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**INVESTIGATING THE CORRELATION BETWEEN THE QUALITY OF SERVICE  
AND CUSTOMER LOYALTY IN LIBRARIES OF MAZANDARAN UNIVERSITY  
OF MEDICAL SCIENCES BASED ON SERVPERF MODEL**

**ASIEH YOUSEFI<sup>1</sup>, SAFIYEH TAHMASEBI LIMOONI<sup>2\*</sup>**

**1, 2:** Department of Knowledge and Information Science, Babol Branch, Islamic Azad University,  
Babol, Iran

\*Author for Correspondence: [Sa.tahmasebi2@gmail.com](mailto:Sa.tahmasebi2@gmail.com)

**ABSTRACT**

The aim of this study is to Determine the correlation between the quality of library service at Mazandaran University of Medical Sciences, based on SERVPERF model, and customer loyalty. This study is applied in terms of objective and survey-analytical based on data collection, and has bivariate correlation in terms of analysis. The research tool consists of the quality of service questionnaire by Anvari Rostami, Torabi Goudarzi and Ali Mohammadlou (2005), and customer loyalty questionnaire by Ackoro and Nick Math (2008). Based on the Cronbach's alpha coefficient, the reliability of quality of service questionnaire is equal to 0.94 and the customer loyalty questionnaire equal to 0.93. The statistical population consists of 357 subjects (out of 4840) from all members referring to the libraries of Mazandaran University of Medical Sciences in 2015. The data analysis method is done based on the descriptive statistics (measuring the frequency, percentage, percentages, mean and standard deviation) and inferential statistics (Kolmogorov-Smirnov test, one-sample t-test, and Pearson correlation coefficient) through SPSS 20 software. The results indicate that there is a significant positive correlation between the quality of service (based on SERVPERF model) ( $r=0.621$ ) and physical dimensions ( $r=0.501$ ), reliability ( $r=0.523$ ), accountability ( $r=0.558$ ), assurance ( $r=0.598$ ) and empathy ( $r=0.643$ ) with customer loyalty ( $\text{Sig}<\alpha=0.01$ ). There is a significant correlation between the quality of service (based on SERVPERF model) and customer loyalty in libraries of Mazandaran University of Medical Sciences, so that the customer loyalty is increased by enhancing the service quality in libraries of Mazandaran University of Medical Sciences.

**Keywords:** Quality of service, customer loyalty, SERVPERF model, libraries, University

## **INTRODUCTION**

The significant changes have been made in all aspects of human life including the information and communication in recent years. The information generation, transmission, distribution, conversion and application has been significantly increased through the new technologies. This growth has grown substantially in the field of service, but the obstacles are ahead, so that the quality of service has been usually faced with three main challenges namely the improved quality of service, increased identification and confidence, and efforts to acquire and retain the customers. The competition is increased in any case because the managers have taken efforts towards providing the more valuable service and gaining the competitive advantage and increasing the market share and more popularity. This refers to the strategy of companies in developing the service quality model based on the customer expectation. The customer expectation of library service can be a driver of progress in the library. This driving force compels the libraries to think about changes in improving the provided quality of service [14].

Nowadays, the quality of service has been more taken into account as an important factor for growth, success and durability of organizations and as the strategic, effective

and pervasive issue by management of organizations because the organizations have found that to what extent the lack of sufficient information about the expectations and feedback of customer perceptions of provided service for organizations have made problems. The emergence and development of theories of organization and management has always played the crucial role in efforts to improve the efficiency and effectiveness of an organization. The libraries and information centers have also taken the increasing efforts in proper and successful implementation of these theories [13].

The academic libraries play the strategic roles in education system and survival of educational and research centers and are important in terms of scientific and cultural aspects. The optimal function and more quality of services for these institutions facilitate the achievement to scientific and cultural objectives of community (Hariri, 2002). Therefore, this research is seeking to investigate the quality of service in libraries of Mazandaran University of Medical Sciences based on SERVPERF model and its correlation with customer loyalty.

## **MATERIALS AND METHODS**

This research is applied and has the analytical-survey method. Its statistical population consists of all 4840 members attending the libraries of Mazandaran

University of Medical Sciences (including the students, faculty members and staff) in 2015 and 357 ones are selected as the sample size by stratified random sampling and based on Kerjcie and Morgan table. Two questionnaires of customer loyalty by Haddadian et al [1], and standard questionnaire of quality of service designed by Anvari-Rostami et al [1], are utilized for data collection. Cronbach's alpha coefficient is used to assess the reliability. If the Cronbach's alpha is greater than 7.0, it indicates the reliability of questions; it is greater than 0.7 in all cases in this study and it implies the high validity of questionnaire. The data is analyzed by SPSS 22 software and through descriptive statistics, namely, the frequency, percentage of frequency, mean, and standard deviation, and by analytical statistics and Kolmogorov-Smirnov test in order to assess the data normality. Furthermore, the one-sample t-test, student's t test, and Pearson correlation coefficient are utilized to investigate the research hypotheses.

## RESULTS

**First question:** To what extent is the rate of quality of services offered in studied libraries?

32 questions (1-32) in target questionnaire are utilized to measure the quality of

service provided in libraries of Mazandaran University of Medical Sciences.

Table 1 shows that the data rejects the null hypothesis ( $H_0$ ) and confirms the research hypothesis ( $H_1$ ) at the confidence level of 99 percent ( $\alpha=0.01$ ) as ( $\alpha=0.01 > P=0.000$ ).

**Second question:** To what extent is the rate of customer loyalty in studied libraries?

15 questions (33-47) in target questionnaire are utilized to measure the rate of customer loyalty in libraries of Mazandaran University of Medical Sciences.

Table 2 shows that the data rejects the null hypothesis ( $H_0$ ) and confirms the research hypothesis ( $H_1$ ) at the confidence level of 99 percent ( $\alpha=0.01$ ) as ( $\alpha=0.01 > P=0.000$ ).

**Third question:** To what extent is the rate of each component of quality of service provided in studied libraries?

The relevant questionnaire is utilized to measure the rate of each component of quality of provided service or the physical dimensions.

Table 3 shows that the data rejects the null hypothesis ( $H_0$ ) and confirms the research hypothesis ( $H_1$ ) at the confidence level of 99 percent ( $\alpha=0.01$ ) as ( $\alpha=0.01 > P=0.000$ ).

## 4-4- Hypothesis test

The research hypotheses are presented in this sector.

**First hypothesis:** There is a significant correlation between the quality of service

(based on SERVPERF model) and customer loyalty in studied libraries.

The results of data investigation in Table 4 indicate that the data rejects the null hypothesis ( $H_0$ ) and confirms the research hypothesis ( $H_1$ ) at the confidence level of 99 percent ( $\alpha=0.01$ ) as ( $\alpha=0.01 > P=0.000$ ).

**Second hypothesis:** There is a significant correlation between the quality of service (based on the physical dimensions) and customer loyalty in studied libraries.

The results of data investigation in Table 5 indicate that the data rejects the null hypothesis ( $H_0$ ) and confirms the research hypothesis ( $H_1$ ) at the confidence level of 99 percent ( $\alpha=0.01$ ) as ( $\alpha=0.01 > P=0.000$ ).

**Third hypothesis:** There is a significant correlation between the quality of service (based on the reliability) and customer loyalty in studied libraries.

The results of data investigation in Table 6 indicate that the data rejects the null hypothesis ( $H_0$ ) and confirms the research hypothesis ( $H_1$ ) at the confidence level of 99 percent ( $\alpha=0.01$ ) as ( $\alpha=0.01 > P=0.000$ ).

**Fourth hypothesis:** There is a significant correlation between the quality of service

(based on the accountability) and customer loyalty in studied libraries.

The results of data investigation in Table 7 indicate that the data rejects the null hypothesis ( $H_0$ ) and confirms the research hypothesis ( $H_1$ ) at the confidence level of 99 percent ( $\alpha=0.01$ ) as ( $\alpha=0.01 > P=0.000$ ).

**Fifth hypothesis:** There is a significant correlation between the quality of service (based on the assurance) and customer loyalty in studied libraries.

The results of data investigation in Table 8 indicate that the data rejects the null hypothesis ( $H_0$ ) and confirms the research hypothesis ( $H_1$ ) at the confidence level of 99 percent ( $\alpha=0.01$ ) as ( $\alpha=0.01 > P=0.000$ ).

**Sixth hypothesis:** There is a significant correlation between the quality of service (based on the empathy) and customer loyalty in studied libraries.

The results of data investigation in Table 9 indicates that the data rejects the null hypothesis ( $H_0$ ) and confirms the research hypothesis ( $H_1$ ) at the confidence level of 99 percent ( $\alpha=0.01$ ) as ( $\alpha=0.01 > P=0.000$ ).

Table 1: One-group t-test to measure the quality of provided service

Number of samples	Mean sample	Standard deviation	Average value	Mean difference	T statistic	Degree of freedom	Significance level
357	3.98	0.60	3	0.98	30.74	356	0.000

Table 2: One-group t-test to measure the rate of customer loyalty

Number of samples	Mean sample	Standard deviation	Average value	Mean difference	T statistic	Degree of freedom	Significance level
357	3.95	0.58	3	0.95	30.94	356	0.000

Table 3: One-group t-test to measure the components of quality of provided service

Components	Number of samples	Mean sample	Standard deviation	Mean difference	T statistic	Degree of freedom	Significance level
Physical dimensions	357	3.98	0.67	0.98	27.74	356	0.000
Reliability	357	3.94	0.66	0.94	27.03	356	0.000
Accountability	357	4.12	0.62	1.12	33.80	356	0.000
Assurance	357	3.95	0.69	0.95	26.11	356	0.000
Empathy	357	3.76	0.75	0.76	18.96	356	0.000

Table 4: Investigating the correlation between the quality of service and customer loyalty

Variables	Customer loyalty	
	Statistical indices	Computing values
Quality of service	Total	357
	Correlation coefficient	0.621
	Significance level	0.000

Table 5: Investigating the correlation between physical dimensions and customer loyalty

Variables	Customer loyalty	
	Statistical indices	Computing values
Physical dimensions of quality of service	Total	357
	Correlation coefficient	0.501
	Significance level	0.000

Table 6: Investigating the correlation between reliability and customer loyalty

Variables	Customer loyalty	
	Statistical indices	Computing values
Reliability of quality of service	Total	357
	Correlation coefficient	0.523
	Significance level	0.000

Table 7: Investigating the correlation between accountability and customer loyalty

Variables	Customer loyalty	
	Statistical indices	Computing values
Accountability of quality of service	Total	357
	Correlation coefficient	0.558
	Significance level	0.000

Table 8: Investigating the correlation between the assurance and customer loyalty

Variables	Customer loyalty	
	Statistical indices	Computing values
Assurance of quality of service	Total	357
	Correlation coefficient	0.598
	Significance level	0.000

Table 9: Investigating the correlation between empathy and customer loyalty

Variables	Customer loyalty	
	Statistical indices	Computing values
Empathy component of quality of service	Total	357
	Correlation coefficient	0.643
	Significance level	0.000

## DISCUSSION

The research findings in the study of Question 1 indicate that the quality of service offered in libraries of Mazandaran University of Medical Sciences is more than the average level. Based on

SERVPERF model, these results indicate that the studied subjects think that the quality of service provided in libraries of Mazandaran University of Medical Sciences is at the desired level and this affects the their customers' loyalty resulting

in customer satisfaction. These results are consistent with the results of research by Mohindra and Kumar (2015), Lundrigan et al (2015), Pandiya and Sarmah [12], Moroni [11], and Jafarbeglou et al [7].

The results of investigating the question 2 indicate that the customer loyalty is more than the average in libraries of Mazandaran University of Medical Sciences. In general, these results indicate that the library members at Mazandaran University of Medical Sciences were loyal to this collection. This reflects their satisfaction with the quality of service provided in these libraries because the rate of customer loyalty in libraries and information centers can be based on the perceived quality, effective communication and interaction between the librarians and clients, and satisfaction with provided services by library and its staff, and affects the purpose of reapplication, the use of library service, and preference of a library to others. The obtained results are consistent with the results of research by Georgas [4], and Haddadian et al [5].

The results of question 3 and the subjects' perspective indicate that the rate of each component of quality of service offered in libraries of Mazandaran University of Medical Sciences, namely the physical dimensions, reliability, accountability, assurance and empathy, is higher than the

average level. In explaining the obtained results, it should be noted that if the offered service is more than the customer expectations, it will be considered satisfactory and desirable. When the customer expectations of service match his understanding of provided service, the quality of provided service will be satisfactory. The obtained results are consistent with the results of research by Mohindra and Kumar [10], Pandiya and Sarmah [12], and Jafarbeglou et al [7].

According to the result of first hypothesis, there is a direct and positive correlation between the quality of service (based on SERVPERF model) and the customer loyalty in libraries of Mazandaran University of Medical Sciences. Therefore, according to the results of this research and the conducted studies in this regard inside and outside the country, the libraries, which have greater abilities to provide the high quality service, will significantly fulfill their customers' satisfaction and loyalty, and thus dramatically reduce their dissatisfaction and lack of commitment. Therefore, the compliance with examined service quality components in this study (physical dimensions, reliability, accountability, assurance and empathy) in customer satisfaction can reduce the failure in customer loyalty.

According to the result of second hypothesis, there is a direct and positive correlation between the quality of services offered in libraries of Mazandaran University of Medical Sciences on the basis of physical dimensions and customer loyalty. It can be interpreted that the emphasis on the increased quality of service in terms of physical appearance in libraries is one of the aspects which raises the loyalty in library members at Mazandaran University of Medical Sciences. The establishment of library in the best place of university or college for library members' facilitated access, the existence of a pleasant environment for members such as the style of study hall design, sufficient lighting, comfortable chairs and tables, attention to cooling and heating system, the staff tidy appearance, the existence of panels for different parts of library in order to guide the members for use of updated technology (computer, the internet, etc.) in the library, the proper distribution of books, magazines and sources of different libraries of university according to various academic disciplines, readable and certain forms of membership, easy understandable and completion, etc can meet the members' satisfaction and trust as well as increase their loyalty because this study has proven that the level of loyalty is enhanced by increasing the

physical dimensions of quality of service and vice versa.

According to the result of third hypothesis, there is a direct positive correlation between the quality of provided service in libraries of Mazandaran University of Medical Sciences based on the customer loyalty and reliability. It can be interpreted that the emphasis on the reliability in libraries is as one of the aspects which raises the members' loyalty in libraries of Mazandaran University of Medical Sciences. The provided proper service by staff especially in the first visit, providing the service for members at the promised time, providing the special service with certain conditions for members such as the teachers, faculty members and postgraduate students, and the staff eager to accept the responsibility of service, and admission and correction of mistakes, the staff ability to solve the members' problems and offering them the best solution, etc can increase the members' satisfaction and trust as well as their loyalty because this study proves that the increased reliability of quality of service will lead to the increased at the levels of loyalty and vice versa.

The results of fourth hypothesis indicate that there is a direct positive correlation between the quality of services offered in libraries of Mazandaran University of Medical Sciences based on the

accountability and the customer loyalty. It can be interpreted that the rapid, timely and clear response with patience and modesty in speech is a part of quality of service provided in libraries and it can lead to an increase in the members' loyalty in the library. The emphasis on the staff appropriate way of dealing with customers at busy hours of library, the library staff proper speed, to have the acceptable behavior with members, the guidance and offering the suggestions to members in the field of their needs, the ease of members' communication with authority, the appropriate waiting time for members to receive different types of service at the library, the proportion between the number of service providers with the rate of working at the library, and the staff appropriate speed of response to phone calls and texts by members, etc. can attract the members' satisfaction and trust and also increase their loyalty because this study proves that the increase in the accountability of quality of service will increase the level of loyalty and vice versa. According to the result of fifth hypothesis, there is a significant direct and positive correlation between the quality of service provided in libraries of Mazandaran University of Medical Sciences on the basis of customer loyalty and assurance. It can be interpreted that the emphasis on different

aspects of assurance in the libraries is one of the aspects which lead to an increase in loyalty. The trusted and confident library staff, the staff clear and understandable responses to members' question, the standardized process to provide service for members in proportion to their needs, the consumers' information about the latest changes in different parts of library, the proportional variety of library service to members' needs at different hours of day and proportional variety of service to members' needs in different libraries of university, etc can fulfill the members' satisfaction and trust as well as increasing their loyalty because this study has proven that the increase in the assurance of quality of service will increase the level of loyalty and vice versa.

According to the results of sixth hypothesis, there is a significant direct and positive correlation between the quality of service provided in libraries of Mazandaran University of Medical Sciences on the basis of customer loyalty and empathy. It can be interpreted that the increase in empathy will increase the members' loyalty in libraries of Mazandaran University of Medical Sciences. Allocating the appropriate time to library members in proportion to their requests, the help and sympathy to members in the case of problem, listening to library members' problems and pain and

attention to their demands and needs, advising and providing the solutions for fulfilling the library needs such as the printed and electronic resources, providing the references and encyclopedias, providing the required scientific and research newsletters and journals especially for postgraduate students, providing the service on holidays (Eids, weekends, etc.), friendly and sincere communication between staff and members, etc, can fulfill the members' satisfaction and trust as well as increasing their loyalty because this study proves that the increased empathy will lead to the increased loyalty in them and vice versa.

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