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## The measurement and evaluation of the service quality through customers 'satisfaction

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### Abstract

The contribution deals with the measurement and evaluation of the service quality. It is carried out through the proposed quality criteria for the field of education and information services provided to customers by the institution. The customers evaluate proposed criteria through questionnaires, using the five-grade rating scale, through which reflect the level of their satisfaction, respectively dissatisfaction with the criterion. The evaluation of individual quality criteria determines in which areas of the process of providing services improvement is needed. The measurement results are evaluated statistically and graphically, and also by the correlation analysis on the basis of which can be determined dependence between the quality criteria. These results are of great importance in determining in the quality management process, they allow determining of the impact of changes of one criterion on the other criteria, and the more precise determination of priorities for improving of the services quality.

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### 1. Introduction

The overriding aim of the organizations providing services is to obtain and maintain the customer (Krafka and Elexa, 2014). In the final analysis all the activities of the organization must be focused on the customer, his traditional and new emerging needs related to the natural development of the company in all the areas. This development has to be seen, to take it and in the context of restructuring and service innovation, it progressively incorporated into the internal structure and activities of the organization. The competition in the market of the

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information services greatly intensified for the past decade. There is currently a large number of information centres, predominantly of a commercial character but also there are active traditional stone libraries operating within communities or as part of education of individual types of schools (Kokavcova and Mala, 2009). All these institutions provide services to non-material - information. Therefore, a large share of the customer satisfaction form some other factors, especially the person providing the service; their education, expertise, experience, willingness, disembarking culture, communication and the ability of an individual approach to the customer. The atmosphere and the customer satisfaction is completed by the quality of the exterior and interior, not only material and technical equipment, but also the cleanliness of the premises, amount of greenery, lighting, quality of information technology and information fond (Klementova and Satanova, 2013). The basic reason for the evaluation of the customer satisfaction through satisfying the requirements is to obtain information that will allow management to carry out the right decision to maximize customer satisfaction, and thereby keep him. Performing a thorough evaluation of the customer satisfaction and followed by the internal communication of research results to all the employees is very important for further increasing of the customer satisfaction (Satanova and Sedliačikova, 2014).

## 2. Methods and Resources

Today **the monitoring of the customer satisfaction** belongs among the activities of the strategic importance and it is the most important part in the meeting the principle of feedback of an effective quality management. Every customer based on their own needs, experiences and information obtained from the environment creates the individual ideal that represent the expected performance of service providers. The smaller the difference between perceived reality and the consumer expectations, the degree of their satisfaction is higher (Adamska and Minarova, 2014).

The achieved state decides on the subsequent behaviour of the customer to the organization. Either he returns to the organization or leaving to the competitors. The monitoring of the customer satisfaction is not important in terms of single discovery of a fact at some point, but it is more substantial as monitoring the trend needs. The obtained results can be used by top management as information for the review procedures for effectiveness of the quality management in organizations. It is a system that has to be adapted to changing market conditions, changing customer requirements. (Mateide and Ďaďo, 2002).

For the research of the customer satisfaction we have chosen polling method - in the form of questionnaires which have been designated to collect information from the quality of services provided in the information centre, by the external customers. For the research the sample has been established, which has been formed by the active registered customers. The questionnaires were distributed in all parts of the institution in which they provide customer service. We used the method of "pro forma", where customers have the opportunity to respond to the questionnaire after the provision or during service.

For the research we have compiled a questionnaire with Likert 5-stage scoring system, which is based on the fact that each respondent had the opportunity of multilevel assessment, by which would determine the strength of their attitude. It is constructed in such a way that one marginal state (degree of satisfaction) set out a fully positive perception (5 points), and the second marginal state absolutely negative perception (1 point) by the customer. The results of evaluations allow statistical and graphical processing (Sedliačikova, Satanova and Biernacka, 2013). For the research of the quality of service we have chosen 11 evaluated characters that were processed into the tabular form and the customer should evaluate each character according to their perception and satisfaction. The characters relate to various areas involved in the overall perception of the quality of service, namely personnel, material and technical equipment, operating conditions, the information fond. The customers have realized the evaluation under the instructions of the questionnaire. In the analysis 112 questionnaires from a total of 120 units were included, representing a 93.3% return.

## 3. Results and discussion

### 3.1 *Statistical evaluation of the of the customer satisfaction*

The evaluation of the results of statistical methods with the calculation of statistical indicators (arithmetic mean, maximum and minimum value, standard deviation and median) indicates Table 1. Although the average value

has a general predictive value, in some cases may lead to distortions of conclusion, therefore, it is appropriate to use other statistical methods. It is known that the evaluation of the quality of service is highly subjective matter of the customer.

Table 1. Evaluation of the performance of the organization - the statistical results

Evaluation of performance services	Average performance	Weight	Standard deviation	Median	Max	Min
1. Opening hours	4.00	0.10	0.96	4	5	1
2. Speed of service	3.62	0.09	0.94	4	5	2
3. Length of loan	4.08	0.10	0.71	4	5	2
4. Scope of the library's collection	3.08	0.08	0.94	3	5	1
5. Number of study places	3.43	0.09	0.97	4	5	1
6. Number of places for searching information	4.07	0.10	1.01	3	5	1
7. Availability of literature in study rooms	3.30	0.08	1.06	4	5	1
8. Qualification of staff	4.05	0.10	0.70	4	5	3
9. Willingness of staff	4.24	0.11	0.79	4	5	2
10. Equipment of interior, environment in study rooms	3.65	0.09	0.88	4	5	1
11. Prices of services	3.76	0.09	0.82	4	5	2
Overall evaluation of the quality of service	3.75	$\Sigma = 1$				

In analysing and evaluating the results, it is appropriate to focus attention on the characters that have been allocated the lowest value. For the more objective assessment of the character must be considered a standard deviation in order to determine the extent to which consensus of customers on evaluated trait of services. The higher values scattering are caused by subjective requirements, attitudes and opinions of customers as well as the specific situation in the provision of the service, which is always unique. For example, the scope of the library's collection, which is rated by the lowest average value, variance is 0.94, which is quite high.

At the characters with the lowest standard deviation (0.70 qualification of the staff, 0.71 length of loan) answers are concentrated around the major diameter, thus customer reviews are largely consistent. It is at these characters the values of the average evaluation include the highest ones.

To the highest rated feature of services that relate directly to human resources, the staff qualifications include the value of 4.05 and helpful of the staff with a value of 4.24 out of 5, what is the highest rating of all the criteria assessed. Based on these results, we can conclude that the human resources of the studied organizations, by their approach increases the overall assessment of a feeling of the customer satisfaction in the process of providing the service.

### 3.2 The evaluation of questionnaire by the correlation analysis

In the next part of the questionnaire assessment in the statistical analysis, we compiled a correlation matrix, where the number of columns and rows in the correlation matrix represent the individual questions in the questionnaire. By the correlation analysis, we found that the values of variables mutually correlate, respectively do not correlate, thus the more value closes to  $\pm 1.00$ ; the close of the correlation is higher.

The Table 2 shows the calculated values of the correlation coefficients, wherein the positive value of the correlation coefficient indicates that there is a linear relationship and on the other hand, a negative value indicates a non-linear dependence. The table below shows statistically significant correlation coefficients highlighted.

Table 2. Correlation coefficients

Questions	1	2	3	4	5	6	7	8	9	10	11
1	1,00										
2	0,39	1,00									
3	<b>0,56</b>	0,30	1,00								
4	0,49	0,41	0,31	1,00							

<b>5</b>	0,32	0,02	0,22	0,41	1,00						
<b>6</b>	0,41	0,37	0,11	<b>0,55</b>	0,48	1,00					
<b>7</b>	0,32	0,35	- 0,14	<b>0,55</b>	0,15	<b>0,62</b>	1,00				
<b>8</b>	0,22	0,19	0,26	0,33	0,32	<b>0,52</b>	0,01	1,00			
<b>9</b>	0,15	0,16	0,17	0,21	0,02	0,23	0,06	<b>0,54</b>	1,00		
<b>10</b>	0,43	0,11	0,28	0,20	0,34	0,48	0,20	0,36	0,19	1,00	
<b>11</b>	0,39	0,07	0,30	0,15	0,32	0,24	0,06	0,20	- 0,09	0,24	1,00

In Table, we highlight 6 statistically significant dependencies between eleven features of the information services quality. Based on the results of the correlation analysis we determined the dependence between the first and the third sign of the value of 0.56. This is dependence between the opening hours and the length of loan. In the both cases it is about the time criterion of possibility of obtaining and using of the information resources. The average score achieved both of the characters quite high, and that 4.00 and 4.08 points on a 5-point scale assessment. The second significant dependence with a value of 0.55 was demonstrated between 4th (range of library collections) and 6th sign (number of information retrieval). In both cases, obtaining information for customers in different ways, or even adding one form of another. Another dependency with a value of 0.55 exists also between 4th (range of library collections) and 7th feature (availability of literature in the reading). There is a logical dependence; the extent of the library's collection depends on the availability, quantity and timeliness of the literature in the study rooms. Statistically significant correlation dependence was also reflected between 6th (number of information retrieval) and 7th (availability of literature in the reading rooms) with the value of dependence of 0.62. Again this showed dependence between the characters that directly evaluate the possibility of obtaining the information in the institution. Slightly lower dependence 0.52, manifested between 6th and 8th characters, which represents the number of places to find information and staff professionalism. Customers show the need for professional assistance of the staff during searching for information (methodological guidance and assistance with orientation in internal and external databases), as well as frequent professional thematic consultations. The last statistically significant correlation dependence with a value of 0.54 is the 8th feature - competence of the staff and 9th feature (the behaviour of the staff). In both these characters customers evaluate staff in professional and cultural aspect. Both have an impact on the overall evaluation of the staff whose characters have reached the first and the third highest average values. Based on the results of the correlation analysis we can determine which service features correlate with each other. So we can assume that improving the quality of one character will also affect the rating with it correlating character.

#### 4. Conclusion

The questionnaire using a 5-point Likert scale contains assessing the performance of information services to customers in 11 characters of the quality of service. The performances of the services were evaluated using statistical analysis and correlation analysis. We can state that the technical dimension of service quality is evaluated on average, above is assessed a functional dimension of quality that enhances the overall average. As the lowest rated the criteria have the highest standard deviations, subjective evaluation demonstrates attitudes and individual requirements and demands of the customer for quality services. About the results of the research, it is important to inform all employees of the organization, whether they are direct or indirect in contact with the customer. To better inform is an appropriate graphical representation of results, place on the panel of internal notices, or to other visible place for continuous incentive to perform better. At low assess of the organization and low dispersion, customers agree on the evaluation and the need on the part of management to respond to the situation. Their determination is the most important for the organization of the management, because it is in these respects, it is necessary to do follow-up studies and analyses with appropriate methods to examine the causes of the condition. Based on the further results to determine the priority areas of individual solutions in organizations focused on continually improving the quality of services, and thereby increasing customer satisfaction and loyalty.

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