DETERMINATION OF USERS SATISFACTION LEVEL REGARDING THE QUALITY OF E-SERVICES PROVIDED BY "BOGDAN-VODĂ" UNIVERSITY

Sidonia Otilia Cernea [1]
Janetta Sîrbu [2]
Nicolae Mărginean [3]

ABSTRACT: The results of researches present in the specialized literature emphasize that the evaluation of both e-services and traditional services is based on the customers' individual experiences.
This paper presents a study conducted for evaluating the e-services provided by „Bogdan Vodă" University from an attitudinal perspective, based on 5 indicators of the services quality dimensions (tangibles, reliability, responsiveness, assurance and empathy).
The study was performed to establish the quality of the e-services provided by the university and whether these services influence the university image. Two basic, but well structured questionnaires were used in conducting this study: the first reflects the subjects' expectations and the second conveys their perceptions. Assuming that the most motivated evaluators of the quality of the e-services provided by the university are its own students, it has been chosen a sample of 70 „Bogdan Vodă" University juniors.
The indicators interpretation is made according to their values: 0 meaning the satisfactory level of the e-services and dimensions quality, the positive values indicating a higher than expected service quality while the negative values translate into lower than expected service quality.

Key words: quality, e-services, expectations, perceptions, users, dimensions, indicators.

JEL codes: L15, L86, M15

Introduction

The results of researches present in the specialized literature emphasize that the evaluation of both e-services and traditional services is based on the customers' individual experiences.

Closely related to improvement of the e-governance services and performance management within public administration, the e-services quality shows potential for providing strategic benefits, operating efficiency and profitability (Balog and Ivan, 2006).

The evaluation of e-services quality can be performed from an attitude or behaviour approach, thus resulting a series of evaluating and measuring methods (Bădulescu, 2008).

Current stage of researches

E-service concept

Although the e-services have grown in popularity starting with the Internet proliferation, in the specialized literature there are few related papers.

The e-service definitions are various, but all lead to the idea that the e-services are Web services, provided via Internet, within the customers-suppliers interaction and communication is run through technology (e.g. Web sites).

[1] "Bogdan Vodă" University of Cluj-Napoca, e-mail: sidonia.cernea@ubv.ro
[2] "Bogdan Vodă" University of Cluj-Napoca, e-mail: janeta.sirbu@ubv.ro
[3] "Bogdan Vodă" University of Cluj-Napoca, e-mail: nicu.marginean@ubv.ro

According to Rust and Kannan (Rust and Kannan, 2002), the e-services concept is located at the confluence of re-orientation of the new economy more to the services and less to the products and the rapid expansion of information and electronic networks, these services being both external (management services, informing services and data processing services) and internal (at intra-organizational level, each cell or department can be represented as a customer of another cell or department).

E-services represent one of the most important e-business that provides new opportunities and the possibility of luring and satisfying the customers (Vultur, 2008). The main advantage of e-services compared to the traditional ones consists of the information availability (Kim et al., 2006).

The companies that provide such e-services plan on transmitting high values, building loyalties, encouraging repeated acquisitions and maintaining long term relationship with customers (Li and Suomi, 2007).

E-services quality

E-services quality covers various aspects of e-commerce Web sites and furthermore aspects of the clients experiences, including all phases of a Web site and its users interactions (Mekovec et al., 2007).

E-services quality can be defined as a Web site feature that efficiently and effectively facilitates the online auctions (Hadaya şi Éthier, 2008).

The e-services quality evaluation can be performed from two approaches: a behavior approach focusing on the Web site activity (number of users, number of accessed pages, session period) and an attitude approach (the evaluation starts with the users perceptions or is performed by experts) (Bădulescu, 2008).

In the literature, there have been made numerous efforts in order to discover the most important features and determining factors of e-services quality, which are referred to as e-services quality dimensions.

The various measuring and evaluating methods of e-services quality are based on the conceptual models, such as: SERVQUAL [10], SITEQUAL [17], WebQUAL/eQUAL [3], eTailQ [16], WebQEM [19]. The Parasuraman model for e-services quality evaluation emphasizes five differences within the process of providing services. The SERVQUAL method which serves as the background for the rest of e-services quality evaluation methods, consists of conducting surveys containing four-five questions for each dimension of quality, that is: tangibles, reliability, responsiveness, assurance and empathy [4], [2], [7], [14]. In the literature, there are some others dimensions of e-services quality evaluation: ease of use, customizing, security, technical support, ease of access, links, flexibility, esthetics, continuous improvement, communication, etc.

Although there is no established definition for the e-services quality, we can conclude that the users' evaluation of e-services quality is performed comparing the expectations versus perceptions: when the percepted quality exceeds the expected quality, the client is satisfied which assumes a high service quality. Otherwise, there is a lack of service quality.

Problem and hypotheses

The problem of e-services quality evaluation is wide debated, playing a key role in maintaining and luring new customers. In order to understand how the e-services quality directly influences the companies' success, it is necessary to analyze theirs key factors (Sukasame, 2005).

In this paper, we chose to determinate the way the e-services quality might influence the image and the success of "Bogdan Vodă" University via an attitude approach. Thus, we evaluated the perceptions of a group of students regarding the quality of e-services provided by the university web site (www.ubv.ro). Therefore, we proposed to analyze the five quality dimensions specific to the Parasuraman model: tangibles, reliability, responsiveness, assurance and empathy (fig. no. 1).

Tangibles

This dimension refers to physicals aspects of the services provided, such as: equipments, personnel and publicity materials (Bădulescu, 2008). Regarding the e-services provided by an university, we consider that the university web site needs to meet several essential criteria. Thus, the Web site interface has to be clear and easy to understand, the pages have to contain links to the home page and to indicate the user position within the Web site, and the Web site has to be attractive. The Web site map is an important element meant to assist the users.

Considering all these, we define the first hypothesis:

H.1 The technical functionality (tangibles) is a key factor of satisfying the users needs and thus, of the university success.

Reliability

The reliability is considered to be the most important dimension of all services, since it is related to the Web site tangibles (Parasuraman, 1998). This dimension emphasises the Web site availability and functionality as proper as possible. The university Web site represents its projection in the digital world, having an informative feature. Therefore, we consider that the information posted on the Web site have to match the real one, be available 24 hours, satisfy the users needs and least but not last it is necessary the existence of confidence that the requested information will be provided.

Considering all these, we define the second hypothesis:

H.2 The reliability is a key factor of satisfying the users needs and thus, of the university success.

Responsiveness

The responsiveness is one of the services quality dimensions referring to the readiness of e-services providing and the companies ability to manage the complaints and assist the customers (Sukasame, 2005); (Bădulescu, 2008). In the evaluation process of the quality of e-services provided by the university, we considered essential the readiness of the information provided, the availability of the personnel to the users requests and least but not last the existence of an openness to the users suggestions and complaints, whenever the situation.

Considering all these, we define the third hypothesis:

H.3 The responsiveness is a key factor of satisfying the users needs and thus, of the university success.

Assurance

This dimension of the e-services quality refers to the companies' ability to convey and inspire confidence and also to the competence and features of the employees, such as honesty and respect (Bădulescu, 2008). In regards to the university, all these would reflect in good reputation, correctness and completeness of the information provided and the assurance of users' logins security.

Considering all these, we define the fourth hypothesis:

H.4 The assurance is a key factor of satisfying the users needs and thus, of the university success.

Empathy

The addressing manner of the university personnel, the importance asserted to each user, the ease of contact and communication, in other words the empathy, represent another indicator of the quality of the information providing services (Bădulescu, 2008); (Shachaf and Oltmann, 2007). Thus, from the users' perspective it is very important that the services to be flexible in order to match their programs, the personnel to be able to offer alternatives as potential solutions to the users requests and questions and, least but no last, the contact to be easy to establish via phone, fax, e-mail.

Considering all these, we define the third hypothesis:

H.5 The empathy is a key factor of satisfying the users needs and thus, of the university success.

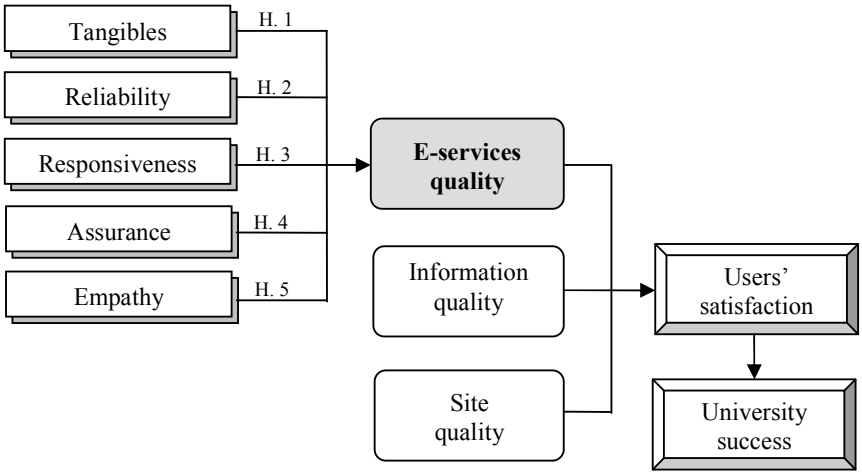

Fig. no. 1 – The influence of the five dimensions in the establishment of the e-services quality

Methodology

This paper presents a study conducted for evaluating the e-services provided by „Bogdan Vodă" University from an attitudinal perspective, based on 5 indicators of the services quality dimensions.

The study was performed to establish the quality of the e- services provided by the university and whether these services influence the university image.

The instrument

There is an instrument often used in the surveys, that is the questionnaire and that we also considered. Thus, it has been opted for two simple, clear structured questionnaires, applied on a sample meant to assure a reasonable representativity for the targeted evaluations (Rotariu and Iluţ, 2001). First questionnaire reflects the expectations of respondents, which have to evaluate the degree the e-services provided by the university should meet the specified quality attributes. In the second, the respondents have to evaluate the manner in which they perceive in reality these services.

In filling out the questionnaires, the respondents marked each attribute, on a five intensity degree Likert scale. The highest mark (5) was given if the attribute was considered essential for the quality degree, and the lowest mark (1) was given if the attribute was found as being irrelevant for the quality degree.

It has been established a total of 20 questions for each of the five quality dimensions, used to evaluate the expectations and perceptions related to the e-services provided.

The procedure

Assuming that the most motivated evaluators of the quality of the e-services provided by the university are its own students, it has been chosen a sample of 70 „Bogdan Vodă" University juniors. The questionnaires were distributed in a paper format, along with filling out instructions and explanatory notes regarding the attributes meaning, as in table below:

Table no. 1

The questionnaires distribution per majors and gender

(Cluj-Napoca and Baia Mare)

CLUJ-NAPOCA							
Management		**Finances-Banks**		**Accounting**		**Economic Informatics**	
Females	Males	Females	Males	Females	Males	Females	Males
7	7	5	5	5	5	3	3
Total 14		Total 10		Total 10		Total 6	
Total Cluj-Napoca **40**							
BAIA-MARE							
Law		**Management**		**Sports**			
Females	Males	Females	Males	Females	Males		
5	5	5	5	5	5		
Total 10		Total 10		Total 10			
Total Baia-Mare **30**							
Total of students 70							

In order to calculate the e-services quality indicators for each established dimension, it has been proceeded as follows:

- for each dimension attribute, the grades given by the respondents were summed up;
- the indicator of a dimension quality was calculated using the following formula:

$$CD_j = \frac{\sum_{i=1}^{n_j} (P_{ij} - A_{ij})}{n_j}, \qquad (1)$$

where, CD_j – the service quality for dimension j, $j = \overline{1,5}$;

P_{ij} – the perceptions for attribute i of dimension j, $i = \overline{1,20}$; $j = \overline{1,5}$;

A_{ij} – the expectations for attribute i of dimension j, $i = \overline{1,20}$; $j = \overline{1,5}$;

n_j – the number of attributes of j dimension.

- the indicator of the e-service general quality was calculated as follows:

$$CS = \frac{\sum_{j=1}^{5} CD_j}{5} \qquad (2)$$

The indicators interpretation

The interpretation of the indicators previous calculated is being performed based on their values, that is:

- zero value represents a satisfactory level of the dimension and e-service quality;
- positive values indicate a higher than expected e-service quality;
- negative values reflects a lower than expected e-service quality.

Results

The data collected from the questionnaires was processed and interpreted, the results being presented both as a table and as a chart.

The following were concluded following the processing of questionnaires data applied to the Cluj - Napoca students (fig. no. 2):

- value 1.08 for the indicator of e-service general quality , meaning a higher than expected quality;
- regarding the first four dimensions of the e-service quality (tangibles, reliability, responsiveness and assurance), the students majoring in Economic Informatics were the most satisfied whereas the students majoring in Finances-Banks found the e-service of low quality;
- in regards to the empathy dimension, the most satisfied with are the students majoring in Economic Informatics, whereas the students majoring in Accounting are the most unsatisfied with.

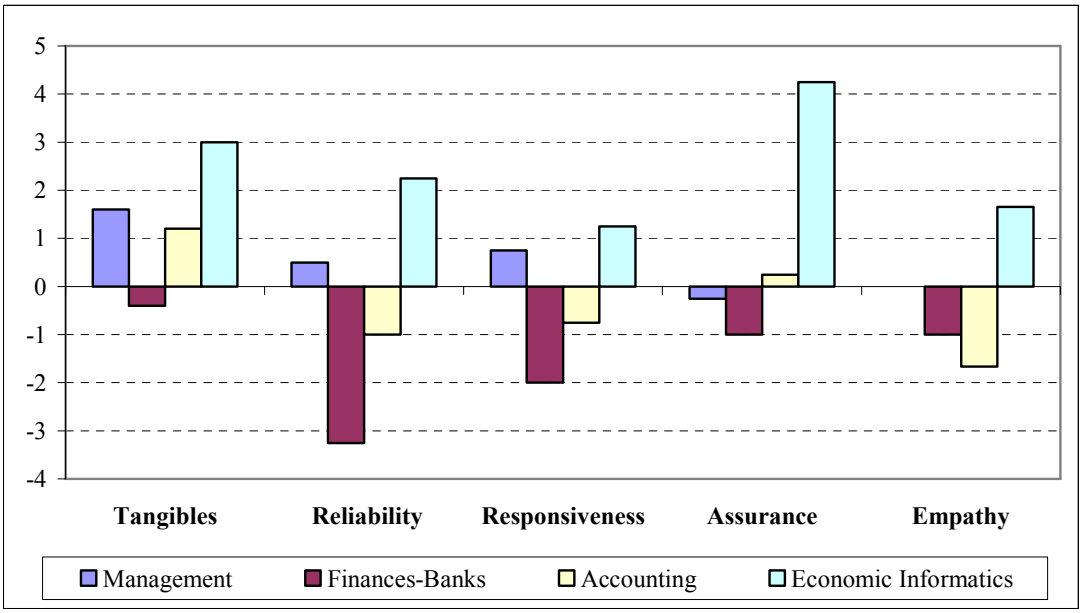

Fig. no. 2 – The quality report of the e-services dimensions per majors (Cluj-Napoca)

As it can be noted on the previous chart, the Economic Informatics is the only major with positive values for all indicators. We consider that this is due to the knowledge of this field that led to a better understanding of the terminology used in the questionnaires.

The following were concluded following the processing of data collected from the questionnaires applied to the Baia Mare students (fig. no. 3):

- value -14.06 for the indicator of e-service general quality, indicating a totally unsatisfactory quality;
- the only dimension of the e-service quality with a positive value is the responsiveness as per the students majoring in Management;
- the students majoring in Sports found the reliability as the most unsatisfactory dimension from the e-service quality perspective.

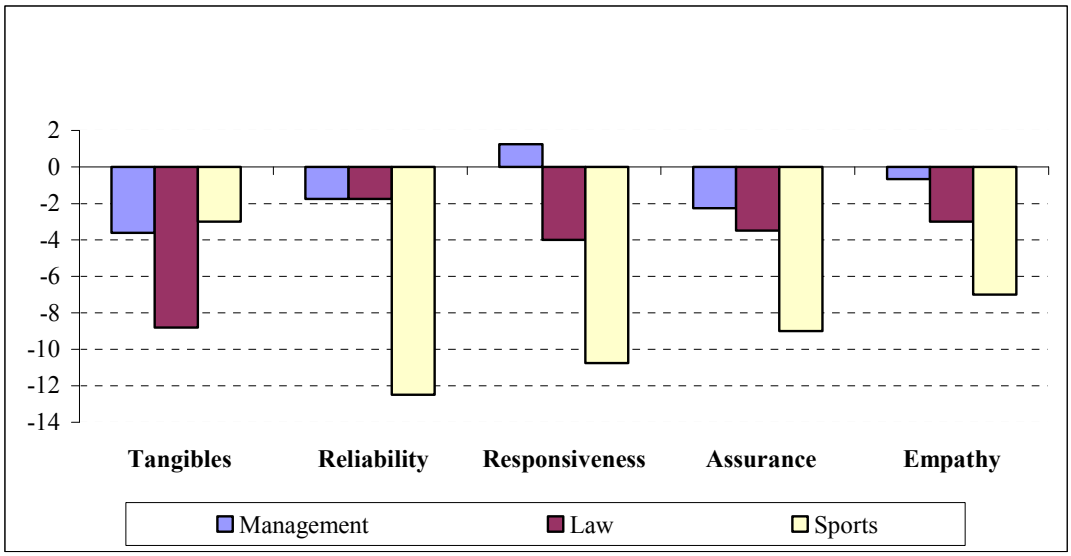

Fig. no. 3 – The quality report of the e-services dimensions per majors (Baia Mare)

The analysis of the questionnaires data in regards to the e-services quality per gender has the following results:

- Cluj-Napoca: the men better appreciate the e-services quality than the women who found the empathy and especially the reliability of e-services need improvement (fig. no. 4);
- Baia Mare: all indicators have negative values meaning that both men and women found the e-services provided by the university lack quality (fig. no. 5).

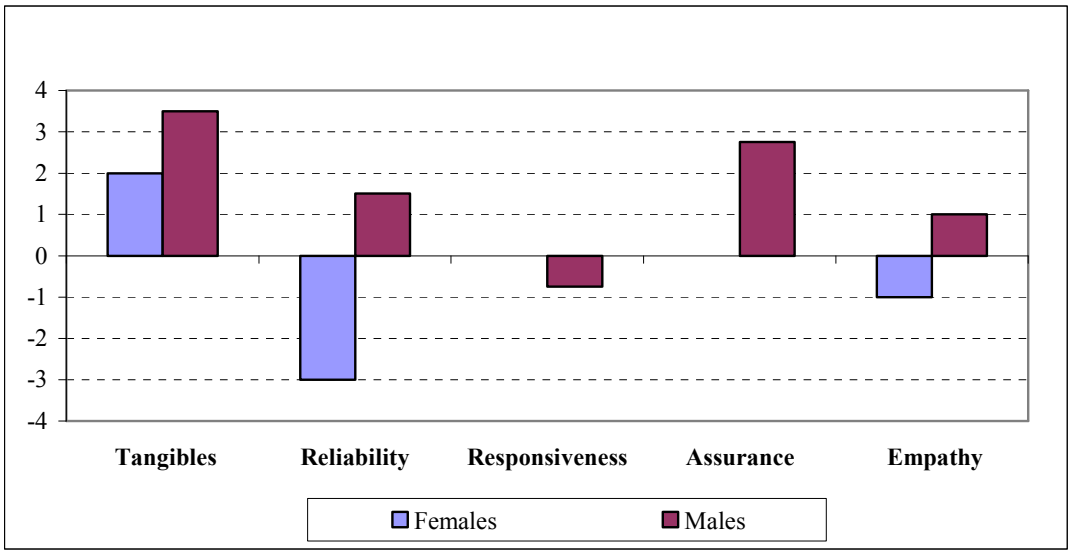

Fig. no. 4 – The quality report of the e-services dimensions per gender (Cluj-Napoca)

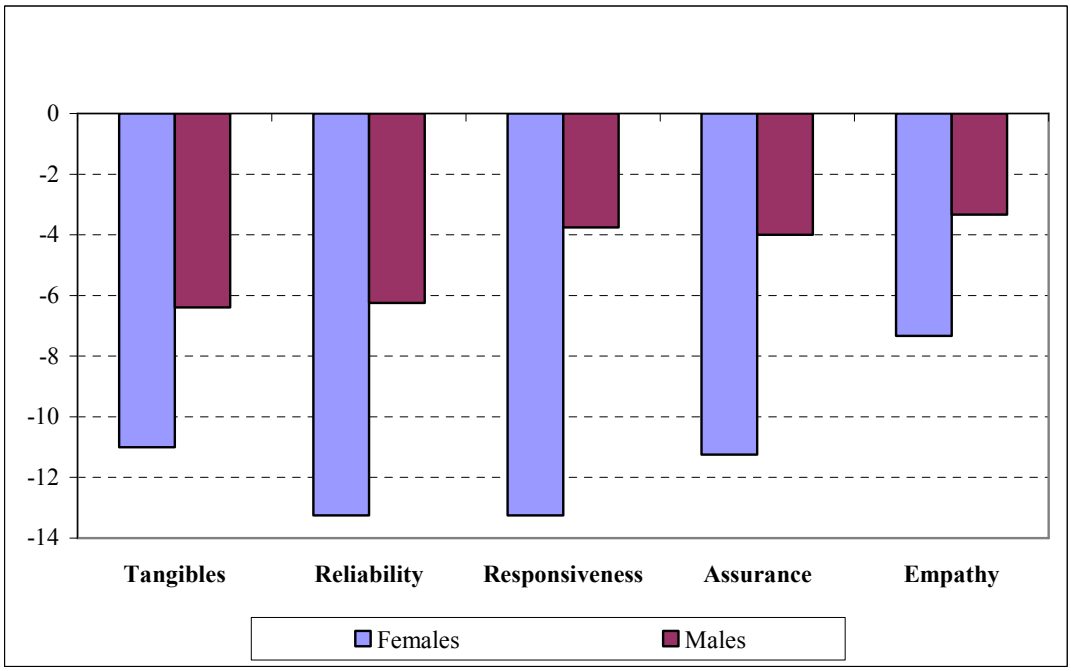

Fig. no. 5 – The quality report of the e-services dimensions per gender (Baia Mare)

The indicators of the e-services dimensions quality present both negative and positive values for Cluj- Napoca, and only negative values for Baia Mare (fig. no. 6)

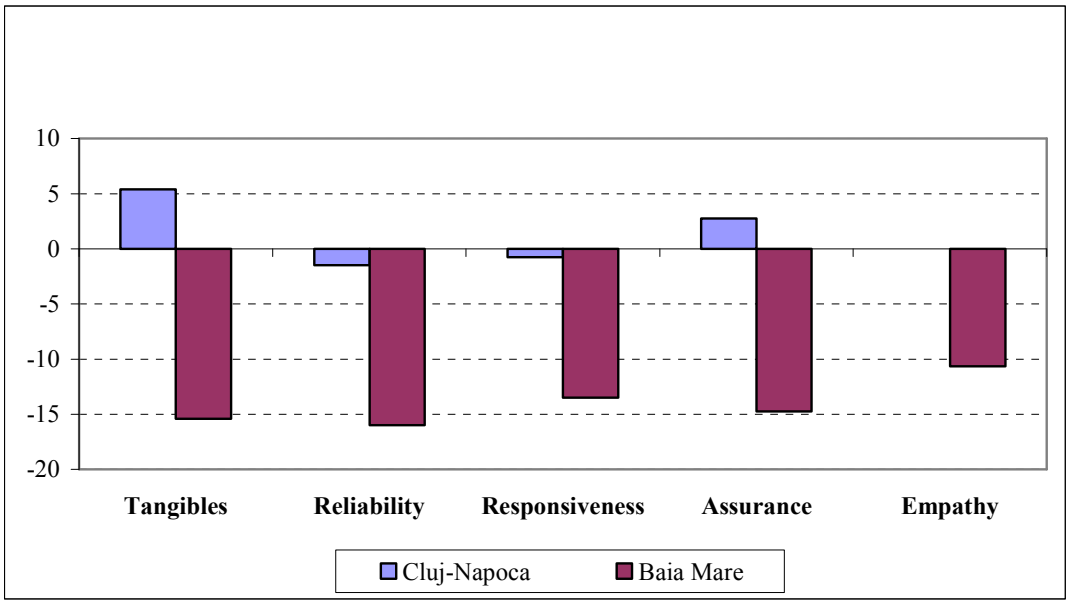

Fig. no. 6 – The quality report of the e-services dimensions per city

The indicator of the e-service general quality was computed for each city. Thus, it shows a higher value for Cluj Napoca, 1.18 which means that on the headquarter level the students are satisfied with the quality of the e-services provided. For Baia Mare, this indicator has an extremely low value, -14.06, suggesting that at the branch level the students are extremely unsatisfied with the quality of the e-services provided impacting the general quality at the university level. The negative value of -12.88 at the university level indicates a highly unsatisfaction level regarding the quality of the e-services provided among the students.

Conclusions

Following conducting these questionnaires among the university students, it has been found that the most unsatisfied students with the e-services quality are the ones from Baia Mare and within the Baia Mare students; the women show the lowest satisfaction level in regards to the e-services reliability and responsiveness.

At the headquarter level, the women are the most unsatisfied with the e-services quality, this applying especially to the e-services reliability.

Per major, the students from the Economic Informatics are the most satisfied. The next ones are the Management students (Cluj-Napoca), Accounting students, Management Baia Mare students, Finances-Banks students, Laws students and Sports students ranking the lowest.

Analyzing the scores for each attribute and dimension individually, we consider necessary to make the following recommendations:

- posting on each Web site page of a tree structure that allows the user to view his/her location within the Web site;
- updating the Web site content as fast as possible;
- the university staff as the responsiveness level to be increased;
- Creating a section dedicated only for the students from Baia Mare.

References

1. Balog, A., Ivan, I., 2006. "Cercetări privind evaluarea calităţii serviciilor publice on-line", *Revista Română de Informatică şi Automatică*, vol. 16, nr. 4, pp. 39-48;

2. Balog, A., Bădulescu, G., 2008. "Modele conceptuale ale calităţii serviciilor on-line", *Cercetări practice şi teoretice în Managementul Urban*, Anul 3, Nr. 8, pp.37-49;

3. Barnes, S., Vidgen, R., 2005. "Data triangulation in action: using comment analysis to refine web quality metrics", *Proceedings of the 13th European Conference on Information Systems*, Regensburg, Germany;

4. Bădulescu, R., 2008. "Metode de evaluare a calităţii serviciilor publice on-line", *Cercetări practice şi teoretice în Managementul Urban*, Anul 3, Nr. 8, pp. 57-83;

5. Hadaya, P., Éthier, J., 2008. "Online Purchasing of Simple Retail Goods: The Impact of e-Service Quality as Provided by Electronic Commerce Functionalities", *Proceedings of the 41st Hawaii International Conference on System Sciences*, pp. 31-40;

6. Kim, M., Kim, J., H., Lennon, S., J., 2006. "Online service attributes available on apparel retail web sites: An E-S-QUAL approach", *Managing Service Quality*, Vol. 16, No. 1, pp.51-77;

7. Li, H., Suomi, R., 2007. "Evaluating Electronic Service Quality: A Transaction Process Based Evaluation Model", Proceedings of ECIME 2007, *The European Conference on Information Management and Evaluation*, Montpellier, France, 20-21 September 2007, pp.331-340;

8. Mekovec, R., Bubaš, G., Vrček, N., 2007. "A Method For Improvement Of Objectivity Of E-Service Quality Evaluation", *Journal of Information and Organizational Sciences*, Vol. 31, No.2, pp. 15-27;

9. Olsina, L., Rossi, G., 2000. "A Quantitative Methodology for Quality Evaluation and Comparison of Web Applications", *SADIO Electronic Journal of Informatics and Operations Research*, Vol. 3, No. 1, October;

10. Parasuraman, A., Zeithaml, V. A., Berry, L., 1998. "SERVQUAL: A Multiple-Item Scale for Measuring Consumer Perceptions of Service Quality", *Journal of Retailing*, Vol. 64, No.1, Spring 1998, pp. 12-40;

11. Rotariu, T., Iluţ, P., 2001. *Ancheta sociologică şi sondajul de opinie: teorie şi practică*, Ed. Polirom, Iaşi;

12. Rust, R., T., Kannan, P., K., 2002. *E-Service: New Directions in Theory and Practice*, M. E. Sharpe;

13. Shachaf, P., Oltmann, S., 2007. "E-quality and e-service equality", *Proceedings of the Forty Hawaii International Conference on System Science (HICSS-40)*, Los Alamitos, IEEE Press;

14. Sukasame, N., 2005. "E-Service Quality: A Paradigm for Competitive Success of E-Commerce Entrepreneurs", *Proceedings of the 9th Pacific Asia Conference on Information Systems, Bangkok, Thailand*, 21, pp. 354-356;

15. Vultur, S., O., 2008. *Sisteme de afaceri pe Internet*, Ed. Risoprint, Cluj-Napoca;

16. Wolfinbarger, M., Gilly, M. C., 2003. "eTailQ: Dimensionalizing, measuring and predicting retail quality", *Journal of Retailing*, Vol. 79, No. 3, pp. 183-198;

17. Yoo, B., Donthu, N., 2001. "Developing a scale to measure perceived quality of an Internet shopping site (SITEQUAL)", *Quarterly Journal of Electronic Commerce*, Vol. 2, No. 1, pp. 31-46.