Mednarodno inovativno poslovanje
Journal of Innovative Business and Management

1.01 Original scientific article = Izvirni znanstveni članek

Student Satisfaction as a Performance Indicator of Higher Education Institution

Aleksandra Nastasić[1] Koviljka Banjević[2] Dragana Gardašević[3]

Abstract: Modern performance measurement systems include customer satisfaction as an important performance indicator. From the standpoint of the Higher Education Institution (hereinafter HEI) in Serbia, key performance indicators are quality indicators used to assess the current situation; to identify service failures and to take on service recovery; to improve total quality of the institution and to determine the future development of the institution. In increasingly competitive and dynamic educational environment, the management of a HEI is aware of the importance of student satisfaction in the context of student motivation and retention, recommendations to potential freshmen, recruiting efforts and funding, as well as performance management. There are numerous direct and indirect indicators of student satisfaction. The main objective of this paper is to identify the parameters of educational process and non-teaching support that have the greatest impact on student satisfaction. Data analysis, conducted in this paper, provide information on the degree of student satisfaction and possible improvements in this area. This study uses standard and hierarchical regression to examine possible causes of student satisfaction. It is based on answers of 1541 students of the College of Professional Studies – Belgrade Polytechnic, collected during a four-year research.

Keywords: performance indicators; student satisfaction; educational process; higher education; non-teaching support

JEL classification: I21, I23, C49

[1]Prof. Dr., College of Professional Studies-Belgrade Polytechnic, Katarine Ambrozić 3, 11000 Belgrade, Serbia, anastasic@politehnika.edu.rs

[2]Prof. Dr., College of Professional Studies-Belgrade Polytechnic, Katarine Ambrozić 3, 11000 Belgrade, Serbia, kbanjevic@politehnika.edu.rs

[3]Lect. Dr., College of Professional Studies-Belgrade Polytechnic, Katarine Ambrozić 3, 11000 Belgrade, Serbia, dgardasevic@politehnika.edu.rs

How to cite this paper = Kako citirati ta članek: Nastasić, A., Banjević, K., Gardašević, D. (2019). Student Satisfaction as a Performance Indicator of Higher Education Institution. *Mednarodno inovativno poslovanje = Journal of Innovative Business and Management*, 11(2), 67-76. DOI: 10.32015/JIBM/2019-11-2-8

Mednarodno inovativno poslovanje = Journal of Innovative Business and Management
ISSN: 1855-6175

Zadovoljstvo študentov kot kazalnik uspešnosti visokošolskih zavodov

Povzetek: Sodobni sistemi za merjenje uspešnosti vključujejo zadovoljstvo potrošnikov kot pomemben kazalnik uspešnosti. Ključni kazalniki uspešnosti s stališča visokošolske ustanove (v nadaljnjem besedilu: HEI) v Srbiji so kazalniki kakovosti, ki se uporabljajo za oceno trenutnega stanja; prepoznati napake v storitvi in obnoviti storitve; izboljšati skupno kakovost institucije in določiti prihodnji razvoj institucije. V vse bolj konkurenčnem in dinamičnem izobraževalnem okolju se vodstvo visokošolske ustanove zaveda pomena zadovoljstva študentov v okviru motivacije in zadrževanja študentov, priporočil potencialnim študentom, zaposlovanja in financiranja ter upravljanja uspešnosti. Obstajajo številni neposredni in posredni kazalci zadovoljstva študentov. Glavni cilj tega prispevka je določiti parametre izobraževalnega procesa in nepedagoške podpore študentom, ki najbolj

vplivajo na zadovoljstvo učencev. Analiza podatkov, opravljena v tem prispevku, zagotavlja informacije o stopnji zadovoljstva študentov in možnih izboljšavah na tem področju. Ta študija uporablja standardno in hierarhično regresijo za preučevanje možnih vzrokov zadovoljstva študentov. Temelji na odgovorih 1541 študentov Visoke škole za strukovne studije - Beogradske politehnike, zbranih med štiriletno raziskavo.

Ključne besede: kazalniki uspešnosti; zadovoljstvo študentov; izobraževalni process; visokošolska izobrazba; nepedagoška podpora

JEL klasifikacija: I21, I23, C49

1 Introduction

This study examines the influence of parameters of the educational process and non-teaching support on student satisfaction, since student satisfaction is recognized as a factor that influences on student achievements, motivation and retention, as well as on academic and business success of HEI.

The crucial activities in the processes of quality improvement and achievement of business excellence are reflected in developing and implementing the system for performance appraisal (Kanji, 1998;Striteska and Spickova, 2012), which from the perspective of continual improvements is the only logical approach associated with quality management (Spasojević Brkić et al., 2012). Therefore, HEIs must focus on systematic and continual improvements of overall performances as well as performances reviewing against the mission, vision, policies, strategies and objectives, at all levels and in all relevant processes and functions. Furthermore, the established management and control mechanisms allow the HE institution to measure the ratio of planned and actual results and investments necessary to achieve those results.

The HE system in Serbia has radically changed in the twenty-first century when Serbia joined the Bologna process. The HEIs faced with complex tasks that imply a total reconstruction of the existing system with the goal of reaching European standards in terms of availability, accessibility, quality, cost-effective education (Nastasić et al., 2011).

In the circumstances of reduction in the number of recruits, negative demographic trends, high dropout rates, increasing competitions, problems of financing etc., the students as direct customers of HE (Crawford, 1991, cited in Hill, 1995), are reasonably placed in the centre of the educational process, and "they act as the receiver and subsequent user of the educational services" (Marzo-Navarro et al., 2005a). Students first participate in the educational process and afterwards use skills, abilities and knowledge. In addition, students have become active participants in the process of quality assurance. The management of a HEI, teaching and non-teaching staff is forced to think differently about the importance of student satisfaction. They devote considerable attention to the factors that can help them to effectively attract and retain the best students and to create a supportive environment for learning (Banjević et al., 2014).

All the above strengthens the need for the continual measurement of student satisfaction. This research intends to examine variables that have the greatest impact on student satisfaction. In order to simplify this examination, the following research questions have been formulated:

Question 1: What is the contribution of the parameters of educational process to the student satisfaction with the overall quality of the institution?

Question 2: Which factor (educational process or non-teaching support) has greater contribution to the student satisfaction with the overall quality of the institution?

2 Literature review

In the literature, the most accepted performance measurement (hereinafter PM) systems are the Balanced Scorecard by (Kaplan and Norton, 1996) and the MBNQA and EFQM Business Excellence Models (Striteska and Spickova, 2012). However, selection of appropriate key performance indicators and methodology are important for the success of the

measurement and analysing process and should demonstrate the efficiency and effectiveness of the HEI. All the aforementioned PM systems include customer satisfaction, as a key performance indicator.

From the standpoint of the HEI, key performance indicators are quality indicators, used to assess the current situation of the business and to determine direction of future development. Standardization of key performance indicators is the basis of the HEIs ranking, comparing them from the perspective of different stakeholders and reaching conclusions about the overall state of HE (Maksimović, 2012). Performance indicators regarding students allow HEI to regularly monitor, understand, predict and improve service quality based on student performances ("the graduation rates, graduate destinations, learning outcomes, graduate capabilities, work readiness" (Coates, 2010)), and indicators of their perception of the institutional quality (the image of the institution, evaluation of service quality, loyalty, etc.). As student satisfaction varies over time, a proactive approach to the business requires systematic monitoring, measurement and analysis of direct and indirect indicators of student satisfaction.

Studies regarding the student satisfaction with educational services from the 1960s and early 1970s were mainly focused on the level of student satisfaction with different parameters; not on the causes of the satisfaction or lack of the satisfaction, and usually linked student satisfaction to their actual results (Bean and Bradley, 1986). Concerning the significance of students' results, surveys of student satisfaction have been directed to students' perception of overall parameters of institutional quality, with a primary goal to improve the quality of the educational services (Banjević et al., 2013).

Kotler & Fox (Kotler and Fox, 1995) believe that creating happy and satisfied customers "should be a primary goal, contributing to the quality of educational institutions". In addition, "the student satisfaction approach goes hand-in-hand with the development of a culture of continuous quality improvements" (Aldridge and Rowley, 1998; Harvey, 1995).

Elliot *&* Healy (Elliott and Healy, 2001) adapted the definition of satisfaction regarding students. The scholars indicated that student satisfaction is a short-term attitude that results from the evaluation of their experience with received education service as cited in (Marzo-Navarro et al., 2005a).Furthermore, student satisfaction refers to the favourability of a student's subjective evaluation of the various outcomes and experiences associated with education (Elliott and Shin, 2002).

Student satisfaction is a complex and multi-dimensional concept (Hartman and Schmidt, 1995). Although some authors analysed only determinants of teaching and learning quality (Guolla, 1999; Gursoy and Umbrei, 2005), while others examined the students' overall experiences with the full services of an institution (Aldridge and Rowley, 1998; Athiyaman, 1997; Harvey, 1995; Hill, 1995; Joseph and Joseph, 1997; Kwan and Ng, 1999; Leblanc and Nguyen, 1997; Toland and De Ayala, 2005; Marzo-Navarro et al., 2005a, 2005b). All of them had the aim to improve service quality, maximize the student satisfaction, commitment, loyalty, academic performances, enrolment and retention (Athiyaman, 1997; Elliott and Healy, 2001; Helgesen and Nesset, 2007), minimize dissatisfaction, "improve the institutional image and performance across a number of league tables" (James et al., 1999) and achieve business excellence.

It is noted that the support services differ from one education system to another according to the needs of a specific time and situation (e.g. support services to the educator, learners, and teaching activities and structures) (Mashauet al., 2008).

A service failure occurs when students are dissatisfied with service delivery system or when quality of service falls below their expectations. Therefore, HE institution must establish process of service recovery, by which identifies failures and causes of failures, and effectively resolves problems, which could impact on student satisfaction (Chahal and Devi, 2013).

3 Methodology

The process of measuring student satisfaction is conducted annually, based on the descriptive approach with the aim of obtaining answers about the current student satisfaction with parameters that specify the quality of service in Belgrade Polytechnic. The student satisfaction is measured in terms of the 10 parameters, that specify the quality of

educational process (teaching and learning; curriculum; academic staff; workspace; library and IT resources) and the quality of non-teaching support (information system; student services; faculty administration office; legal service and students participation in work of institution).

In order to obtain the data needed for this study, the original 46-itemquestionnaire was used. The students were required to mark the value of their satisfaction on a scale of 1-5 (1–not satisfied; 5–extremely satisfied). Reliability is assessed through its internal compliance, by calculating Cronbach's α coefficient. Nunnaly (1978) suggests the value of 0.7 for the lower band that is accepted by many other authors (Jiang et al., 2002; Johnson and Wichern, 1998). Reliability of the scale and reliabilities for the 10 parameters of the institution quality (Table 1 and Table 2), indicate good reliability and internal compliance of a scale.

Table 1: Reliability of the scale

Cronbach's Alpha	*Cronbach's Alpha Based on Standardized Items*	*N of Items*
0.891	0.899	10

Source: own calculation, based on a four-year research of student satisfaction of the quality of service in Belgrade Polytechnic

Table 2: Reliabilities for the parameters of the quality of institution

Parameter	*Number of respondents*	*Number of variables*	*Cronbah - α*
Quality of teaching and learning process	1505	8	0.834
Curriculum quality	1503	4	0.773
Academic staff	1517	3	0.795
Quality of the workspace	1489	5	0.769
Quality of library and IT resources	1428	8	0.867
Quality of the information system	1498	3	0.854
Quality of student services	1497	4	0.878
Quality of faculty administration office	1497	4	0.911
Quality of legal service	1468	4	0.906
Students participation in work of institution	1377	3	0.889

Source: own calculations, based on a four-year research of student satisfaction of the quality of service in Belgrade Polytechnic

In this study, we used the data based on measuring student satisfaction with these 10 parameters that determined the quality of the institution, in the period of 4 academic years. The sample included 1541 respondents – students of the first, second and third year of studies from eight study programmes of various scientific areas. In the period of collecting data, the population of Belgrade Polytechnic included approximately 2000 students. The sample size was determined with 95 % confidence level, i.e. 322 respondents.

4 Results

Each quality institution parameter is defined by a set of variables, through which students expressed their satisfaction. The value of each parameter was obtained as the mean of the certain variables. Quality institution parameters are considered as independent variables, while the quality of institution is seen as dependent variable.

Descriptive statistics (Table 3) was used to gain the mean, standard deviation, minimum and maximum for each quality parameter.

Table 3: Descriptive statistics of the educational process and non-teaching support

	N	*Minimum*	*Maximum*	*Mean*	*Std. Deviation*
1. Students participation in work of institution	1441	1.00	5.00	2.824	1.134
2. Quality of student service	1527	1.00	5.00	2.945	1.118
3. Quality of the workspace	1531	1.00	5.00	3.498	0.824
4. Quality of the information system	1527	1.00	5.00	3.580	1.064
5. Quality of legal service	1500	1.00	5.00	3.630	0.955
6. Quality of faculty administration office	1518	1.00	5.00	3.652	0.958
7. Curriculum quality	1532	1.00	5.00	3.690	0.796
8. Quality of teaching and learning process	1533	1.00	5.00	3.717	0.708
9. Quality of library and IT resources	1528	1.00	5.00	3.871	0.758
10. Academic staff	1531	1.00	5.00	4.002	0.764
Valid N (list wise)	1417				

Source: own calculations based on a four-year research of student satisfaction of the quality of service in Belgrade Polytechnic

The standard regression was calculated in order to answer the first question. Preliminary findings have proven that assumptions of normality, linearity, multicollinearity and homogeneity of variance were not violated. Obtained values of Pearson correlation of the overall quality of institution (dependent variable) and parameters of educational process (independent variables) were greater than 0.4 (Table 4). In addition, the values of tolerance and variance inflation factor indicate that there is no multicollinearity among independent variables (Table 6, column VIF).

Table 4: Pearson correlation coefficients of parameters of the educational process

		Quality of institution	*Quality of teaching and learning process*	*Curriculum quality*	*Academic staff*	*Quality of student`s workspace*	*Quality of library and IT resources*
Pearson Correlation	Quality of institution	1.000	0.762	0.729	0.688	0.717	0.683
	Quality of teaching and learning process	0.762	1.000	0.722	0.616	0.502	0.482
	Curriculum quality	0.729	0.722	1.000	0.546	0.486	0.448
	Academic staff	0.688	0.616	0.546	1.000	0.445	0.425
	Quality of the workspace	0.717	0.502	0.486	0.445	1.000	0.526
	Quality of library and IT resources	0.683	0.482	0.448	0.425	0.526	1.000
Sig. (1-tailed)	Quality of institution	.	0.000	0.000	0.000	0.000	0.000
	Quality of teaching and learning process	0.000	.	0.000	0.000	0.000	0.000
	Curriculum quality	0.000	0.000	.	0.000	0.000	0.000
	Academic staff	0.000	0.000	0.000	.	0.000	0.000
	Quality of the workspace	0.000	0.000	0.000	0.000	.	0.000
	Quality of library and IT resources	0.000	0.000	0.000	0.000	0.000	.

Source: own calculations based on a four-year research of student satisfaction of the quality of service in Belgrade Polytechnic

The value of R (91.4%) indicates excellent level of prediction of the parameters from the group 'a' of the quality of institution (Table 5). The corresponding regression model predicts 83.5% of the variance of the quality of the institution, which is very satisfying level.

Table 5: Total contribution of parameters of educational process on quality of institution

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.914[a]	0.835	0.834	0.26644

a. Predictors:(Constant) teaching and learning process quality, curriculum quality, academic stuff, workspace quality, library and IT resources quality
b. Dependent variable: Quality of institution

Source: own calculations based on a four-year research of student satisfaction of the quality of service in Belgrade Polytechnic.

Table 6 shows the individual contributions of independent variables (of educational process) on total student satisfaction. The value of the coefficient Beta shows the individual contributions of independent variables (of educational process) on total student satisfaction (Table 6). So, the parameter 'quality of workspace' contributes the most in explaining the value of depended variable - quality of institution (beta=0.283; $p<0.05$). However, students express very low level of satisfaction in relation to this parameter. Results of Part correlation coefficients (Table 4) indicate the contribution of each parameter of the educational process in the total variance of the quality of institution. According to (Tabachnick and Fidell, 2007), contributions of each independent variable were calculated by squaring Part correlation coefficients: quality of teaching and learning process 2%; curriculum quality 1.9%; academic staff 2.4%; quality of the workspace 4.9%; quality of library and IT resources 3.9% (Table 6).

Table 6: Individual influence of each parameter of educational process on total students' satisfaction

Model		Unstand. Coeff.		Stand. Coeff.			Correlations			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	-0.171	0.044		-3.868	0.000					
	Quality of teaching and learning process	0.209	0.015	0.226	13.484	0.000	0.762	0.327	0.141	0.389	2.571
	Curriculum quality	0.170	0.013	0.206	13.194	0.000	0.729	0.321	0.138	0.445	2.249
	Academic staff	0.177	0.012	0.206	14.997	0.000	0.688	0.359	0.156	0.575	1.738
	Quality of the workspace	0.225	0.011	0.283	21.308	0.000	0.717	0.480	0.222	0.617	1.619
	Quality of library and IT resources	0.212	0.011	0.246	18.925	0.000	0.683	0.437	0.197	0.646	1.549

Dependent variable: Quality of institution

Source: own calculations based on a four-year research of student satisfaction of the quality of service in Belgrade Polytechnic

The next step in the analysis involved evaluation of the model ability (parameters of educational process) to predict the result of student satisfaction with the quality of the institution, after removing the influence of variables of non-teaching support. In that way, hierarchical regression was applied. Model 1 includes the variables of non-teaching support, while Model 2 includes all parameters that contribute to institution quality (Table 7).

The unadjusted multiple R for Model 1 is 0.927 and the adjusted multiple R is 0.858 (Table 5), which indicates that a relatively great number of observations are being predicted with a relatively large number of variables. The unadjusted value of R^2means that all subsets of predictor variables will have a value of multiple R that is smaller than 0.927. Combination of these parameters significantly (Sig. F Change =0.000) predict student satisfaction. The results of R Square Change (Model 1 - 85.9%, Model 2 - 11.9%) indicate the contribution of both models to the total variance of student satisfaction with the quality of institution. This means that parameters of non-teaching support contribute 85.9% to the predictive capacity of the variance of the student satisfaction, while all parameters of institution quality have an increase by 11.9%. Therefore, the model predictive ability by including parameters of non-teaching support is greater than its predictive ability without these parameters. The obtained results have statistically significant contribution for both models $p<0.05$.

Table 7: The impact of variables of educational process and non-teaching support on total student satisfaction

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	0.927[a]	0.859	0.858	0.24481	0.859	2258.710	4	1486	0.000
2	0.989[b]	0.978	0.978	0.09731	0.119	1585.051	5	1481	0.000

a. Predictors: (Constant), Quality of teaching and learning office, Quality of technical support, Quality of student service, Quality of information system, Quality of legal service

b. Predictors: (Constant), Quality of teaching and learning office, Quality of technical support, Quality of student service, Quality of information system, Quality of legal service, Academic staff, Quality of the workspace, Curriculum quality, Quality of library and IT resources, Quality of teaching and learning process

c. Dependent Variable: Quality of institution

Source: own calculation, based on a four-year research of student satisfaction of the quality of service in Belgrade Polytechnic

Table 8 shows the contribution of each parameter to total variance of the dependent variable. The results of Beta coefficients for Model 2 show that the quality of student service (beta= 0.195) has the greatest contribution to total variance of the dependent variable (19.5%). Furthermore, regarding Table 8, column Sig., each parameter of the educational process significantly contributes in overall student satisfaction with the quality of the institution. This is due the fact that the nine independent parameters predict 97.8% of the Model 2 (Table 7).

Table 8: Individual influence of all parameters on quality of institution

Model		Unstand. Coeff		Stand. Coeff.	t	Sig.	Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	1.007	0.028		35.997	0.000					
	Quality of the information system	0.197	0.008	0.322	25.827	0.000	0.748	0.557	0.252	0.612	1.634
	Quality of student service	0.133	0.007	0.228	18.486	0.000	0.697	0.432	0.180	0.624	1.602
	Quality of faculty administration office	0.203	0.010	0.298	19.448	0.000	0.807	0.450	0.190	0.404	2.475
	Quality of legal service	0.193	0.010	0.284	19.803	0.000	0.769	0.457	0.193	0.463	2.162
2	(Constant)	-0.022	0.017		-1.339	0.181					
	Quality of the information system	0.101	0.003	0.165	31.311	0.000	0.748	0.631	0.121	0.543	1.843
	Quality of student service	0.114	0.003	0.195	39.397	0.000	0.697	0.715	0.153	0.610	1.639
	Quality of faculty administration office	0.105	0.004	0.155	24.501	0.000	0.807	0.537	0.095	0.375	2.666
	Quality of legal service	0.112	0.004	0.164	28.066	0.000	0.769	0.589	0.109	0.437	2.286
	Quality of teaching and learning process	0.117	0.006	0.127	20.018	0.000	0.763	0.461	0.078	0.375	2.668
	Curriculum quality	0.113	0.005	0.138	23.452	0.000	0.727	0.520	0.091	0.436	2.296
	Academic staff	0.095	0.004	0.111	21.373	0.000	0.682	0.486	0.083	0.554	1.804
	Quality of the workspace	0.117	0.004	0.147	28.806	0.000	0.713	0.599	0.112	0.576	1.736
	Quality of library and IT resource	0.114	0.004	0.131	26.434	0.000	0.680	0.566	0.102	0.609	1.642

Source: own calculations based on a four-year research of student satisfaction of the quality of service in Belgrade Polytechnic

5 Discussion and Conclusions

The results of this study lead to the conclusions as presented below. First of all, from the Table 3 could be observed that students express greater satisfaction with parameters of the educational process than non-teaching support. Thus, it is expected that parameters of the educational process have significant contribution to the overall student satisfaction, especially parameter academic staff which has the highest value of the mean. However, the results of standard regression didn't confirm previous assumption. In this regard, the parameter quality of student service was singled out as a variable with the greatest contribution on student satisfaction. The results of hierarchical regression suggest that the parameters of non-teaching support contribute with 85.9%, while the parameters of the educational process contribute with 11.9 % to the student satisfaction. The single parameter quality of student service has the greatest contribution, while the students express the lowest level of satisfaction in relation to this parameter. Finally, the obtained data point out the fact that some parameters of non-teaching support have a negative contribution to the overall student satisfaction with the quality of the institution. The main contribution of this study is reflected in the obtained results which suggest that students, in spite of importance of quality of educational process, perceive and emphasize the importance of quality of non-teaching services.

The findings in this paper have a wide range of implications, particularly for management, teaching and non-teaching staff. Therefore, the Belgrade Polytechnic has already undertaken some actions in the area of non-teaching support, such as the implementation of a more sophisticated ICT system, in order to improve support services. Now, students may accomplish most of the non-learning activities online and get information immediately. The teaching staff are able to finish administrative work from home (upload test/exam results, maintain student records, etc.). The workload of student service staff is reduced, and they have more time to respond in detail on students' questions/requests, face-to-face communication, etc. The future studies could examine changes in student satisfaction as after effect of the implementation of the new ICT system, including social networks– a comparative view of a traditional *vs.* modern approach. In addition, it could be interesting to explore the relationship between staff satisfaction and student satisfaction, motivation and retention and recommendations to potential freshmen retention; the influence of demographic parameters on student satisfaction, the influence of social networks on students' outcomes, etc.

Acknowledgments: Some parts of this paper have been presented at the 2nd International Scientific Conference on IT, Tourism, Economics, Management and Agriculture – ITEMA 2018 (http://www.itema-conference.com/).

References

1. Aldridge, S. and Rowley, J. (1998). Measuring customer satisfaction in higher education. *Quality Assurance in Education*, 6(4), pp. 197–204.
2. Athiyaman, A. (1997). Linking Student Satisfaction and Service Quality Perceptions: The Case of University Education. *European Journal of Marketing*, 31(7), pp. 528-540.
3. Banjević, K., Marković, S.and Gardašević, D. (2013). Zadovoljstvo zaposlenih u funkciji zadovoljstva korisnika: studija slučaja visokoškolske ustanove. *Zbornik radova II naučno-stručnog skupa Politehnika – 2013*, Beograd: VŠSS Beogradska Politehnika, pp. 133-139.
4. Banjević, K., Nastasić, A. and Dzeletović, S. (2014). Unapređenje kvaliteta u funkciji zadovoljstva korisnika: Studija slučaja visokoškolske ustanove. *Zbornik radova 15. Međunarodnog simpozijuma o kvaliteti: Kvaliteta, rast i razvoj*. Zagreb: Hrvatsko udruženje menadžera kvalitete, pp. 327-337.
5. Bean, P. J. and Bradley, K. R. (1986). Untangling the Satisfaction-Performance Relationship for College Students. *The Journal of Higher Education*, 57(4), pp. 393-412.
6. Chahal, H. and Devi, P. (2013). Identifying satisfied/dissatisfied service encounters in higher education. *Quality Assurance in Education*, 21(2), pp. 211-222.
7. Coates, H. (2010). Defining and monitoring academic standards in Australian higher education. *Higher Education Management and Policy*, 22(1), pp. 1-17.
8. Elliott, K. M. and Healy, M. A. (2001). Key Factors Influencing Student Satisfaction Related to Recruitment and Retention. *Journal of Marketing for Higher Education*, 10(4), pp. 1-11.

10. Elliott, K. M. and Shin, D. (2002). Student Satisfaction: An Alternative Approach to Assessing This Important Concept. *Journal of Higher Education Policy & Management*, 24(2), pp. 197-209.
11. Guolla, M. (1999). Assessing the Teaching Quality to Student Satisfaction Relationship: Applied Customer Satisfaction Research in the Classroom. *Journal of Marketing Theory and Practice*, 7(3), pp. 87-98.
12. Gursoy, D. and Umbrei, W. T. (2005). Exploring Students' Evaluations of Teaching Effectiveness: What Factors are Important? *Journal of Hospitality & Tourism Research*, 29(1), pp. 91-109.
13. Hartman, D. E. and Schmidt, S. L. (1995). Understanding Student/Alumni Satisfaction from a Consumer's Perspective: The Effects of Institutional Performance and Program Outcomes. *Research in Higher Education*, 36(2), pp. 197-217.
14. Harvey, L. (1995). Student Satisfaction. *The New Review of Academic Librarianship*, 1, pp. 161-173.
15. Helgesen, Ø. and Nesset, E. (2007). Images, Satisfaction and Antecedents: Drivers of Student Loyalty? A Case Study of a Norwegian University College. *Corporate Reputation Review*, 10, pp. 38–59. doi: 10.1057/palgrave.crr.1550037
16. Hill, F.M. (1995). Managing Service Quality in Higher Education: The Role of the Student as Primary Consumer. *Quality Assurance in Education*, 3(3), pp. 10-21.
17. James, R., Baldwin, G. and McInnis, C. (1999). *Which University? The Factors Influencing the Choices of Prospective Undergraduates.* Melbourne: University of Melbourne, Centre for the Study of Higher Education.
18. Jiang, J. J., Klein, G. and Carr, C. L. (2002). Measuring information system service quality: Servqual from the other side. *Mis Quarterly*, 26(2), pp. 145-166.
19. Johnson, R. A. and Wichern, D. W. (1998). *Applied multivariate statistical analysis* (5th ed.). Upper Saddle River, New York: Prentice Hall: xvi, pp. 816.
20. Joseph, M. and Joseph, B. (1997). Service Quality in Education: A Student Perspective, *Quality in Assurance in Education*, 5(1), pp. 15-21.
21. Kanji, G. K. (1998). Measurement of business excellence. *Total Quality Management*, 9(7), pp. 633-643.
22. Kaplan, R. S. and Norton, D. P. (1996). *The Balanced Scorecard: Translating Strategy into Action*. Boston, MA: Harvard Business School Press.
23. Kotler, P. and Fox, H. P. (1995). *Strategic marketing for educational institutions* (2nd Edition). Englewood Cliffs: Prentice Hall.
24. Kwan, P. Y. K. and Ng, P. W. K. (1999). Quality Indicators in Higher Education – Comparing Hong Kong and China's Students. *Managerial Auditing Journal*, 14(1), pp. 20-27.
25. Leblanc, G. and Nguyen, N. (1997). Searching for Excellence in Business Education: An Exploratory Study of Customer Impressions of Service Quality. *International Journal of Educational Management*, 11(2), pp. 72-79.
26. Maksimović, R. (2012). Performanse visokoškolske ustanove - osnova za rangiranje.*18. Skup trendovi razvoja "Internacionalizacija Univerziteta"* (Rad br. A2.2-1, 1-6). Kopaonik.
27. Marzo-Navarro, M., Iglesias, M. P. and Torres, P. R. (2005a). Measuring Customer Satisfaction in Summer Courses. *Quality Assurance in Education*, 13(1), pp. 53-65.
28. Marzo-Navarro, M., Iglesias, M. P. and Torres, P. R. (2005b). A New Management Element for Universities: Satisfaction with the Offered Courses. *International Journal of Educational Management*,19(6), pp. 505-526.
29. Mashau, S., Steyn, E., Van der Walt, J. and Wolhuter, C. (2008). Support services perceived necessary for learner relationships by Limpopo educators. *South African Journal of Education*, 28, pp. 415-430.
30. Nastasić, A., Banjević, K. and Dzeletović, S. (2011). Uspostavljanje sistema menadžmenta kvalitetom u funkciji ispunjavanja zahteva za akreditaciju visokoškolskih ustanova. *Zbornik radova I naučno-stručnog skupa, Politehnika 2011.* Beograd: VŠSS Beogradska Politehnika, pp. 163-170.
31. Nunnaly, J. (1978). *Psychometric theory*. New York: McGraw-Hill.
32. Spasojević Brkić, V. K., Milanović, D. D., Knežević, S. M., Lazić, D.S. and Milanović, T. S. (2012). *Sistem menadžmenta kvalitetom i poslovne performanse*, Beograd: Mašinski fakultet.
33. Striteska, M. and Spickova, M. (2012). Review and Comparison of Performance Measurement Systems. *Journal of Organizational Management Studies*, 2012, pp. 1-12.
34. Tabachnick, B. G. and Fidell, L. S. (2007). *Using multivariate statistics* (5th Edition). Boston, M: Allyn & Bacon/Pearson Education.

35. Telford, R. and Masson, R. (2005). The Congruence of Quality Values in Higher Education. *Quality Assurance in Education*, 13(2), pp. 107-119.
36. Toland, M. D. and De Ayala, R. J. (2005). A Multilevel Factor Analysis of Students' Evaluations of Teaching. *Educational and Psychological Measurement*, 65, pp. 272-296.