

MEASURING STUDENT SATISFACTION WITH THE QUALITY OF SERVICES OFFERED BY UNIVERSITIES – CENTRAL EUROPEAN VIEW

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Abstract

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The study aims to determine whether the criteria for measuring the satisfaction of students with the quality of universities are identical in the following five selected countries of Central Europe – Czech Republic, Germany, Poland, Austria, and Slovakia. A focus group technique was carried out at the first stage to identify possible factors (criteria) for measuring the quality of the services offered by university as perceived by students. Next, a questionnaire was designed to determine the key factors and their relevance for measuring the satisfaction of students. The result of the analysis of variance implies that the set of criteria is perceived in much the same manner in the countries in question. It is, therefore, possible to unify the application of the set of criteria in the countries to measure student satisfaction with the quality of universities. Further research after this study will focus on creating a methodology for measuring student satisfaction with the quality of universities mainly in view of the dynamic development of and global increase in the competition between universities in tertiary education.

measuring satisfaction, quality of services, universities, Central Europe

There have been major changes in tertiary education because of the dynamic development in this sector both in regional and global context. At present, universities are facing multiple challenges including, in the first place, the austerity measures adopted both by individual governments (Wong, 2004; Hopkins and Todd, 2012; Kula, 2008) and in a global context (Yang, 2003). The tertiary sector still braves changes in the financing of universities (Dearden *et al.*, 2012) as well as the unfavourable demographic shift in the European education space – the falling student numbers (Sojkin *et al.*, 2012; Hulík and Tesárková, 2009).

Not only for the above reasons, university managements try to take efficient measures to increase their competitiveness. Enhancement of the quality of services provided is an important factor in improving the competitive capacity of tertiary education reducing the risk perceived by the students wanting to study at and graduate from

a particular university (Světlík, 2009). Students are interested in studying at a university that can equip them with the qualities necessary to find a good job. Gbadosami and De Jager (2010) maintain that measuring and assuring the quality of services provided by such important stakeholders as students, staff, and employers is of key importance for universities.

Quality of the services provided by universities

The quality of the services provided by universities is among the most topical issues as evidenced by a large number of papers concerned with research in this area in various parts of the world. Voss *et al.* (2007) are concerned with the expectations students have of the quality of university services. They identify the qualities expected by students of a good teacher – expertise, accessibility, enthusiasm in teaching, excellent communication skills, etc. In their research, these authors compare the use

of two laddering techniques, (personal laddering interviews and laddering questionnaires), for analysing the quality of university services as viewed by students. In their paper, they conclude that using personal laddering interviews is a more suitable method mostly because the students' expectations can be identified in a more precise and clear way. In their paper (2009), Mertova and Webster focus on monitoring and assurance of quality at universities in England and Czech Republic pointing out that, despite the cultural and historical differences between both countries, they have many similar problems in common concerning the quality in tertiary education. In the first place, these include unequal values afforded to research and teaching in higher education and insufficient orientation towards change and innovations.

In Australia, these issues are investigated by Strikanthan and Dalrymple (2007), who draw attention to the fact that quality tertiary education is closely related to student transformation. Here, transformation is seen as a process of perfecting the students' abilities and skills for them to become professionals effectively contributing to the achievement of the objectives of their future employers. In this sense, quality is strongly tied with other stakeholders such as university employees and companies. Therefore, university employees keep improving processes related to student education. Employers are then interested in graduates from universities who are fit to work towards their companies' aims and objectives, etc. It follows from the results of the paper that, of a university, students mostly expect that it will endow them with quality education necessary for their future success.

Lai *et al.* (2012) direct their research towards the way the value of a university is perceived by Chinese students with the quality of the services provided being given by the key factors identified by this research. This paper also lists the factors very important for students in pursuing their future career.

A more comprehensive approach to quality and performance of universities is presented by Chen *et al.* (2009). Based on an analysis of evaluating factors originating in Europe, America, and Taiwan, they built an assessment system breaking down into eighteen dimensions and, further, into 78 indicators. This evaluation system is designed as a self-evaluating tool. By clear indicators, universities can measure the results of their performance and the system encourages them to develop a unique market niche. In this comprehensive evaluating system, customer satisfaction is taken for one of the lead indicators.

The quality of universities in South Africa is investigated by Gbadosami and De Jager (2010), who stress that research in this area should be focused on demographic and other differences related to the respondents' profiles.

Satisfaction with the quality of services provided by universities

Quality of services is closely related to satisfaction (Kotler *et al.*, 2007). By the results of their research, Cronin and Taylor (1992) prove that the quality of services is a precursor of customer satisfaction. In connection with marketing, the concept of customer satisfaction appeared in scientific papers as far back as the 1960's (Levitt, 1960; Keith, 1960). In the 1970's, 1980's, and 1990's, this topic was the subject of an increasing number of publications. In early 1990's, Peterson and Wilson (1992) estimated that the number of papers concerned with such problems exceeded 15,000. At the beginning of the third millennium, a paper by Parker and Mathews (2001) may be taken for groundbreaking. These authors draw attention to the fact that satisfaction may have different meanings depending on the purpose for which it is used. In marketing, Parker and Mathews point out two approaches to the definition of customer satisfaction. The first results in a definition by which satisfaction is seen as the result of consumption. The second one perceives satisfaction as a process.

In the literature, satisfaction with the services provided by universities is most often related to students. Many experts emphasise that tertiary education students should be seen as the clients of a university (Voss *et al.*, 2007; Cubillo, 2007; Ramachandran, 2010; Gruber *et al.*, 2010).

In the tertiary-education conditions, several methods, models, and tools exist for monitoring the satisfaction of customers, that is, students. Among the most important ones is, for example, the service-quality method referred to by the shorthand notation SERVQUAL (Parasuraman *et al.*, 1988). Cronin and Taylor (1992) wanted to offer an alternative to SERVQUAL. These authors designed a service-performance method dubbed SERVPERF, which is based on the measurement of performance (performance level). In their paper, Cronin and Tylor announce that they have managed to reduce the number of items used to measure the quality of services by 50% to 22 as opposed to 44 used by the SERVQUAL method. Firdaus (2006) modified SERVPERF to a higher-education-performance method (HEdPERF). In his paper, this author concluded that it is important to modify SERVPERF according to the industry. HEdPERF better accentuates the university environment. In their research, Senthilkumar and Arulraj (2011) focus on the determination of key factors within the Service Quality Measurement in Higher Education in India (SQM-HEI) model, which is concerned with the measurement of quality of the services offered by tertiary education in India. This model follows the perception by students exclusively in education. In their research, these authors conclude that the quality of services provided by a university are influenced by the following key factors – quality of teaching; university equipment; degree

programme scope. The authors see the jobs that the graduates are offered as an independent, key factor. Gruber *et al.* (2010) built a framework for the evaluation of the satisfaction with the university services of German students. Their research is based on data collected by a survey at a university. In their paper, these authors emphasize that a future research should concentrate on the evaluation of the university's other stakeholders, too. Astin and Antonio (2012) say that, for university students in the USA, the factors important for evaluating their satisfaction include campus social life, academic advising, financial aid, relevance of course work for everyday life, etc.

Munteanu *et al.* (2010) investigate common and different factors of perceiving the quality of degree programmes by students in Rumania. They point out that their results differ from those of other similarly studies from West-European countries. Their research implies that students with better study results perceive the quality of education in a way different from the way students with worse study results do. For better students, an important criterion is usually related with the library equipment, worse students, on the other hand, put more emphasis on communication with teachers, and the difficulty of examinations. Based on an enquiry carried out in the United Kingdom, Douglas *et al.* (2008) designed a model working with factors that are of the greatest significance for student satisfaction or dissatisfaction. The key factors leading to dissatisfaction include the approach of the teachers, their willingness to provide the students with help in their studies, level of communication, approach of the university management, material aspects such as the university equipment, team cooperation. The applicability of the knowledge and skills acquired factor was identified as a key one among those that bring student satisfaction. In their paper, Sojkin *et al.* (2012) point out that students are satisfied if the university provides a good quality and variety of course. The student satisfaction is also enhanced by teaching and research achievements of the teachers. On the other hand, García-Aracil (2008) list factors that lead to student dissatisfaction. These include lack of opportunities to participate in research projects, insufficient offer of study materials, and an opportunity to have an impact on university policy.

Central Europe

In its World Factbook (2012), the Central Intelligence Agency includes the following countries: Austria, Czech Republic, Germany, Hungary, Liechtenstein, Poland, Slovakia, and Switzerland. Experts see Central Europe as a region in which tertiary education has many aspects in common but which also has its specific features. This is evidenced by many authors. The common aspects include the history in the first place (Dobbins and Knill, 2009). The historical and political development is a key to a greater heterogeneity of

Central European universities as compared with universities in western Europe (Scott, 2002). Kwiek (2001) points out social and cultural aspects related to the transformation of tertiary education in the countries of Central Europe. This author emphasises the importance of the legislation framework in an ongoing transformation. Among the specific features of the Central European region is also the dramatic increase in the university student numbers from 1995 to 2004, when four Central European countries (Czech Republic, Hungary, Poland, and Slovakia) were rated as the absolute top by the OECD (Santiago *et al.*, 2008.)

At present, the number of students leaving secondary schools has been decreasing, which brings about more competition among a large number of universities (Kula, 2008). This problem concerns the Central European regions considerably, which, among others, is pointed out by the following papers (Hulík and Tesárková, 2009; Sojkin *et al.*, 2012).

Objectives and hypotheses

After detailed theoretical analysis of the problems and based on the results of the research published (see above), a research objective was formulated.

The study aims to determine whether the criteria for measuring the satisfaction of students with the quality of universities are identical in five selected countries of Central Europe.

In recent years, the offer of studies by renowned schools has also been extended to international students. In the time of progressing globalization, marketing of universities stressing student satisfaction is among the university management's priorities.

Thus, the research is concerned with an analysis of satisfaction measurement at selected universities in selected countries, focusing on the question as to whether a unified set of criteria for measuring student satisfaction can be applied in the selected countries. **In view of the above research objective, the following hypotheses have been formulated:**

H0 – No significant differences exist between the perception of the relevance of each criterion for measuring the satisfaction with services provided by university of a group consisting of students of different nationalities.

The alternative hypothesis to H0 is formulated as follows:

H1 – There are significant differences between the perception of the relevance of each criterion for measuring the satisfaction with the services provided by university of a group consisting of students of different nationalities.

Methods used and sample description

A pilot study was carried out at the first stage to identify possible factors (criteria) for measuring the quality of the services offered by university as perceived by the clients (university students). To this purpose, a method of focus group interviews was used in combination with the brainstorming

method. The controlled interviews were carried out with groups of 8 to 12 students. The students were from three Central European countries – the Czech Republic, Slovak Republic, and Austria. When repeating the interviews for the sixth and seven times, no new factors were identified. To confirm the previously determined data, two more interviews were still carried out. Thus, nine student groups participated in this enquiry. The student identified 47 possible criteria for quality measurement. They are listed in a table.

Next, a questionnaire was designed to determine the key factors and their relevance for measuring the satisfaction of students with the quality of services provided by the university. The questionnaire was written in English and was conceived for the respondent to be able to say whether he or she considers a given criterion relevant using a yes-or-no answer. If the respondent thought that a criterion was not relevant, the answer was assigned a value of 0, otherwise a value of 1 was used.

In the following phase, questionnaire survey was carried out with 584 students participating. A quota selection was selected to determine the research sample. The respondents were Bachelor's and Master's students from the Czech Republic, Germany, Poland, Austria, and Slovakia. The number of respondents was evenly distributed over all the countries. The sample consisted of 116 (19.8%) respondents from the Czech Republic, 114 (19.5%) from Germany, 114 (19.5%) from Poland, 118 (20.2%) from Austria, and 122 (20.8%) from Slovakia. A minimum number of 38 questionnaires (6.5%) were discarded due to incompleteness of data. After this reduction, the respondent numbers considered for further processing were the following: Czech respondents formed 18.6% of the sample, Germans 18.4%, Poles 17.8%, Austrians 19.3%, and Slovaks 19.1%. The total number of respondents whose questionnaire was analysed was 546. Men and women were represented evenly, 284 (52%) respondents were women and 262 (48%) men. The survey was done at the following universities: Czech Republic – Brno University of Technology, Masaryk University in Brno; Germany – Fachhochschule Jena, Universität Regensburg, and Ludwig-Maximilians Universität München; Poland – Jagellonska univerzita, AGH – Akademia Gorno – Hutnicza, and Uniwersytet Papieski; Austria – FH Wien-Studiengänge der WKW and WU – Wirtschaftsuniversität Wien, and Slovakia – Prešovská univerzita v Prešově.

RESULTS

Analysis of variance was used to test hypothesis at a significance level of $\alpha = 0.05$.

The arithmetic means of the respondents' answers for each criterion and country are presented in Tab. I. There were 47 criteria in the following five countries: Czech Republic, Slovakia, Poland, Austria, and Germany.

Next, for each level, the arithmetic mean was calculated for the country in which students study. Tab. III. shows the arithmetic means of all 47 criteria for each country.

Next, the factor influence was tested for significance (see Tab. III).

By the above test of the significance of the factor overall impact, a student's country of origin has no significant impact on the perception of each criterion's significance for measuring the student satisfaction with the quality of services offered by the university as the probability of the factor's significance is less than (see the probability column in Tab. III) the significance level chosen. Also, if the value of the quantile calculated is less than the critical value, the impact of the factor (country of origin) is insignificant.

By the results of the analysis, the null hypothesis H_0 stating that **there are no significant differences between the perceptions of the importance of each criterion for measuring the satisfaction with services provided by the university of students of different nationalities**, cannot be rejected.

At the last stage of the analysis, the ten criteria most important for the Czech students were compared with the importance of these criteria for students from other countries. The variance of the values achieved by the criteria investigated ranged between 0.67 and 0.97 (see Diagram 1).

DISCUSSION

The results of the present study summarize an analysis of the criteria for measuring the satisfaction with the quality of the services provided by the university in students of different nationalities from five European countries.

A valuable finding is that there are no major differences between the five countries so that the university management can adopt a similar marketing strategies towards the students from these five countries.

The comparison of the ten most important factors as seen by the Czech students with the significance of these factors for students from other countries brings a more detailed analysis. Although the differences between factors were not statistically significant, the fluctuations of criteria significance for students of different nationalities are worth noting.

For the Czech students, the most important criteria for satisfaction with a university is the *availability of study materials*, on a 0-to-1 scale (with 0 standing for quite unimportant and 1 for very important), this criterion reached a value of 0.93, as compared with the Polish students for whom this criterion was 0.71 and the German students with 0.75.

This correlates with the results of a study by García-Aracil (2008), by which it is the insufficient offer of study materials that leads to student dissatisfaction.

I: *The arithmetic means of the respondents' answers for each criterion and country*

Criterium	Czech	Slovakia	Poland	Austria	Germany
	Mean	Mean	Mean	Mean	Mean
Transport infrastructure in the city	0.833	0.956	0.759	0.853	0.817
Cultural life in the city	0.778	0.876	0.777	0.560	0.942
The prestidge of city	0.259	0.664	0.500	0.587	0.731
Costs of living in the city	0.843	0.832	0.821	0.725	0.808
Availability of optional courses	0.694	0.584	0.830	0.780	0.721
Availability of language courses	0.602	0.885	0.643	0.853	0.740
Possibility to study in a foreign language	0.546	0.841	0.563	0.514	0.673
Variety of degree programs and specialization	0.806	0.894	0.946	0.908	0.846
Level of theoretical teaching	0.731	0.628	0.830	0.706	0.683
Level of practical teaching	0.833	0.938	0.884	0.972	0.846
Possibility of individual course scheduling	0.796	0.841	0.545	0.881	0.442
Entrance examination appropriateness	0.583	0.664	0.786	0.569	0.356
Availability of study materials (electronic form)	0.926	0.894	0.705	0.844	0.750
Study format offered (daily. combined)	0.630	0.637	0.723	0.651	0.712
Appropriateness of course difficulty level	0.741	0.673	0.848	0.789	0.683
School fees	0.574	0.513	0.732	0.752	0.538
Approach of non-academic staff	0.500	0.646	0.500	0.385	0.490
Approach of academic staff	0.750	0.938	0.857	0.862	0.663
Professionalism of academic staff	0.833	0.850	0.929	0.890	0.760
Level of scholarship system	0.602	0.735	0.839	0.422	0.740
Foreign study options	0.787	0.894	0.768	0.679	0.587
Relationship with other students	0.889	0.920	0.741	0.706	0.875
Prestige of university	0.472	0.752	0.714	0.780	0.865
Tradition of university	0.250	0.239	0.536	0.569	0.596
Prestige of faculty	0.454	0.708	0.679	0.706	0.721
Tradition of faculty	0.287	0.354	0.545	0.450	0.510
Technical equipment	0.833	0.885	0.875	0.872	0.769
Information system	0.870	0.858	0.893	0.789	0.712
Faculty rooms and interior design	0.593	0.779	0.464	0.688	0.481
Services in the building	0.787	0.938	0.866	0.670	0.740
The quality of library and study rooms	0.898	0.805	0.839	0.752	0.712
Availability and quality of refreshment and catering services	0.806	0.584	0.696	0.706	0.567
Services for student	0.907	0.903	0.911	0.688	0.673
Accessibility within the faculty (elevators. toilets. barrier-free access)	0.796	0.867	0.857	0.633	0.654
Availability and quality of accommodation	0.639	0.876	0.830	0.606	0.731
Environmental aspects (waste sorting. furniture from recycled materials etc.)	0.500	0.708	0.313	0.248	0.356
Building surroundings - green spaces	0.704	0.584	0.607	0.505	0.471
Location and accessibility of the faculty	0.815	0.938	0.795	0.862	0.837
Provision of parking places	0.565	0.230	0.482	0.477	0.298
Availability of sports activities	0.593	0.460	0.652	0.624	0.567
Quality and availability of student organisations (clubs)	0.324	0.407	0.473	0.229	0.673
Quality of marketing communication	0.361	0.540	0.554	0.294	0.567
Graduate employability	0.870	0.956	0.884	0.963	0.875
Contact with graduates	0.583	0.566	0.580	0.229	0.558
Collaboration with private sector (offer of work placements in partner companies)	0.630	0.938	0.705	0.798	0.644
Research and development	0.620	0.699	0.571	0.440	0.750
Realization of faculty conferences	0.343	0.319	0.491	0.367	0.500

Source: own analysis

II: Mean value of 47 criteria for each country

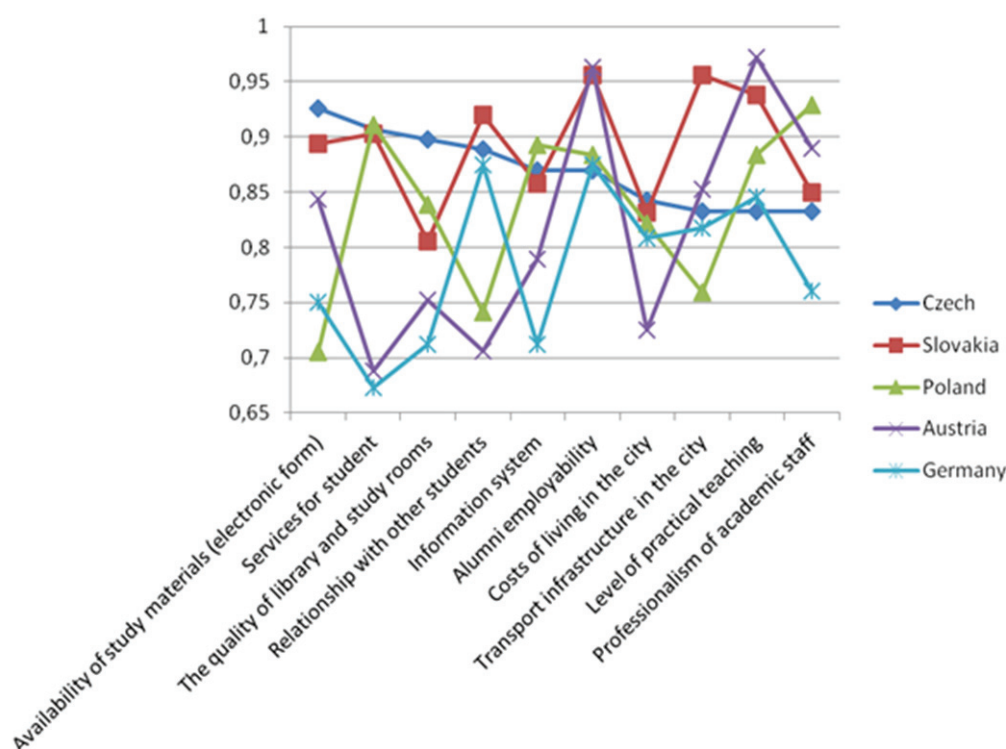
Country (factor levels)	Number of criteria	Mean level
Czech Republic	47	0.728
Slovakia	47	0.664
Poland	47	0.660
Austria	47	0.709
Germany	47	0.656

Source: own analysis

III: Testing the significance of the overall impact of the factor

Conclusion	Critical value	Result calculated	Probability
Insignificant	2.411	1.557	0.187

Source: own analysis



1: The difference in perceiving the criteria for students of the five countries whose value ranged between 0.65 and 1.00 (comparing the ten criteria most significant for the Czech students with students of the other countries)

Source: own analysis

For the *services for students* criterion, the students from the former communist countries formed a special sample subgroup rating this criterion more at 0.91 to 0.92 as compared with the German (0.67) and Austrian (0.69) students. A similar, even if not so marked, polarization could be observed for the *quality of library and study rooms* criterion which is seen as more important by the Czech (0.90), Slovak (0.81) and Polish (0.84) student than by the Germans (0.71) and Austrians (0.75).

The alumni of employability criterion proved to be important for all students with values between 0.86 and 0.96. The results further indicated that the *level of practical teaching* criterion is more important

for the Slovak, Polish, German, and Austrian than for the Czech students. It is mostly the Austrian students who value the *level of practical teaching* criterion (0.97).

Even though the differences between the criteria were statistically insignificant, which may have been caused by the particular sample taken being not be representative, the trends observed should still provoke some thought in people who set up the marketing strategies for universities so that they target the students' real needs and expectations depending on their country of origin. It is obvious that the historical experience which differs between former socialist and democratic countries influences

the preferences of criteria among students. Quality of library and study rooms, for example, which used to be on a significant lower level for many years for students from former socialist countries, is still perceived very important for these students compared to students from Germany and Austria.

Apart from the sample taken, the research results were no doubt influenced also by the method used, that is, a questionnaire survey. While making it possible to collect a large amount of data over

a short period, questionnaire surveys do not allow for analyses that are more detailed.

The present study is the first and basic summary of the research findings. Further studies that we prepare should elaborate on the present results. The differences will be analysed in detail between pairs of countries devising a marketing strategy for each university with respect to the students coming from the countries researched.

SUMMARY

The competition of universities in the European educational space has been on a continual increase. These institutions must react promptly to the ever-changing threats and opportunities in tertiary education. University managements must be capable of adopting efficient measures to enhance their competitiveness. The quality of services provided has a key role in this process. Therefore, it is necessary to monitor and analyse student satisfaction with the services offered by the university.

This study is concerned with issues related to measuring student satisfaction with the quality of universities in five Central European countries. Its aim was to find out whether the criteria for measuring student satisfaction with the quality of universities are identical in five selected Central European countries. Using analysis of variance, the null hypothesis that *there are no significant differences between students of different nationalities in perceiving the importance of the criteria for measuring the satisfaction with the quality of services offered by a university* was not rejected.

Thus, the analysis of variance implies that the set of criteria is perceived in much the same manner in the countries in question. It is, therefore, possible to unify the application of the set of criteria in the countries to measure student satisfaction with the quality of universities.

Further research after this study will focus on creating a methodology for measuring student satisfaction with the quality of universities mainly in view of the dynamic development of and global increase in the competition between universities in tertiary education. In conformance with this, the outlooks of further research may also include the measuring of satisfaction with the quality of services offered by universities by other key target groups.

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