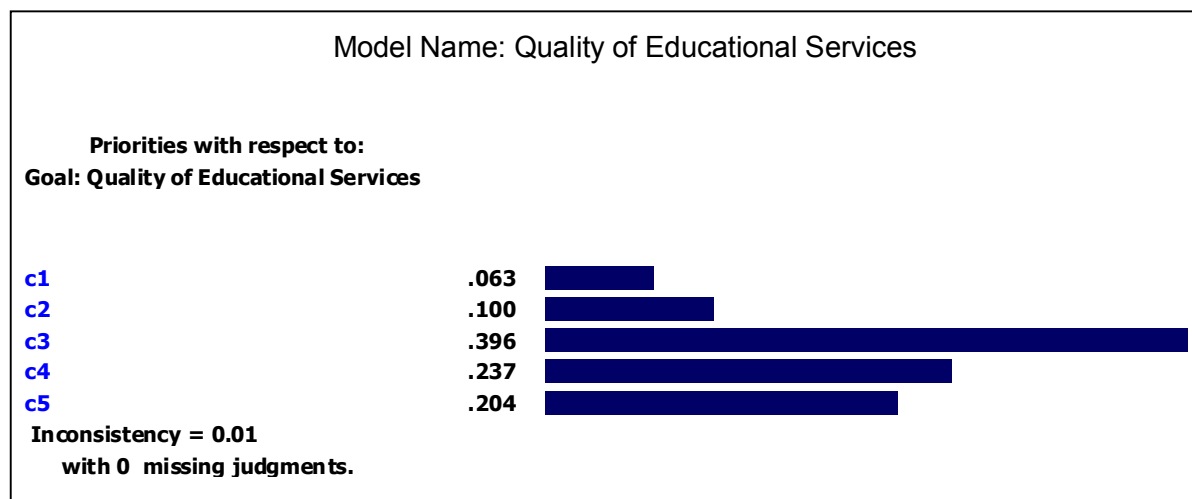


Diagram 2. Software Output (comparison of criteria)

As it is observed in Diagram 2, the inconsistency indicator value stands at 0.01 which is less than 0.10. ($0.01 < 0.10$) and is accepted in level.

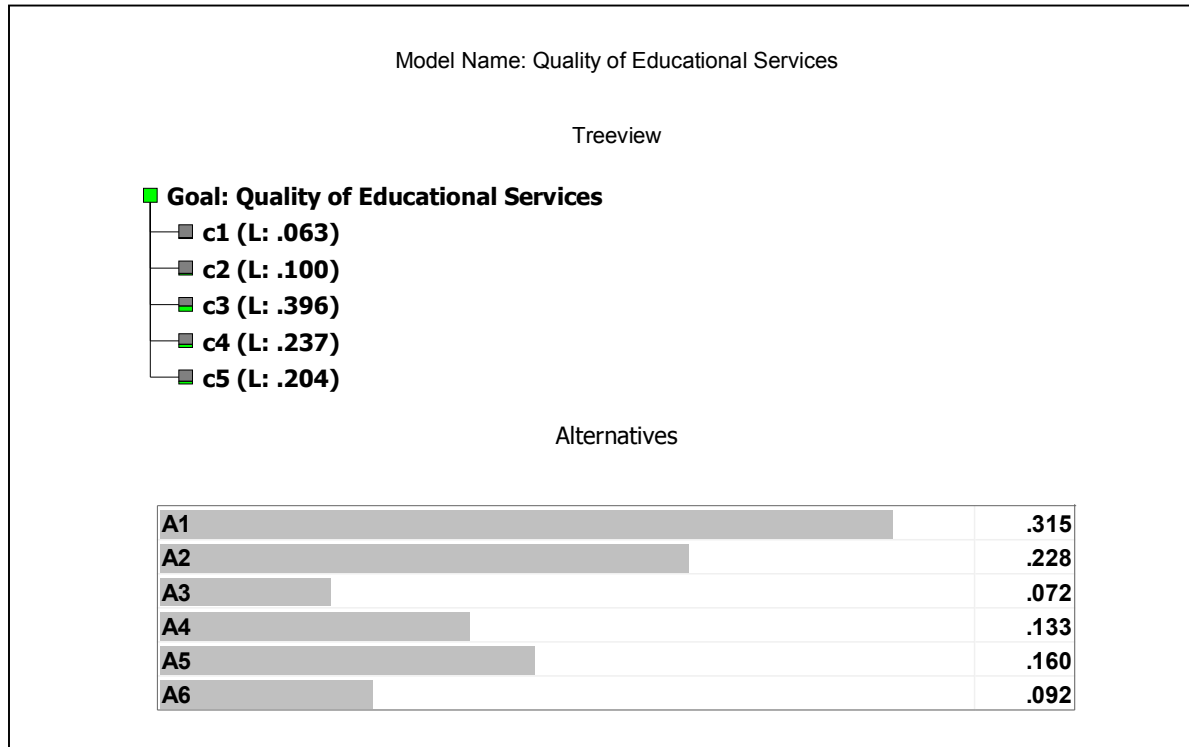


Diagram 3.Software Output (Ranking Factors)

With due observance to the Diagram 3, ranking the factors will be as follows:
 $A1 > A2 > A5 > A4 > A6 > A3$

4- Conclusion

Nowadays, the universities are increasingly under severe pressure to prove their participation in development of communities in such a way that responsiveness with regard to realization and/or non-realization of educational objective has been turned into a necessity. Accordingly, the following question is major concern of planners and functionaries of higher education system: "To know if students after being graduated enjoy necessary capabilities and knowledge to be employed or not?"

Answering this question should be sought in the quality governing universities and their educational services.

With the studies made in this regard, it is observed that the first priority is given to: benefiting from efficient management, second priority is: selecting experienced and expert university lecturers, 3rd priority is: applying modern teaching methods and using educational technology, 4th priority is: change of acceptance methods of students, 5th priority is: improving curriculum with an emphasis on entrepreneurship while sixth priority is: improving performance evaluation methods of university lecturers.

Therefore, the followings are recommended:

- Using participative and consultative management techniques in administering current affairs of the university,
- Emphasizing on academic aspects in selection of chancellor of the university, dean of faculty, and managers of educational groups
- Removing redundant executive and administrative activities from duties of university lecturers,
- Reducing hours of teaching (special of lecturers)
- Considering some hours and binding them to teach research projects,
- Empowering students in MA degree to select their lecturers in relevant courses,
- Launching an evaluation system on performance of lecturers based on collecting opinions of colleagues
- Fulfilling comprehensive and continuous evaluation on scientific activities of lecturers by the managers of educational groups, faculty and university,

Providing necessary facilities for students in MA degree with the aim of using scientific and educational facilities like participating in seminars and studying opportunities, employing students in MA degree in research and educational activities like helping university lecturers in the field of teaching, taking advantage of MA students as assistant to university lecturer as researcher, paying due attention to the practical and research activities and presenting research projects in turn, compiling academic textbooks in MA level by a group of experienced and leading university lecturers in each course, empowering university lecturers to select curriculum resources, offering facilities to students and lecturers to use libraries of other universities, and presenting study opportunities to improve quality of educational services

REFERENCES

- Akkilic, E. M., & Semeric, C. (2005). The measurement of customer's satisfaction in education services marketing. *Pakistan Journal of Social Science*, 3(8), 997-1001.
- Anderson, E. (1995). "High tech v. high touch: a case study of TQM implementation in higher education", *Managing Service Quality*, Vol. 5 No. 2, pp: 48-56.
- Dulawat, S. M., & Rai, S. R. (2005, Jan 8-10). Satisfaction level of students as a tool for performance measurement. *Indore International Seminar on Strategic Role of HRM in new millennium*, IPS Academy.
- Glaveli, N., E. Petridou, C. Liassides and C. Spathis, 2006. Bank service quality: Evidence from five balkan countries. *Managing Service Quality*, 16: 380-394.
- Gronroos, C. (1982), *Strategic Management and Marketing in Service Sector*, Marketing Science Institute, Cambridge, MA.
- Gronroos, C. (1990), *Service Management and Marketing*, Lexington Books, Lexington, MA.
- Hill, F. (1995), "Managing service quality in higher education: the role of the student as primary consumer", *Quality Assurance in Education*, Vol. 3, No. 3, pp: 10-21.
- Iranzadeh, S.; Chakherlouy, F. (2010); A unique approach to multi-factor decision making by combining hierarchical analysis with error analysis, *Advanced Management Science (ICAMS)*, 694 - 698.
- Iranzadeh, S.; Chakherlouy, F. (2010); Designing and formulating organization performance evaluation model in AHP method based on EFQM criteria (case study), *Advanced Management Science (ICAMS)*, 606 – 609.
- Kamal, A., & Ramzi, N. (2002). Assuring quality service in higher education: Registration and advising attitudes in a private university in Lebanon. *Quality Assurance in Education*, 10 (4), 198-206.
- McElwee, G. and Redman, T. (1993). "Upward appraisal in practice", *Education and Training*, Vol. 35, No. 2, pp. 27-31.
- Owlia and Aspinall (1996) proposed conceptual framework for quality dimensions in higher education.
- Owlia, M. S. and Aspinwall, E. M. (1997). "TQM in Higher education- a review", *International Journal of Quality & Reliability Management*, Vol. 14, No. 5, pp: 527-43.
- Parasuraman, A.; Zeithaml, V. and Berry, L. (1985). "A conceptual model of service quality and its implications for future research", *Journal of Marketing*, Vol. 49, pp: 41-50.
- Parasuraman, A.; Zeithaml, V. and Berry, L. (1988), "SERVQUAL: a multiple- item scale for measuring consumer perceptions of service quality", *Journal of Retailing*, Vol. 64 No. 1, pp. 12-40.
- Parasuraman, A.; Zeithaml, V. and Berry, L. (1991). "Refinement and reassessment of the SERVQUAL scale", *Journal of Retailing* Vol. 67, pp: 420-50.
- Parasuraman, A.; Zeithaml, V. and Berry, L. (1994). "Reassessment of expectations as a comparison in measuring service quality: implications for future research", *Journal of Marketing*, Vol. 58, No. 1, pp: 111-24.
- Seth, N., S.G. Deshmukh and P. Vrat, (2005). Service quality models: A review. *Int. J. Quality Reliability Manage.*, 22: 913-949.
- Spreng, R. A. and Singh, A. K. (1993). "An Empirical Assessment of the SERVQUAL Scale and the Relationship between Service Quality and Satisfaction," in Peter, D. W., Cravens, R. and Dickson (eds.), *Enhancing Knowledge Development in Marketing*, Chicago, IL: American Marketing Association, 1-6.
- Weller, D. L. (1996), a Return on quality: a new factor in assessing quality efforts, *International Journal of Educational Management*, Vol. 10, No. 1, pp: 30-40.
- Wong, A. and A. Sohal, (2002). Customers perspectives on service quality and relationship quality in retail encounters. *Managing Service Quality*, 12: 424-433.