

Quality of Education and Intellectual Capital: Analysis of the Competitive Position of Universities

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Abstract: *Intellectual capital opened the way for research into this area, which forms the basis of the new knowledge economy. The development of intellectual capital has a growing impact on the economic and social processes. Intellectual capital is now even more important than tangible assets. If a country wants to develop and become economically strong and enlightened it needs to build a modern and flexible and well suited and efficient education system that is ready and able to responses to all the global technological and social changes, as well as the local current social needs. To achieve this there is a need to establish institutional cooperation between universities, governments, research institutions. Education has a double meaning that is economic and social. It represents a means to improve economic standards as well to spread spiritual perspective and improvement of own intellectual and emotional life. Sociologically it is established that education is beneficial both for the individual and for society. Therefore, it not only contributes to higher profits for the individual, but also its better social status and reputation of the company, financial and social security, development of identity and self-confidence, self-esteem development and personal satisfaction, better understanding of the political situation and greater social engagement and cohesion, respect for social norms, reducing stereotypes and prejudice, improving gender relations and better education of children, development of tolerance and ethical behaviour, aspirations towards healthy living, and better physical and mental health. Investments in education are an important factor for competitiveness, growth and development of a country. Education has a key role in improving the human capital and the development of a knowledge based society. It contributes to the unification of life chances, personality development in the spirit of liberty, intellectual development and spiritual and cultural richness. The aim of this paper is to investigate connection between service quality and competitive position of Universities in Bosnia and Herzegovina to help developing new and improved academic programs that will contribute development of future strategies based on intellectual capital.*

Keywords: *Intellectual Capital, Quality of Education, Education System, Service Quality, Bosnia and Herzegovina*

JEL Classification: *O34, I2, M3*

Introduction

Over the last few decades, the quality of service has been gained and takes tremendous attention from both managers and academics due to their significant impact on business results, cost reduction, customer satisfaction and loyalty, as well as profitability. Therefore, quality is increasingly seen as an investment for a company or institution, where efforts to improve and improve it result in an increase in the number of customers (consumers), as well as increase the volume of purchases from existing customers, which also leads to growth of company profit.

To gain competitive advantage among other higher education institutions, universities require greater focus on service quality. Therefore, universities want and try to examine their current strategic positions by evaluating existing services and adapting to consumer perceptions to improve or gain their leadership position.

Intellectual capital (IC) opened the way for research into this area, which forms the basis of the new knowledge economy. The development of intellectual capital has a growing impact on the economic and social processes and now it is even more important than tangible assets. If a country wants to develop and become economically strong and enlightened it needs to build a modern and flexible and well suited and efficient education system that is ready and able to responses to all the global technological and social changes, as well as the local current social needs.

To achieve this there is a need to establish institutional cooperation between universities, governments, research institutions. Therefore, just defining and measuring service quality at universities can serve as an initial step towards more orientated and friendly education services for students, as well as improving the overall provision of services in educational institutions. This provides room for the establishment of clear consumer-oriented standards and the establishment of benchmarks for quality service comparison both in public and private universities. Education has a double meaning that is economic and social. It represents a means to improve economic standards as well to spread spiritual perspective and improvement of own intellectual and emotional life.

Literature review

European higher education and research organizations have undergone a deep transformation process over the past decades. This process can be analysed by considering two parallel processes.

The first process is the theoretical insight that provides two perspectives of evolutionary significance. These are the so-called two knowledge production methods (Gibbons et al., 1994) and the triple Helix model (Etzkowitz and Leydesdorff, 1996). Both perspectives emphasize the emergence of a new paradigm of knowledge production that is defined by transdisciplinary and research-oriented solutions. In this scenario, the relationship between university, industry and government becomes more dynamic and mutually dependable and conditioned, thus contributing to the creation of hybrid organizations, the creation of alliances between universities and firms, and the creation of a trilateral network and other forms of cooperation that enhance the quality of education. Therefore, universities themselves are interacting with various alternative knowledge producers (Gibbons, 1998, p.1). This framework is most commonly accepted in professional literature and has become crucial for understanding the role of universities and their connection with other actors in the current economy (Mowery and Sampat, 2004).

The second process is an ever-growing interest in higher education institutions and intensive discussions about the role they play in the paradigm shift. This process is primarily represented by the European Commission's (2006) policy actions and the resulting collective process in some institutions such as the European Association of Universities (EUAs), the European Association of Managers and Research Administrators (EARMA), as well as individual groups of experts, such as the group responsible for reporting on intellectual capital to increase research, development and innovation in small and medium-sized enterprises (RICARDIS report).

Adaptation of management and reporting of IC in companies to other types of organizations developed in two different ways. First, it primarily deals with the assessment of intangible assets aggregated into the mezo (communities, industry, etc.) and at the macro level (cities, regions and nations). Thus, the World Bank has organized various conferences on this issue in the period 2005-2007. (Chatzkel, 2006). Since 1999, efforts have been made to measure the state-level IC, starting with Sweden (Rembe, 1999), Israel (Pasher, 1999) and the Arab region (Bontis, 2004), and so on.

Another way suggests the use of IC framework at the micro level for public institutions. Some papers involved in this group are based on the principles of new public management. These principles have been used by governments since the 1980s to improve the efficiency of the public sector and the quality of their services, through the decentralization process and the application of competition, by treating consumers of public services as consumers. In this way, governments give a certain institution more autonomy to fulfil its goals and reward the effect (Borins, 1995), which requires measurement and reporting mechanisms, in accordance with appropriate revision rules. This phenomenon was initially seen as a problem for developed countries, particularly Anglo-Saxon, with best case studies in Great Britain, Australia and New Zealand (Barzelay 2001, Guthrie et al., 2004). USA, Canada and, to a lesser extent, some European countries have caught their attention (Borins 2002, Guthrie et al., 2004), and the principles are provisionally applied in some African developing countries (Larbi, 1999).

This paper shares the same opinion and agrees with the views of Mouritsen et al. (2005) and Leitner et al. (2005) in the sense that the IC framework is a valid attempt to meet the new demands of public institutions and that the IC report is useful tool for internal and external purposes. The IC report can help identify structural and personal strengths and weaknesses. It discovers the current state of the various university missions and can be used as a control and monitoring instrument (Altenburger and Schaffhauser-Linzatti, 2006).

The purpose of the ICU report, which is also an integral part of the OEU project, is to make recommendations for publishing university research information. In accordance with the recommendations of the European Commission (2006), the report presents a logical shift from management and internal strategy, based on the design of the vision and objectives of the institution, to the publication of indicators considering the previous guidelines valid for companies (Meritum Protect, 2002), and for the universities (Leitner and Warden, 2004).

The indicators have classified the next well-known taxonomy into three categories of capital, namely human, organizational and relational capital. Within each of these categories, each title monitors the strategic issues defined in the OEU guide. The guide itself suggests that indicators are expressed both in absolute and relative terms to make easy comparisons easier.

University rankings

Over the last ten years there has been an increasing interest in ranking the university. The annual ranking of world universities is published by many, starting with QS for the Times Higher Education Supplement, the Shanghai Jiao Tong University, the Higher Education and Accreditation Council of Taiwan, and Cybermetrics Lab in CSIC.

The Academic Ranking of World Universities (ARWU) is being published each year by the Shanghai Jiao Tong University of Higher Education Institute. This is the first level of ranking with the intent of worldwide coverage based on the academic or research effectiveness of the university. Its indicators include alumni and staff that received Nobel or similar prestigious awards, highly quoted researchers in popular research fields, articles published in selected top magazines, indexed index articles by Thomson-ISI, and performance by academics.

The Web Ranking of World Universities or Webometrics List is being conducted since 2004 (Aguillo et al, 2008) by Cybermetrics Lab, a research group of the Spanish National Research Council (CSIC). They use web data downloaded from commercial search engines, including web pages, rich format documents (pdf, doc, ppt and ps), works indexed by Google Scholar (this indicator was added in 2006) and many external links as a measure Link visibility or impact.

Table 1: Different emphasis of different university rankings

Orientation to students			Orientation to Research		
US News & WR McLeans	THE-QS	Webometrics WR	Shanghai ARWU	Taiwan HEEACT	Leiden CWTS
Costs	Scientific contribution	Web visibility	Impact		
Opinions			Awards	Impact	
Services	Prestige	Web presence	Excellence		

Source: Authors' own work

The specifics of university rankings are shown in Table 1. As can be seen, certain rankings are strictly based on research data. Webometrics, on the other hand, has one weakness, and many universities do not have a strict web policy. This is not such a big deal with the universities in this research, so this weakness may be neglected.

Compared to the indicators of intellectual capital of higher education institutions and ranking of universities, we conclude that there are common indicators. Therefore, as part of this research, the Webometrics list will be used as the rank of success of the tested universities and their competitiveness on the market of Bosnia and Herzegovina. Their position will be tested and compared with their perceived quality of service.

Service Quality

There is a lot about service quality in the literature itself. We have many quality definitions as well as its concept and its different dimensions. Thus, according to Juran (1988), quality is a convenience for use, that is, to what extent the product successfully serves the purpose of the user when used. Crosby (1982) argues that quality is in line with requirements. Gronroos (1984) is one of the first academics to focus on quality of service. According to him, the quality of service consists of two dimensions, technical quality and functional quality. Technical quality refers to the outcome, that is to what the customer has received from the service itself and can be measured in a similar way as the quality assessment of the product. On the other hand, functional quality refers to the process of evaluating the way of providing services. Image is an important factor affecting the service quality, and serves as a filter in perceiving quality of service as favourable, neutral or unfavourable (Gronroos 1984, 2000).

In a sophisticated 1988 study, Parasuraman et al. have reduced the original number of service quality dimensions from ten to five, claiming that these five dimensions fully cover the domain of service quality. Thus, the five factors of quality of service, according to Parasuraman et al. (1985) are:

- Tangibles - the physical dimension of a service, such as state of the building, equipment, staff appearance, and the like.
- Reliability - the ability to deliver the promised service, reliably, accurately and on time.
- Responsiveness - willingness and willingness to help customers and provide fast service.
- Assurance - knowledge and kindness of employees and their ability to inspire and stimulate trust and confidence.
- Empathy - attitude, individualized relationship, and attention paid by the company towards its customers (customers).

Parasuraman et al. (1988) have also developed a service quality assessment tool called SERVQUAL, which is a multifaceted scale with good reliability and validity. The scale consists of two parts evaluating the quality of the service. The first part is a section of expectation that contains 22 statements to measure the expectation of quality of service by the consumer (customer). The second section is a perception section that contains the appropriate set of 22 statements to measure how users perceive (experience) the quality of the service. In these sections, for expectations and perceptions, use the same phrases with the difference that one asks about what the respondent expects from an excellent service provider, and the other asks about the actual, perceived, service provided. Consumers give their grades on the expectations and

perceptions of the quality of services on a seven-point Likert scale, which range from completely disagree (1) to completely agree (7).

The quality of services is calculated by the difference between estimated expectations and perceptions, that is, the gap between them. Parasuraman et al. (1994) found that the SERVQUAL scale is a very useful starting point for measuring the quality of services.

Three contrastive approaches to quality measurement can be classified within the education. The first approach adjusts the SERVQUAL instrument (Rigotti and Pitt, 1992, Cuthbert, 1996a, 1996b, Owlia and Aspinall, 1996, Oldfield and Baron, 2000, O'Neill and Palmer, 2001). The other uses methods for evaluating the quality of teaching and learning (Entwistle and Tait, 1990; Ramsden, 1991; Marsh and Roche, 1993), while the third uses methods for assessing the quality of overall student experience (Harvey et al., 1992, Roberts and Higgins, 1992; Hill, 1995; Aldridge and Rowley, 1998; Gaell, 2000; Watson et al., 2002; Wiers-Jenssen et al., 2002).

In the studies in which SERVQUAL is applied, it is necessary to modify the questionnaire, and there is no consensus on the dimensions of service quality and the importance of each dimension in the context of higher education. However, studies support the importance and reliability of this methodology within the measurement of the quality of higher education. Tan (1986) conducted a review of the methods used to assess the quality of teaching in higher education in the USA area back in 1986, in which three types of studies are differentiated, namely reputations involving the evaluation of subjects by experts, objective indicators and quantitative studies.

Methodology

Four universities have been chosen for this study to conduct a study on the quality of services in higher education. Of these four universities, two are public and two are private. They all offer programs at bachelor and master level, and three of them also offer doctoral studies (PhD). The survey sample consists of 388 undergraduate and master students. Data collection was carried out during 2013.

Since it was difficult to include students from all universities in the territory of Bosnia and Herzegovina, we selected to include four university students, two public and two private, based on their ranking according to Webometrics. Universities were selected according to the criteria of the two best public and private universities in the territory of Bosnia and Herzegovina according to Webometrics ranking. These were the following universities:

- University of Sarajevo (UNSA).
- University of Zenica (UNZE).
- International Burc University (IBU).
- International University of Sarajevo (IUS).

Using the Sample Size Calculator⁹, we calculated the desired sample size. This calculator is presented as a public service survey software by Creative Systems Research. Our target population is 128.119 students in the territory of Bosnia and Herzegovina. Therefore, with confidence level of 95% and confidence interval of 5 our calculated needed sample size was 383 students.

Also, the number of distributed polls was equally represented by universities. The research tool was a structured survey consisting of 54 questions. This instrument is chosen because it gives researchers the ability to collect data on a variety of factors and thus achieve a larger sample. We collected 388 fully completed surveys via electronic and printed channels, which allowed us to reach the planned sample size based on the level of reliability and confidence intervals.

Results

As we have already said, in comparison with the indicators of the intellectual capital of higher education institutions and ranking of universities we can see that there are common indicators. Therefore, as part of our research, the Webometrics list will be used as the rank-list of successful universities tested and their competitiveness on the market of Bosnia and Herzegovina.

The university's position is compared to their overall perceived quality of service in all dimensions (Table 2).

As can be seen in Table 3, ranking according to the Webometrics ranking of the University at the level of Bosnia and Herzegovina corresponds to the rankings obtained according to the overall perceived quality of service of the mentioned universities.

Table 2: Total mean value of perceived service

	Mean				
	UNSA	UNZE	IBU	IUS	Total
Tangibles	4.05	3.86	3.83	3.83	3.89
Reliability	3.62	3.51	3.48	3.47	3.52
Responsiveness	4.43	4.25	4.25	4.19	4.28
Assurance	4.02	3.90	3.82	3.74	3.87
Empathy	3.84	3.72	3.60	3.56	3.68
Service quality	4.21	3.85	3.85	3.81	3.93
Total mean	4.03	3.85	3.81	3.77	

Source: Authors' own work

⁹ The Sample Size calculator can be used and found at <http://www.surveysystem.com/sscalc.htm#one>

We can conclude that the competitive position (ranking of the university) is directly dependent on the overall quality provided by the given institution. Therefore, we confirm our claim that the quality of education services directly affects the competitive position of the educational institution.

Univerzitet	World ranking	Ranking in Bosnia and Herzegovina	Mean of total perceived quality of universities
University of Sarajevo (UNSA)	1859	1	4.03
University of Zenica (UNZE)	3531	2	3.85
International Burch University (IBU)	7400	8	3.81
International University of Sarajevo (IUS)	7912	9	3.77

It is also noteworthy that the greatest difference in the mean values of total perceived quality is precisely between the University of Sarajevo, while remaining at approximately the same average values. It also contributes to the high position of the University of Sarajevo at the Webometrics rankings.

Conclusions

The research results obtained support the previous quality service studies conducted by various researchers, and concluded that these five dimensions represent high quality services. This research serves as an addition to other published research to demonstrate that this model is applicable to a wide range of services, including the higher education sector.

Ranking according to the Webometrics ranking of the Universities at the level of Bosnia and Herzegovina corresponds to the rankings obtained according to the overall perceived quality of service of the mentioned universities. And we see that the competitive position (ranking of the university) is directly dependent on the overall quality provided by the given institution.

This study also has several limitations. First, not all universities are involved in this study so that for future studies it would be good to include all private and public universities in the territory of Bosnia and Herzegovina and to include research institutes. In this way, the sample would be even more representative and would increase the validity and validity of the research results.

Secondly, this research is necessary to be replicated by other researchers to further determine and confirm that the modified SERVQUAL scale used in higher education services has its relevance and validity.

The basic feature of today's market is the vast number of competitors that are constantly struggling for a limited number of users. Therefore, service companies are increasingly adopting customer relationship management concepts, especially due to constant user-specific, individual-user-specific access. Higher education institutions, as well as service providers, have the potential to create an advantage and maintain and develop a long-term relationship between them, as providers of services, their service users, students, solving their problems and making them loyal to institution. In this way, in the long run, the clients themselves promote the institution and in some ways become the walking image of the higher education institution. There is a need to establish institutional cooperation between universities, governments and research institutions to achieve those goals. Education represents a means to improve economic standards as well as a means to spread spiritual perspective and improvement of own intellectual and emotional life. Sociologically it is established that education is beneficial both for the individual and for society as a whole.

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